

# Modern Design for Studio Spaces and Unique Residential Architecture [Studios, Lofts, Apartments, Condos, Units (Multi-Storey/ Duplex-Family Dwelling / Single-Family Dwelling /Triplex/Fourplex /Penthouses)]

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## ABSTRACT:

Housing is one of the basic human needs. People need homes to keep them safe against natural and man-made threats. Homes provide a haven where people can relax and retire after a day of work and activities where the whole family meets after every workday or school day. Home is the cradle, a place of rest, shelter, residence, and security. The research explores an important relationship between the private nature of comfort in houses and how it directly affects happiness and privacy. The changing needs and demands of residents and owners that change over time require some precautions in house planning. Besides, social, cultural, and economic conditions influence an individual's needs. While some people continue to move into larger houses, others are starting to choose houses with less space. The design of the different types of residential spaces is greatly affected by the quantity and way of distributing furniture. Therefore, the research aims to analyze the types of modern residential spaces through the design of studios, lofts, apartments, condos, multi-storey houses, duplexes, single-family houses, triplexes, fourplexes, and penthouse apartments. The research studied each type of residential space from concept, characteristics, history, interior analysis of each space type, criteria of selection, furniture requirements, challenges, and disadvantages for a certain community. Finally, the research concluded that the types of residential design have created a new approach and criteria for interior design according to the requirements of a community survey.

## 1. Introduction

Interior design involves the act of creating. Creative interior design makes our lives comfortable, enjoyable, rich, safe, healthy, efficient, and orderly. (Cho and Suh, 2020) Interior design is an essential component of residential space and a required skill for architects and designers. (Mitton and Nystuen, 2016) Designers care about user-centered housing designs. (MIZRAK, 2015) One of the goals of architects and designers is to build spaces that improve cities and the quality of life for residents and owners. (Fontenele, 2019) Attached and detached, free-standing, single-unit, multi-unit, duplex houses, apartment buildings, and mobile housing such as tents, trailers, and houseboats are all examples of housing facilities. Residential spaces are currently categorized into studios, units, penthouses, etc. The importance of research for creating new ways of living is certainly an inspiration for architects and designers. The type of space that the resident gets for his family depends on multiple factors, including lifestyle, location, and budget, that play a major role in decision-making. (Builders, 2019) These houses or dwellings are called “residential spaces.” It can range from a single-detached house to a row of several houses or rooms located in a building, such as two apartments in the building: the loft apartment and the studio apartment. (MIZRAK, 2015) In our developing world, the increasing needs of people and technological developments that occur in line with these needs affect the changes and developments in society. In the wake of these developments, our expectations about the future of the structures and houses we live in are also changing. In addition, this paradigm shift and the emergence of new arrangements in existing structures lead to a movement of change, therefore leading to the emergence of the “variance” concept. The research problem is that the changing needs, requirements, and demands of residential users that change over time require some precautions in planning residential spaces. Besides the existing buildings adapting to new functions due to the new requirements, the assumption of possible future changes in the way the buildings will be built makes the concept of variance and flexibility important in the planning and interior design phase. The research discusses a solution to the housing problem as many compounds were created to improve house spaces rather than the monotony of residential architecture as an alternative to changing conditions. The research first analyses the concept of housing and its development by review-

ing history and literature, as well as its relationship with the customer’s needs, then designs and applies them. In addition, it analyses five different types of contemporary residential spaces, their characteristics, their concepts, and their interior analysis of each space type; criteria of selection; furniture requirements; challenges; and disadvantages for a certain community. The designs of the newly built houses are characterized by detailed interior designs, which add elegance to each simple interior design, making it another scene of luxury. Residents can enjoy a unique aesthetic according to their requirements and needs. The analysis of interior house spaces meets the residents’ needs for comfort and functionality. Besides, the way furniture items and elements are distributed has a significant impact on the design of residential space types. The research explores the different housing spaces through their types, development, concepts, interior analysis, criteria of selection, furniture requirements, and challenges and disadvantages for a certain community because of the changes we are experiencing in interior design and the changing needs of the client. **Therefore, the research aims to:**

- Enhancing the continuity and changes in the dynamics of modern housing units and the relationship between these changes and design evolution due to the requirements of the client when selecting the best house for him.
- Defining the homeowner’s needs means understanding the home’s size, materials, budget, number of families, and uses to analyze the clients who will live in the house through a community survey (Table 1). (Famulari, 2019)

The research mainly focuses on the literature related to studios, lofts, apartments, condominiums, and units (multi-storey, duplex-family dwellings, single-family dwellings, triplex, fourplex, and penthouses), with concepts of the social and cultural change that house designs have undergone and their evolution. (Kellogg, 2005)

## 2. Materials and Methods

The research is based on descriptive-analytical methodology through studying the factors and criteria for residential space types. Its analysis covers different types of housing, and each type has special needs for the client because each type of housing space has a specific nature.

## 3. Dwelling Houses

A “home” is a structure, space, or area in which an

individual or a small group of people makes an emotional investment. “House”, as opposed to “home”, is explored according to several perceived dimensions that include physical, economic, social, and personal traits. Houses are commonly ascribed to economic, exchange, and aesthetic values. A home is a prime location for family social relationships and kinship interactions, a place to carry out the everyday routine of family life. A dwelling is our haven, a place that embraces us as we walk into decoration. Architecture is a tool to improve life. A home is simply a physical structure. It is a place of privacy and a comfortable place where we can have adequate spaces like a bedroom, salon, toilets, and basic infrastructures like water and electricity. (Okeyinka et al., 2012) Many homes have been demolished and then reconstructed. However, some of the original homes have survived, and these old “huts” have become part of the neighborhood. (Mazur, 2000) Residential real estate varies and develops from time to time according to its specific characteristics and needs of the market, despite its different names and types. The aim is to match the market’s needs and change customer expectations. The research will study the most important types of residential space and their characteristics (Figures 1,2,3). (Aqarfeed)



Figure 1(Businessyield, 2021): An apartment is a type of housing unit.

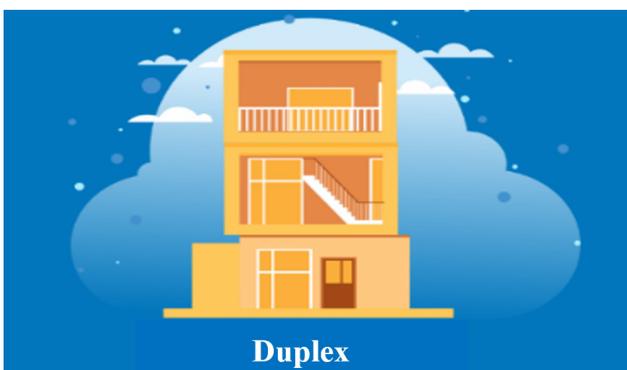


Figure 2(Businessyield, 2021): A duplex is a type of housing unit.



Figure 3(Businessyield, 2021): A penthouse is a type of housing unit.

#### 4. Client Requirements

Before making any decisions, from building a new house, buying a different one, or simply considering a little remodeling of where one currently lives, the clients should define their house’s needs, lifestyle, hobbies, habits, and activities that constantly change. Over time, the number and ages of people living in the house change. Children grow, and their spatial needs change. The house must function efficiently for the client. When analyzing the interior spaces of a house, there are two primary considerations: functional and aesthetic. Both are intertwined and difficult to separate. However, it is far better to first analyze the house from a functional standpoint because it is used as the most important factor. The client can usually modify his aesthetic needs and desires to suit his needs and functional requirements much more easily than the other way around. The following functional and spatial divisions should be carefully considered when evaluating the house regarding the needs of those who live or will live there. Identification of house users will have different user needs, which are often determined by the number and ages of the home’s families and owners. (Alexander, 1981)

#### 5. The Residential Architecture Types

The search for new ways of living is certainly an inspiration for architects and designers. One can determine their requirements by using new spatial arrangements in houses, apartments, and family compounds from the first half of the twentieth century. (Fontenele, 2019) There are different types of housing, and each type has special needs for the client. In addition, some types of housing spaces have a distinctive nature. Their types, as well as the

difference between them, will be analyzed as follows. (Figures 4,5):

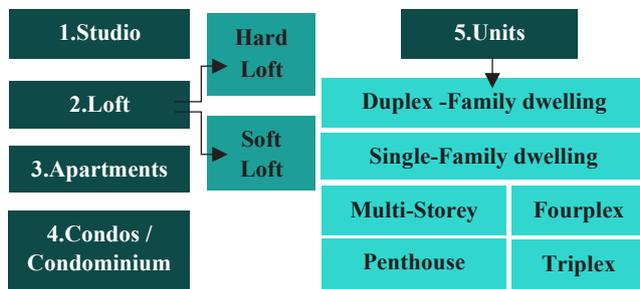


Figure 4(Author, 2018)): A diagram of residential architecture types.

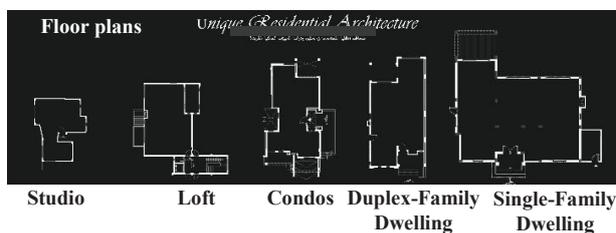


Figure 5(Author, 2018)): The research will analyze the floor plans of five house types: studios, lofts, condos, duplex-family dwellings, and single-family dwellings.

### 6. The Community Survey

The Community Survey when people select residential housing types based on their needs and categories.	
Type	Certain Community
1. Studio	<ul style="list-style-type: none"> <li>Young people.</li> <li>Small families.</li> <li>Adults or couples without children.</li> <li>Individuals.</li> <li>Artists.</li> <li>Designers.</li> <li>Craftsmen.</li> <li>Bachelors.</li> <li>Hostels.</li> <li>Retirees.</li> <li>People from low and middle incomes classes.</li> <li>Families with two people.</li> <li>Unmarried youth.</li> <li>The labor category, workers.</li> <li>Owners and investors.</li> </ul>
2. Loft	<ul style="list-style-type: none"> <li>Young people.</li> <li>Workers.</li> <li>Artists &amp; Designers.</li> <li>Bachelors.</li> <li>Couples without children.</li> <li>Small families.</li> </ul>

	<ul style="list-style-type: none"> <li>Artists who search for inexpensive spaces suitable for multifunctional use.</li> <li>Artists such as painters, sculptors, dancers, actors, photographers, writers, designers, and craftsmen.</li> <li>People from the upper-middle and upper classes.</li> </ul>
3. Apartment	<ul style="list-style-type: none"> <li>Everyone, especially families, due to the diversity of their spaces and shapes.</li> <li>People from the lower and middle classes.</li> <li>Owner and investors.</li> <li>Renters.</li> </ul>
4. Condo	<ul style="list-style-type: none"> <li>Everyone, especially people who want a convenient lifestyle.</li> <li>Owners and developers.</li> <li>Different tenants.</li> <li>Ownership interest in the living condo.</li> </ul>
5. Unit	
1. Multi-storey	<ul style="list-style-type: none"> <li>Large families.</li> <li>People from medium and high-income classes.</li> </ul>
2. Duplex Family Dwellings	<ul style="list-style-type: none"> <li>Large families who cannot afford the villa's price.</li> </ul>
3. Single-Family Dwellings	<ul style="list-style-type: none"> <li>Large families who prefer a huge patio and plenty of space.</li> <li>Multifamily, single-family, or household.</li> <li>The owner, who holds an undivided stake in the unit,</li> <li>Investors and developers.</li> </ul>
4. Triplex	<ul style="list-style-type: none"> <li>Large family.</li> </ul>
5. Fourplex	<ul style="list-style-type: none"> <li>Large family.</li> </ul>
6. Penthouse	<ul style="list-style-type: none"> <li>Large family.</li> <li>High-class families want privacy because they are similar to the villa.</li> </ul>

Table 1(Author, 2018)): The Community survey categories, when people select residential housing types based on their needs and requirements.

### 7. Studio Apartments (Small Homes) Design

The smaller housing units may be of any type of structure. Young families buying their first house, adults wanting a smaller house, workers, artists, retirees, bachelors, and couples without children are

all prime candidates for small houses. They offer many advantages, such as requiring less cleaning, painting, and routine maintenance. They tend to be more sustainable and energy-efficient than larger houses. Additionally, smaller houses may allow their occupants more time to pursue leisure activities or other personal activities. Hence, many individuals and small families discover that small houses meet their needs and lifestyles better. In the past, the average American home occupied about 1,700 square feet. In 2013, the average newly-built single-family house was closer to 2,500 square feet, with four-bedroom, three-bathroom houses. In contrast, many Asians and Europeans consider a thousand square feet of the city to be very generous. There is a general misconception about small spaces and quality. For some people, small means cheap or undesirable. Despite this, small houses can be perfect places to live in. Studio apartments are small houses. (Tremblay Jr et al., 2014)

### 7.1 Studio Apartments History

The first studio-type housing that appeared in America became scattered all over the world in the coming years. The studio flourished as American culture in Turkey, to fulfill the need for individual living. During the 19th century, immigrants from America and other European countries, mostly from Great Britain and Ireland, emigrated. The search for solutions to these housing problems has led to the creation of studio-type apartments. (Ulusoy et al., 2016) Social, cultural, and economic conditions influence the needs of an individual. In this interaction, we can notice changes in the accommodation culture. At the beginning of material needs, accommodation is constantly changing and developing with the influence of social, cultural, and economic factors. Globalization has led to a diversity of cultural life. In addition, the only person who lives in America (apart from family) whose culture is identical to Western culture has found its place in our culture over time. The desire to live alone has given rise to a housing model for one person or two people that differs from the usual homes for a whole family. Nowadays, the number of "studio-type" houses that are in high demand with the new lifestyle that they follow is very high. The city's experience changes dramatically with globalization. The deepening of the gap between the rich and the poor, the diminishing of differences between societies, the spread of consumption cultures, the development of a unified culture and lifestyle, the emergence of differences, confusion, and social polarization are the most prominent effects of globalization in urban life. (Ulusoy et al., 2016)

### 7.2 The Emergence of Studio Apartments

These studio apartment buildings represent an early form of "studio apartment", the term now commonly used that originated in the 1960s to describe industrial buildings converted into studio lofts, a single unit that combines living and workspace. The development of the studio apartment building significantly influenced the acceptance of the apartment building as a housing profile suitable for the upper-middle class in New York City. Artists and bachelors were the first groups to rent apartments, as well as those with the appeal of their "cultured" personalities. Furthermore, bohemian lifestyles increased appreciation for the apartment among wealthy New Yorkers who aspired to be arts insiders. Later in the 19th century, many artists took on a larger role in the construction of studio apartment buildings as owners and investors. Several artists' groups joined to build co-op studio buildings, investments that bought each owner a permanent lease into a condominium, studio, or live-action unit in the building. By this time, artists and bachelors were not the only tenants of apartment buildings, and many were constructed using the cooperative method of the economy. (Hoganson, 2020) In addition, studio design is a workplace for designers and craftsmen involved in designing and developing new products or things. Besides, facilities in the design studio include clothing and technical equipment for furniture best suited for design work, extensions to workbenches, small machines, computers, paint shops, large display panels, and screenshots. (Wikipedia) These houses, which ranged from rented rooms in purpose-built urban dwellings for working women to large country houses, constituted major sites of resistance and self-expression. In their quest to find a "room of their own," women art workers increasingly sought their studios, which served as the central space in their lives after the life path of working women in art. (Thomas, 2020)

### 7.3 Interior Analysis of Studio

Studio interior design should combine comfort, practicality, attractiveness, and exclusivity. modern, high-quality materials for interior decoration, modern modular furniture that can be made to any customer's demand, multifunctional built-in household appliances, comprehensive lighting systems, and unique textile elements (Figures 6,7,8,9,10). (DD-restaurant) The studio consists of one bedroom, a kitchen, a bathroom, and a living room that suits the lifestyle of the owners of this category. (Elhor) It is possible to divide all functional areas with the help of a mirror, glass walls, high aquariums, and lighting

elements. The ceiling can be made of a multi-level suspended gypsum board.

Besides, the main advantages of studio design are open space and light. The desire to create an atmosphere over a large area means there are no pressing partitions. Much goes to the redevelopment of studios into small rooms precisely because of the lack of lighting. (Homemaster)

**The main advantages of the studio:** (Shattb)

- Its price is simple.
- It is suitable for an individual.
- Sunlight decomposes throughout space.

**7.4 Studio Design Styles**

- It is possible to design the studio in creative, pop art, colorful, artistic, bohemian, or dramatic modern styles. There are no restrictions for designers.
- It is possible to design the studio in an industrial style. There are no partitions.
- It is possible to design the studio in a minimalist style.
- It is possible to design the studio in Japanese style. (DD-restaurant)

**7.5 Basic Techniques of Space Division in Studio**

The arrangement of small spaces reduces the unpleasant effect. Furniture elements can serve as decorative partitions. Designers should follow some recommendations for space planning in the studio (Table 2). (Homemaster)

Elements	Functional Features in the Studio
<b>Curtains, Screens</b>	Curtains and screens help the designer separate the recreation space during sleep in the studio. Everything can be easily removed or moved if necessary.
<b>Shelving unit, Bookcase, Upholstered Furniture, or Table</b>	Pieces of furniture can divide the studio space. Moreover, the interior area of the studio is as functionally occupied as possible.
<b>Bar Counter</b>	Bar counters help the designer divide the kitchen from the general space. They can serve as a storage place for cutlery.
<b>Different Colors and Finishing Materials</b>	On the walls of the studio, the designer can make smooth transitions of shades and use different materials for finishing the floor in the studio.
<b>Carpet</b>	It is enough to move the studio to a new place and rearrange the furniture.

Elements	Functional Features in the Studio
<b>Light</b>	The lighting of different brightness and location originally divided the studio space.

Table 2<sup>(Homemaster)</sup>: Basic techniques of space division and planning in the studio.

**7.6 Criteria for Studio Selection**

A studio apartment is a popular choice for the younger generation of modern housing. It is devoid of walls and partitions and can be decorated in an individual, creative style. At the same time, it will be the ideal place for a relaxing holiday, having fun with friends, and solitude during work.

The studio is not intended for a large family with children or those who need a private, enclosed space. (DD-restaurant)

**7.7 Furniture Requirements of Studio**

When designing a modern studio apartment, portable and multi-functional furniture are indispensable, which can be compactly folded when it is not needed, and then folded again, turning it into a comfortable place. Designers can use furniture made of natural materials such as wood, glass, and seersucker. They are vivid, authentic, and inspire the most daring design decisions. In addition, the design of a studio apartment provides: (DD-restaurant)

- The light color range of finishing materials, furniture, and textiles.
- Functional portable furniture.
- The presence of glass surfaces, mirrors, and partitions.

**7.7.1 Choosing and Arranging Furniture in Studio**

The idea of a one-room studio apartment includes a small amount of furniture. Compactness and functionality are the most important things when choosing furniture. The designer needs to think in advance about how to divide the main zones, the circulation of movement, and furniture according to the plan. Large items should be placed around the perimeter of the studio. A designer can choose convertible furniture. This is especially recommended for organizing a sleeping place. (Homemaster)

**For small areas, there are some design ideas:**

- It is better to replace bulky furniture with glass, plastic, or metal products. They look much lighter visually. (Homemaster)
- It is better to select the necessary multifunctional furniture that can be easily moved, for instance, a table on wheels, a folding bed, and folding chairs.

### 7.8 The Challenges and Disadvantages of a Certain Community in a Studio

The studio is rapidly gaining popularity all over the world, especially since apartments are now very expensive. Studios have a single room unit, as well as a lower build and maintenance price compared to standard one-bedroom apartments. (Mansuri) Studio apartments are preferred by many, especially young people and workers who want to reduce their high housing expenses because of their cheaper price and their small size. (Elhor) These spaces are suitable for hostels, bachelors, retirees, (Lancor, 2019) families with two people, and the unmarried youth category, as the labor category prefers them because they are more suitable for their financial conditions. Therefore, people with low and middle incomes are unable to purchase expensive houses. The studio apartment is a new concept suitable for them. (Elhor) (Aqarfeed) The main disadvantages of the studio that may make people turn to other types of housing units are: (Shattb)

- It is not suitable for receiving guests.
- There is no wall separating the kitchen from the sleeping area.
- Lack of privacy.



Figure 6((Author, 2018)): The studio project perspective design.

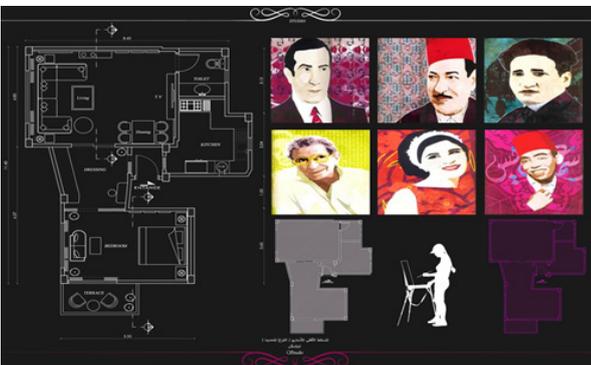


Figure 7((Author, 2018)): The studio project's furniture floor plan and creative professions are suitable for studio spaces, which are vital spaces for ideas and concepts.



Figure 8((Author, 2018)): Sections of the studio project.



Figure 9((Author, 2018)): Interior design of the studio project.



Figure 10((Author, 2018)): Modern concept for the studio project.

### 8. Loft Design

The loft concept has become something very special, a combination of local practices and aesthetic trends in interior design. Two central elements represent the loft and symbolize the broader transformation of the space. Firstly, the loft embodies the modernist concept of space as it offers the possibility of multi-purpose spaces and functional aesthetics. Secondly, in lofts, the design departed dramatically from the minimalist artist's loft. In addition, they are now mainly or entirely home spaces. (Podmore, 1998)

### 8.1 Loft History

The loft is a large apartment without permanent divisions. The concept of a loft came from Paris in the 1960s. Parisian artists had the first idea of turning warehouses and industrial buildings into artists' studios. (Podmore, 1998) From the economic necessity of the fifties to the new style of urban life at the beginning of the twenty-first century, the authors have fully assimilated the essence of loft life. (Piveteau and Wietzel, 2004) Loft living emerged in the late 1950s as a result of the commercial and industrial relocation of artists, who searched for inexpensive spaces suitable for multifunctional use. (KARSLI and ÖZKER) In New York, the gap between living lofts and boutique hotels is narrowing. The organization of rooms in new apartment blocks has become complicated. (Kellogg, 2005) After the end of the 1960s, the rise in prestige of the arts and artists increased the demand for converted loft spaces.

Artists such as painters, sculptors, dancers, designers, photographers, and writers, who needed large spaces to work, began to use these buildings as both working and living spaces. Low-rent buildings have been transformed into mixed-use spaces where artists create, exhibit, and live, as well as work, thanks to open spaces with high ceilings, lit by large windows and suitable for flexible use. Artists created the identity of the loft. In addition, the media created an image of the loft-living lifestyle, for instance, the settlers before them, it was the first generation of artists, craftsmen, and actors who moved into the loft here before the 1970s. (KARSLI and ÖZKER) After the deindustrialization movement began in the 1950s in the USA and Western Europe, the word began to be used as a new style of housing apart from its lexical meaning. This new classification, developed from converting former industrial buildings into houses, was also called a loft. This diversion occurred spontaneously at the time, with artists trying to live and work in those outdoor buildings because they were cheap and suitable for realizing artworks of all sizes. Until 1970, living in a loft was neither considered elegant nor comfortable. In the context of this progress, there are social changes that have occurred concerning the deindustrialization of the economy and the post-industrial transition. However, in the 1970s, former industrial buildings began to be more romantic than industrial post offices, apartments, and shopping centers. Middle-class consumers are beginning to find the idea of "living in lofts" attractive. The decline of western industrial areas since the 1960s has been viewed by architects and urban planners with growing doubt about what the future of post-industrial settings will bring. Lofts have

become a kind of luxury residence. In the 1980s, loft living rooms began to represent luxury, with rents changing between \$300 and \$600. In 2000, attempts to promote its loft-style housing typology led to the perception of open-plan living with high ceilings as an indication of a new lifestyle. Conversion from a former industrial building was not even a requirement anymore. This new lifestyle was adopted by members of the upper-middle class and high class. (MIZRAK, 2015)

### 8.2 Loft Concept

- The Dictionary of Architecture and Construction defines a loft as "an unprepared space under a roof, often used for storage," as well as a building with open, undivided floor space used for commercial or industrial purposes.
- After the end of the 20th century, the word "loft" was defined as "any rehabilitated large space whose original structure has been converted for domestic use". (KARSLI and ÖZKER) A "loft" is defined in the Oxford Dictionary as a room or space directly under the roof of a house or other building used for housing or storage.

The types of lofts have undergone a two-way change according to the changing social-cultural features of the area: (Podmore, 1998)

1. The first type is the commercial use of lofts by cultural intermediaries (boutiques, cafes, places of recreation, and entertainment). The most important reason for this is the emergence of "fashion-oriented design and consumption" spaces, attributed to the region's following of contemporary trends and globalization.
2. The second type of loft is a semi-imitative loft that has been converted for residential use. The most important reason for the emergence of imitation lofts is the fact that the non-proprietary buildings in the area were bought and demolished by large-scale investors to build protected residential areas that address the high-income class. These lofts have been called "imitative lofts" because they were built and not converted. In addition, they were used as a commercial image without meeting loft design standards. Most of these lofts are rented daily at very expensive rates.

### 8.3 Loft Characteristics

The loft offers flexibility, and a special luxury for loft residents is a special luxury. While both values the open plan for its freedom, the loft offers a new form of living space and an alternative to other forms of housing within

the city, which is particularly attractive to loft residents. Luxury is provided in space and size at a low cost; space becomes a luxury as many other amenities are lost. In describing loft spaces, residents have expressed distinct patterns of socio-spatial practices that reflect norms enshrined in both local and global forms of media. The loft aesthetic essentially provides a unified space that can be eclectically decorated. Instead of designing separate spaces in different styles, the space demands those eclectic tastes housed in one room. Lofts have a simple design and an open look, which is why they are so popular in urban settings. Many of the artists in the loft have given a very large portion of the space over to the studio function. (Podmore, 1998)

#### 8.4 Loft Conversions

Loft conversions may be aimed at alternative uses for residential use today. The loft concept is not only for residential use but also refers to various uses. These [lofts] are not traditional in look. They are becoming more expensive to buy. High ceilings make heating and cooling difficult. (Brianmayer)

[A "loft" is a floor that consists of a large unpartitioned space over a factory, warehouse, or other commercial space]. (Brianmayer)

#### 8.5 Interior Analysis of Loft

The loft is one of the most popular interior styles of the 20th century. It grew up in the USA, where many people in need of living space settled in non-residential industrial buildings. (Algedra, 2021) Loft interior design and the spatial standards created by the transformation of industrial buildings into living environments have created a new approach to interior design. Most of these lofts have spaces similar in size to other American houses. There are generally no interior walls, and routine functions such as eating, sleeping, entertaining, etc. Lofts are converted from industrial buildings for use as residences, home offices, art galleries, shops, workshops, etc. There are certain design criteria for defining lofts. There are many concepts and styles when designing lofts through open space and free planning. These styles combine various architectural trends. (Designuspro)

- A loft apartment is a dwelling that offers a large open space without interior walls. Units feature details such as floor-to-ceiling windows, exposed piping, brick walls, and concrete floors (complete with scratches and cuts). (Piveteau and Wietzel, 2004)
- A loft is a room or space directly under the roof of

a house or other building that can be used for accommodation or storage. Lofts are large living spaces that are highly adaptable, with high ceilings, and large windows, and are often converted for residential use. (Brianmayer)

#### 8.6 Schemes and Freedom of Loft Space

High ceilings and wide windows are key features of loft-style design schemes. Loft living rooms can be divided by glass walls or doors, using metal partitions, or, in some cases, a designer can divide the loft with a library that separates two places. The loft-style is characterized by the simplicity of uncomplicated forms, open-plan spaces, minimalist décor, sharp horizontal and vertical lines, natural brick walls or looks, and the presence or imitation of open structural elements, such as pipes and iron columns. (Algedra, 2021) Due to their desirability, lofts tend to be a bit more expensive than standard apartments of a similar size. In many cases, they are used as a shared life and work or as a creative space, such as when the tenant is an artist, dancer, or fashion designer. Usually, a loft apartment is rather large in square footage. (Thewelcomelace) There are many types of lofts, such as hard lofts and soft lofts.

#### 8.7 Spatial Criteria of Loft

The criteria for lofts can be subcategorized into four categories: (KARSLI and ÖZKER)

##### 1. Undivided open plan

The open-plan loft spaces are designed to serve industrial purposes. All units are placed in a converted loft to adopt new functions in an open system except for certain functional and decorative preferences.

##### 2. Large glass windows

Lofts are illuminated by large windows that are characteristic of industrial buildings, in addition to having an average height of 2–2.5 meters. Some lofts have skylights to increase the amount of light in the space.

##### 3. High ceiling

Although lofts do not serve industrial functions, they do appear on industrial scales in terms of dimensions. Ceilings are much higher than described in current residential architecture (about 3.5-4.5 meters).

##### 4. Exposed structure

The fixed structural elements of the lofts are not hidden. Wooden or steel structure joists, bare walls, columns, air conditioning ducts, plumbing elements, and electrical cables are generally exposed. The exposed structure is suggested to be the characteristic appearance of the lofts,

which were initially designed as warehouses, factories, or workshops. This property is interpreted as having exposed structural components, especially in the new lofts.

### 8.8 Criteria for Loft Selection

Features of the loft-style in the interior freedom are how the designer can describe the loft-style in one word. This is the freedom of expression and the scope of creativity. One of these styles is the loft. It is suitable for creative, freedom-loving people who do not want to live by generally accepted norms and rules and who want to create an atmosphere for their lively and eventful lives. (Designuspro)

Therefore, the main features and criteria of the loft: (Algedra, 2021)

- There are large areas of free space ranging from several hundred to thousands of square meters.
- High ceilings.
- Huge windows.
- Rough finish on walls, floors, and ceilings.
- Open large metal structures such as pipelines, ventilation, and bearing beams.
- There is a small amount of furniture, but it is emphatically elegant.

### 8.9 Furniture Requirements of Loft

Functionality is the main requirement in the loft-style of furniture. It can be designed to be contemporary as well as antique. The combination of modern and minimalist elements with vintage looks very impressive. Screams and bright colors in the design should be avoided. It is better to choose neutral colors with expressive accent elements. Designers can make the room more spacious, so it is necessary to leave as much space as possible between things. (Designuspro) The furniture should not come close to the walls. The distance between the walls should be at least thirty centimeters. The decor and furniture design are essential parts of the loft-style living room. Starting with the sofa, it should be huge, covered with leather, and made of high-quality elements, and the element of comfort is a desirable part of the room. The loft-style living room design implies the presence of benches, armchairs, and many seating places. (Algedra, 2021) Certain rules apply to the selection of furniture in loft-style bedrooms. Interior items should be as multifunctional as possible and, at the same time, embody the most original and bold design ideas. The bed must necessarily be made of metal. Fabric upholstery is allowed. A designer can choose a completely wooden model. However, in this case, the

wood should not be covered with varnish. In such a bedroom, a minimum amount of furniture is allowed. The bed is set against the wall, with elements of unfinished materials. As a rule, interior objects become bright accents against the background of light walls. Even an ascetic style, such as a loft, cannot exist without textiles. They are not welcome in this case, so only textiles are shown, with a blanket on the bed and linen. It can be used as a carpet on the floor, but it is a small, saturated bright color. The main task in the design of a small kitchen in the loft style is to create the most functional space in a limited space. In the same way, the color of the furniture is chosen strictly as one-tone, two, or three harmonizing or contrasting. Arranging furniture in a loft-style for a small apartment is not difficult, but you need to consider that it is often a way to divide the open space of an apartment because there are no walls. (Dominospizzaschool) Despite all the brutality, the democratic character, the willful imperfection, and negligence of the style, various accessories, and decorative elements are given the greatest attention in lofts. Various paintings printed on the walls, photo collages, vases, and some other elements of decor not only do not look inappropriate but are an integral and very important part of the loft style. This style is ideal for creating the decor of part of a country house, mansion, or city apartment, or implementing it as an additional element in living rooms or bedrooms (Figures 11,12,13,14,15,16,17). (Algedra, 2021)

### 8.10 Lighting in Loft

Lighting materials should have a more concise and simple form and be simple and harmoniously integrated into the general color palette of the room.

### 8.11 The Challenges and Disadvantages of a Certain Community in Loft

Poor citizens, students, and representatives of the “free” professions, such as artists and musicians, did not have the means to rent expensive housing or to repair it well. They left open bricks, concrete walls, and water pipes. At first, the lack of walls, beams, and tubes with their special appearance struck the residents, but then the musicians, artists, and others saw in this design something unique and innovative. (Algedra, 2021) A loft-style interior is a great place for creative, freedom-loving people who are not afraid to experiment. It is the combination of a large open space without walls or with brick walls, high ceilings, innovative technologies, and modern technology in one harmonious combination. Based on the peculiarities of that era, the basic concept of loft-



### 8.12 The Difference Between Studio and Lofts

Only a few decades ago, the terms "loft" and "studio" spread and inspired two distinct images in the minds of discerning tenants and buyers who were looking for a distinctive development in residential neighborhoods (Table 3). (Prather, September 09, 2019)

No.	Team	Description
1	A loft	A loft is defined as the large loft of a factory or commercial building that can be used as an apartment. It is spacious and does not contain any partitions. Besides, it can consist of a living area, a kitchen, a sleeping area, and a bathroom. It is more expensive due to its size, which allows the resident to divide it into several rooms. Besides, loft apartments are usually located in cities and sometimes double as workspaces or art studios.
2	A studio	A studio can only have one or two rooms with most areas combined to save space because it is small, cheaper, and more affordable.

Table 3: The difference between studios and lofts.

## 9. Apartments

The studio is rapidly gaining popularity all over the world, especially since apartments are now very expensive. Studios have a single room unit, as well as a lower build and maintenance price compared to standard one-bedroom apartments.

### 9.1 Apartment Concept

An apartment is a unit in a building that contains one or more rooms and a place to live. In addition, it usually has utilities such as a kitchen, bathroom, sleeping, and living areas. It is a residential unit within an apartment building, containing a certain number of rooms and bathrooms. Apartments also referred to as flats, are the most common. Today, there are different apartments available for rent. (Elhor)

### 9.2 Interior Analysis of Apartment

Some of them consist of one, two, or three bedrooms. Residential apartments are characterized by their prices and sizes, which vary according to residents' needs. In addition, they are one of the most available types of apartments in the market due to their high demand by investors. Some of them are available within residential projects or in independent buildings.

### 9.3 Apartment Types

There are many types of apartments, such as: (Figure 18) (Propertyguru, 2021)



Figure 18<sup>(Kellogg, 2005)</sup>: A diagram of apartment types.

### 9.4 Criteria for Apartment Selection

The apartments are characterized by detailed interior designs, which add elegance to the interior design, making it another scene of luxury. Residents can enjoy a unique aesthetic that can reflect their needs. Designers can combine dynamic creativity with decades of apartment design experience to build and bring innovative structures to life. They meet residents' needs for comfort and functionality. (Algedra)

### 9.5 Furniture Requirements of Apartment

The furniture design in an apartment is related to the apartment's style. Apartments can be used in many styles and concepts because of the different types, sizes, spaces, and needs of residents. The modern style is usually combined with the bright colors of decorative elements in apartments. In the open space of the living room, the designer can choose a shade of light beige or cream that contrasts beautifully with the black decorative pillows on the sofa and coffee table. The dining room is connected to the living room area, which creates a visually comfortable space for the owners and guests. The classic white furniture throughout the entire space can provide a fresh, airy ambiance and blend perfectly with the entrance to the bedrooms and kitchen. The kitchen can be very stylish and elegant. Designers can use white for furniture and appliances, along with a very light cream shade on the layered floor. Designers can discover bedrooms that have the owners' personalities in interior design. (Design)

### 9.6 The Challenges and Disadvantages for a Certain Community of Apartment

Living in apartments is suitable for everyone, especially families from the lower and middle classes, as well as investors and renters. The apartment's challenges are in the lack of privacy. The interior design of the apartments reflects the habits, lifestyles, and temperaments of the owners. Designers can find standard solutions that are applied to interior design, which expands the space around us. The apartment's design makes the design unique from stereotypes and ideas about comfort in design. The apartment interior

design in which the owner lives permanently should inspire comfort, give warmth to develop imagination and be imperceptible. Therefore, designers can offer modern ideas for individual planning in apartment design. (Design)

### 9.7 The Difference Between a Loft and an Apartment

There is a difference between lofts and apartments (Table 4).

No.	Team	Description
1	A loft	Lofts are flexible according to the owner's needs. It can be easily customized and can serve multiple purposes, including turning it into a work area and a living area. Some lofts have a staircase that leads to a semi-bedroom above the main floor, overlooking the rest of the area. (Propertyguru, 2021)
2	An apartment	One or more apartments, known in Britain as "flats", is a type of residential apartment space intended as a residential unit. It is usually distinguished by being a single-storey rental rather than having multiple levels. Hence the popularity of apartment buildings and structures, where similar apartments are usually located in buildings where there are others. Apartments were originally built due to the demand for low-cost housing by men and women working away from their homes. Rooms were simply furnished, although they are now more elaborate as people prefer to stay in them for longer periods. (Propertyguru, 2021)

Table 4: The difference between a loft and an apartment.

## 10. Condos or Condominiums

Condos are freehold ownership (houses) that provides a more convenient lifestyle than apartment ownership. (Proclickmarketing) Condominium apartments are multiple residential units where an individual owns each unit. All condo maintenance work is supervised

by the maintenance team. This is one of the main advantages of a condo apartment. (Lancor, 2019)

### 10.1 Interior Analysis of Condos

A condo is a residential property in which the owner owns the area of the building. Condominiums, or condos, are owned by the owner of each specific unit. These types of apartments are usually rented to tenants. However, they differ from regular apartments. The application process, criteria, and deposits may differ for different types of rental apartments. Therefore, the interior design of condos is similar to the interior design of apartments in many items. It depends on the needs, lifestyle, and budget of the condo owner (Figures 19,20,21,22,23,24).

### 10.2 Criteria for Condo Selection

Most of the condos were built in the last 30 years and include many of the amenities that current owners and renters have come to expect, including fitness centers, swimming pools, lounges, etc. These facilities are not found in most residential types. All these features make the condo more marketable, which increases its salability. Condos have many amenities, making them more expensive than apartments. (Manhattanmiami) Most condos are part of buildings or communities that are expressly designed for this purpose. Condominiums usually involve expenses such as maintenance and property taxes, and they are not considered investment properties. These types of units can be hard to sell, but they provide desirable property at a fraction of the cost of vacation resorts or motels. Condos are suitable for owners, developers, and different tenants for investment. (Businessyield, 2021)

### 10.3 Advantages of Living in a Condo

#### 10.3.1 Low Maintenance Living

Condominium exterior maintenance is ideal for buyers who do not want the higher maintenance (responsibility) of owning their home. (Businessyield, 2021)

#### 10.3.2 Amenities

Depending on the condo's community, owners may have access to first-class amenities such as a BBQ area, business center, pool, dog park, covered parking, and a clubhouse. In addition, the cost of these benefits is shared by all members. (Businessyield, 2021)

#### 10.3.3 The Feeling of Security

Some apartment complexes employ security guards, and the entrances are more difficult to get to from the

outside than those in single-family houses or cottages. Many people do not like living alone and living in a condo makes them feel safer. Depending on the building, the owner may have secured entrances, parking, and other security and safety features. This can be useful if the owner works irregular hours or travels a lot. (Businessyield, 2021)

#### 10.3.4 Possibilities of Socialization

Some owners organize social events such as pool parties, barbecues, and doggie play dates. Moreover, since they can see their neighbors.

#### 10.3.5 Affordability

Since condos are often more compact and require less land than single-family houses, they may be a more cost-effective option for owning real estate. Real estate taxes are usually reduced as well. For some first-time buyers, condominiums are ideal starter houses as they do not require the upkeep and maintenance of a separate house while still providing the benefits of ownership and equity development.

#### 10.4 Furniture Requirements of Condos

Furniture in condos is very different according to a variety of design styles. Because of their high quality, designers can use many more luxuries in condos than in apartments.

#### 10.5 The Challenges and Disadvantages of a Certain Community in Condo

The main difference between a condo and an apartment is the property structure. An apartment is a rental property owned by a company engaged in property management to generate rental income. Generally, in an apartment building, all units are the same and the owner is the same. In contrast, a condo is a private residence that can be rented to tenants. When we rent a condo, the sole proprietor is the property owner. When we rent an apartment, the company that owns the building is the property owner. Many primary homeowners live in apartment buildings, which are higher quality than apartment buildings. At first glance, many amenities in apartments and condominiums may look the same, but owners are more likely to find more upscale versions in condos since better amenities help raise property values. (Businessyield, 2021)

#### 10.6 Disadvantages of Living in a Condo

##### 10.6.1 HOA Limitations

One of the most common complaints about living in a condo community is that HOA rules can be restrictive, dictating everything from litter pickup and noise levels to the types of things that an owner can store in his yard and how many pets he can own. The covenants and regu-

lations before buying a condo are important to make sure the restrictions will not be an issue for the owner and his lifestyle. (Businessyield, 2021)

##### 10.6.2 Investment Risk

Condo owners share ownership with other people in the building, so condos can be a risky investment. Because the owner is in the same compound, if someone closes their condos, it could have an impact on the owner's value. (Businessyield, 2021)

##### 10.6.3 Lack of Privacy

Since condominiums share common areas such as hallways, outdoor patios, and amenities, a condo may not be right for these types of people. There are difficulties with noise in the common space.

##### 10.6.4 External Space Minimum

There is generally limited outdoor or green space. If the owner needs to park work cars at home or if he needs a lot of outdoor areas for work or entertainment, a condo may not be suitable for him.

##### 10.6.5 High HOA Fee

HOA fees often increase over time to cover maintenance costs and any additional features. HOA fees should be factored into a homebuyer's budget, especially in increasingly expensive housing markets. A condo association has the power to charge all homeowners special fees to cover unexpected expenses or provide additional amenities.

##### 10.6.6 Restrictive Rental Policies

Many condominiums do not allow landlords to rent out their units after they have purchased them, so if an owner is looking for an investment property, he should check rental restrictions carefully.

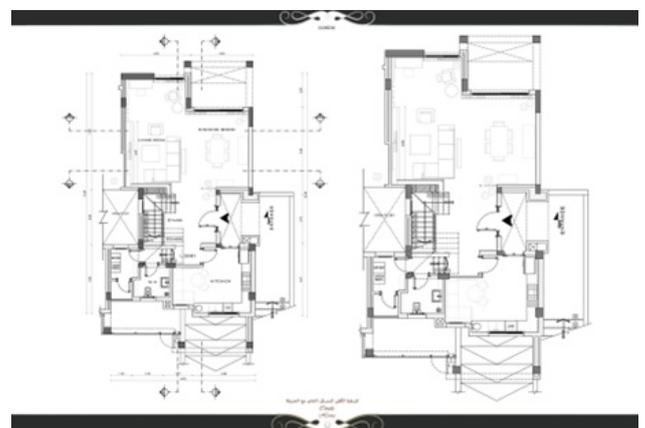


Figure 19((Author, 2018)): The furniture floor plan of a condo.



Figure 20(Author, 2018): Section (A-A) of a condo design project.

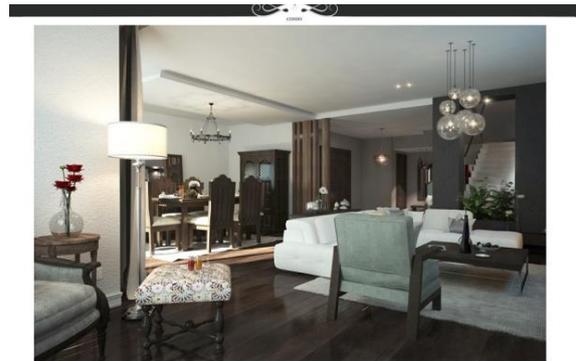


Figure 24(Author, 2018): Interior design of a condo project.

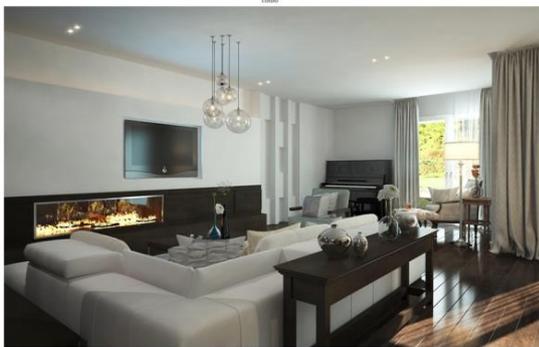


Figure 21(Author, 2018): Perspective of a condo design project.

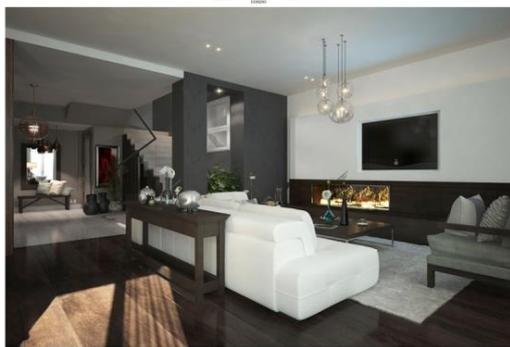


Figure 22(Author, 2018): Lining room design of a condo project.



Figure 23(Author, 2018): Stairs design of two-story condo.

### 10.7 The Difference Between an Apartment and a Condo

Both a condo and an apartment offer their advantages and disadvantages. Physically, it is impossible to combine both (Table 5).

No.	Team	Description
1	An apartment	An apartment, or a flat, is a small part of a multi-storey apartment building for sale in an apartment building. Various types of apartments are available, like studios, which are large one-room apartments consisting of shared drawings, living rooms, and bedrooms, and are very popular among bachelors. There are two- and three-bedroom apartments available in addition to the more popular ground-floor four- or five-bathroom garden apartments. (Between)
2	A condo	A condominium is a collection of individually owned apartments that can be rented long-term. A condominium is owned by developers. In addition, it can be rented to different tenants. ownership interest in living in a condo (not available) in an apartment condition. Owning a house means common areas such as walkways, rigs, and tennis courts are often welcomed by apartment owners who are part of their condominium

		community, which includes the common areas. Condos prove to be the best option if one is looking to stay permanently in one place, or at least not move for a long time. (Between)
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Table 5: The difference between an apartment and a condo.

## 11. Units

A unit is defined as a measure of housing equivalent to the dwelling of a household. It refers to an apartment that is part of a group of apartments located in a building. It may be any single household unit within a group of similar dwellings. Although units are referred to as apartments, there is a distinction between them. Units can be duplexes or single-family dwellings with a patio, a courtyard, or a garden (Figure 25).

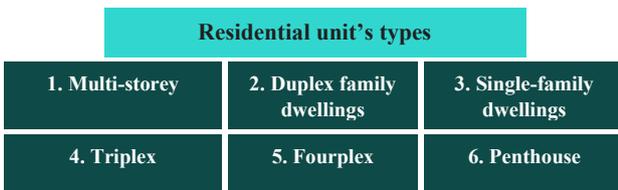


Figure 25(Author, 2018): A diagram of the units types.

### 11.1 Multi-Storey

Multi-storey apartments are large houses, and they are available within the compound. They have elevator facilities, better security, etc. (Lancor, 2019) **They are penthouses, lofts, and duplex types of real estate that define the extravagance of high-rise towers and are more like semi-detached or two-storey houses in the sky.**

#### Multi-storey apartments can be subcategorized into categories:

1. **A penthouse** refers to the highest-rise apartment unit, usually occupying an entire floor or at least half of the floor. Although penthouses in earlier developments were one-storey, trends have changed. In addition, most penthouses are now two-storey homes. There is usually only one penthouse within one of the tallest buildings, making it the most expensive unit.
2. **Lofts and duplexes** are similar types with different names. These are usually two-storey units within a high-rise apartment building. All these properties can hold commercial or residential ownership, depending on the land ownership. (Propertyguru, 2021)

#### 11.1.1 Interior Analysis of Multi-Storey

Multi-Storey houses are best for those who want to get into real estate investing and are comfortable with the added responsibility and time commitment that comes with being a landlord. (Businessyield, 2021)

#### 11.1.2 Criteria for Multi-Storey Selection

Multi-Storey apartments are among the most luxurious and elegant types of residential units. They are two or multiple floors connected by an internal staircase. Each floor consists of several rooms, bathrooms, and a kitchen, meaning that it is a separate apartment. They come with a private garden, and they are a great opportunity in terms of privacy and independence. Multi-Storey apartments in the building may include a private entrance or elevator, or higher and vaulted ceilings. In buildings that consist mainly of single-storey apartments, multi-storey apartments can be distinguished by two or more floors. (Wikipedia)

#### 11.1.3 Furniture Requirements of Multi-Storey

Multi-storey apartment furniture requires luxury, different styles, and materials. A multi-storey apartment can have features such as a balcony, fireplace, more space, oversized windows, multi-owner suites, office space, TV room, Jacuzzi, and much more. They may be equipped with luxury kitchens featuring stainless steel appliances, granite countertops, a breakfast bar, and more. Most of these multi-story buildings are accompanied by their elevators, completely isolated from the building's elevators, and all these features make these luxury apartments very expensive. Each room of the multi-storey apartment can be finished with distinctive materials. For instance, the entrance hall features marble floors and precious paper door panels framed in mahogany. For the dining room: Venetian plaster. For the master bedroom: butchery. For the kitchen: Jaguar-green lacquers, and woven glass. (Wikipedia)

#### 11.1.4 The Challenges and Disadvantages of a Certain Community of Multi-Storey

Multi-storey apartments are the best for large families who cannot afford to buy independent villas to live in. The design of large apartments in this way is characterized by great privacy as its location makes it completely isolated from what is around it. In addition, it is very similar to a villa in a quiet and comfortable living style that features complete privacy. The multi-storey apartment has a large area in a spacious space with a distant view. Multi-storey apartments are far from the crowds of cities and the inconvenience of neighbors. (Shattb)

## 11.2 Duplex Family Dwelling

The Soviet compound was the first modern building to use the typology of duplexes to suggest a different lifestyle from the traditional bourgeois family lifestyle over the first decades after the Soviet Revolution. The apartment compound brought to life the studies of Soviet modernist architects in the 1920s concerning home communities, an idea that was widely explored and discussed by architects of the time. Due to changes in people's daily habits, buildings should be designed to accelerate changes in the mentality of the inhabitants. There are social areas (living room, kitchen, pantry, and staircase) within the duplex apartments on the lower floors, while the upper floors contain two bedrooms, a bathroom, and laundry. There is no space in the apartments for washing and drying clothes. (Fontenele, 2019)

### 11.2.1 Duplex Concept

Duplexes are like apartments, although they differ from apartments in that they consist of two successive floors. They are connected by an internal staircase. (Elhor) In addition, the duplexes are two complete residential apartments located on top of each other and connected by an internal staircase.

### 11.2.2 Interior Analysis of the Duplex

A duplex apartment is considered a sophisticated and distinctive choice for housing or investment, as it consists of two complete units of rooms; "reception, bedrooms, bathrooms, kitchen, and living", linked by an internal ladder, where each floor is a separate apartment from the other. The basement is often used for reception, the kitchen, and the upper floors of the bedrooms, living rooms, bathrooms, etc. Duplex apartments are considered one of the preferred types of real estate for those who want complete privacy, rich in luxury while maintaining a large area.

### 11.2.3 Duplex Features and Styles

The creation of a design for a two-level apartment can unleash the designer's imagination and decorate the duplex in different styles, as well as the duplex, seems comfortable. It is better to erase the boundaries and equip the duplex in just one style. This will result in a more organized, cool, and spacious environment. **The most important features that distinguish duplex apartments from other types of residential units are:** (Budivel, 2020)

- Owning a duplex apartment is like owning a small villa.
- Great privacy.

- Complete calm when sleeping.
- The attractive price for duplexes is compared to other types of high-cost housing units.

### 11.2.4 Criteria for Duplex Selection

Modern developers create housing with two levels for people of different classes, especially suitable for large families. These luxury apartments can be as small as 80 or 100 square meters or as large as a small apartment for young people. Duplex apartments have their characteristics in planning and design, which differ from single-storey apartments. (Decorate)

### 11.2.5 Furniture Requirements of Duplex

Minimalism is the most popular trend in the design of two-story housing. This option uses a minimum of furniture and decor, which allows the designer to create a stylish and elegant interior in which order and comfort reign. High-tech, with clear and regular shapes, without drawings or abstractions on the walls. In the industrial style, concrete surfaces, various beams, and wooden beams are used as thematic decoration. The avant-garde and art deco have an unusual setting in which many details differ from the classic forms and break traditional stereotypes. The Scandinavian style, or constructivism, successfully combines aesthetics and functionality in modern interiors. The best solution would be to stick to one color variant in the main layout. Therefore, the duplex will be more spacious and orderly. If the owner prefers luxury space and privacy, duplex apartments are the best choice. The designer can divide the duplex according to the owner's priorities, and it has an internal staircase, making it a small space. (Budivel, 2020)

### 11.2.6 The Challenges and Disadvantages of a Certain Community of the Duplex

Duplex apartments are characterized by their ability to accommodate large families who cannot afford the cost of villas. For instance, due to their acceptable price compared to villas, some of them have a garden, which makes them ideal for luxury housing with a reasonable budget. (Aqarfeed) Living in a two-story apartment is as comfortable as living in a private house. A large amount of available space, which is at least 100 square meters, allows the owner to realize the most interesting and daring design ideas. Due to the double space, it is possible to clearly distinguish between the guest and the private space. Two-storey apartments are always distinguished by luxury and comfort. (Budivel, 2020)

**There are some disadvantages to duplex apartments, such as:**

- The necessity of having a ladder is not suitable for the elderly.
- Lack of privacy on the basement floor.
- Duplex apartments have a large area; therefore, large amounts of money will be spent on utility bills.
- The operation and arrangement of such housing require significant financial costs. (Budivel, 2020)



Figure 26((Author, 2018)): A diagram of a unit duplex family home.



Figure 27((Author, 2018)): Furniture floor plans of the duplex family dwelling.



Figure 28((Author, 2018)): Section (A-A) of the duplex family dwelling.



Figure 29 ((Author, 2018)): Section (B-B) of the duplex family dwelling.



Figure 30((Author, 2018)): Stair design of the duplex family dwelling.



Figure 31((Author, 2018)): Entrance design of the duplex family dwelling.



Figure 32((Author, 2018)): Reception design of a duplex family dwelling.

### 11.3 Single-Family Dwelling

Single-family houses are usually owned by families. While most households in multifamily structures are rented, there are ownership patterns in this category that are relatively unrecognized.

#### 11.3.1 Single-Family Dwelling History

Most multifamily housing in the United States is very small. American families have changed dramatically over the past 60 years, although the single-family house that includes them has not evolved much. Demographics suggest that while household numbers have gotten smaller over the decades, house sizes have become much larger. There was little variety in housing types, with architects and consumers favoring the single-family detached house as a symbol of American success. (Nichols and Adams, 2013)

#### 11.3.2 Single-Family Dwelling Concept

A stand-alone house (also called a single-detached dwelling, detached residence, or detached house) is a free-standing residential building. It is sometimes referred to as a single-family house, as opposed to a multi-family residential dwelling.

#### 11.3.3 Types of Single-Family Dwellings

In general, two elements are included in the definition of single-family dwelling types (Figure 33):

1. Single-Family (home, house, or residence) refers to a structure that is normally occupied by only one family or household and has only one dwelling unit or suite. Allowances are granted in some jurisdictions for basement suites or mother-in-law suites without changing the designation from "single-family." Short-term lodging (hotels, motels, inns), and large-scale rental lodging (rooming or boarding homes, apartments, and condominiums) are not included.
2. A Detached House (home, or habitation) refers to a structure that is not connected to other structures by a common wall. This includes duplexes, triplexes, fourplexes, or linked dwellings, as well as any row houses or tower blocks that can house hundreds of families in a single structure.

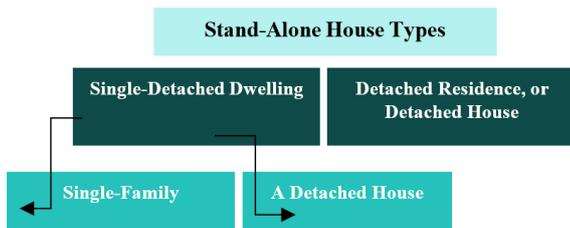


Figure 33((Author, 2018)): A diagram of stand-alone house types.

#### 11.3.4 Interior Analysis of Single-Family Dwelling

A single-family dwelling is used to provide transitional or supportive housing. It has a private residence that consists of living spaces with at least one bedroom, a kitchen, a bathroom, or other facilities. The residents live in a single housekeeping unit. (Lawinsider) Every single-family house has its own private and direct entrance and exit to a street or roadway. This house can only have one set of utilities, and they cannot be shared in any way with another residence. This applies to any vital service, such as heating, electricity, or water. (Lawinsider) Every single-family house has its own private and direct entrance and exit to a street or roadway. This house can only have one set of utilities, and they cannot be shared in any way with another residence. This applies to any vital service, such as heating, electricity, or water. (Heid-enry, 2022) Single-family houses often have more garage space, attic space, and basement space. They may also provide outdoor storage for the children's or pets' outdoor toys, gardening tools, and other recreational goods. Designers can design a variety of single and two-story multi-family houses with three or more bedrooms, raised ceilings, kitchen appliances, open floor plans, front porches, covered patios, and manicured front yards (Figures 34,35,36,37,38,39,40 ,41,42,43,44). (Chesmar)

#### 11.3.5 Characteristics of Single-Family Dwellings

Prospective buyers, particularly first-time buyers, find single-family house buying an exciting experience. A single-family house is a self-contained structure that houses only one family. This contrasts with condos, which frequently include many units and living spaces in a single structure. (Homes, 2019)

#### 11.3.6 The Advantages of a Single-Family House

Single-family houses are the most popular type of residential property, though it varies by region. Single-family houses have a few distinguishing features that set them apart from other types of residential structures. Although buying a house is a personal decision, many people choose single-family houses because of the following advantages: (Homes, 2019)

##### 1. Privacy

In single-family houses, unlike condos and apartments, privacy is important. They provide more privacy than other types of residential buildings because there are no shared walls or floors. (Homes, 2019)

##### 2. Property

When an owner buys a single-family home, he gets the property that the house is built on. The owner can

always add another bedroom or convert his garage into a playroom if he lives in a single-family house. However, if the owner buys a condo, expanding his house will be difficult or impossible. (Homes, 2019)

### 3. Single kitchen

There is only one full-size kitchen with a stove and oven in single-family houses. A kitchenette is a frequent feature in guest or in-law rooms. Kitchenettes, on the other hand, are not the same as kitchens because they lack a stove and an oven. (Homes, 2019)

### 4. Points of Entry

Hallways or entranceways that open directly to the street are shared by tenants in apartment and condominium buildings. A single-family house, on the other hand, has a private entrance to the street. (Homes, 2019)

### 5. Storage Space

Single-family houses are ideal for those who require additional storage space. They usually feature basements, attics, and/or garages where the owner may keep items like golf clubs, family heirlooms, tools, and seasonal clothing, whereas in a multifamily property, space is shared. Condominiums have limited storage space due to their smaller size. The owner has more control over his external area when he owns a single-family house. (Homes, 2019)

### 11.3.7 Criteria for Single-Family Dwelling Selection

Single-family houses continue to evolve and improve. (Falcone, 2019) A single-family dwelling is not part of a multiple-dwelling. (Lawinsider) It is best for families who prefer a huge patio and plenty of space to spread out. (Businessyield, 2021) It was created for a single-family, person, or household, and the owner holds an undivided stake in the unit. Multifamily residence property can accommodate two residential dwellings, typically in the form of a duplex. Multifamily units, such as apartments or condominiums. (Heidenry, 2022)

### 11.3.8 Furniture Requirements of Single-Family Dwelling

In contrast to the plainer design of a condo or apartment complex, typical single-family houses on the market come in a variety of architectural styles, whether ranch, Colonial, midcentury modern, or Cape Cod. (Heidenry, 2022) Creating a welcoming and friendly atmosphere is a very important factor in designing a single-family dwelling through many concepts, such as using a fireplace to separate the family sofa from the dining room in the main living area, which is mostly open. The space may be deco-

rated with white walls and black furnishings to give a sterile feel for anyone to walk in and fill it with their colors. (Home-designing)

### 11.3.9 The Challenges and Disadvantages of a Certain Community of Single-Family Dwelling

The type of house that the owner purchases is determined by his budget and requirements. A buyer wanting privacy will appreciate a house such as a single-family dwelling. (Heidenry, 2022)

Although buying a single-family house has many Challenges and Disadvantages.

- While having a single-family home provides complete independence, there are a few drawbacks. Condos, townhouses, and multifamily complexes may include shared gyms or pools that are open to all residents; single-family houses rarely have such amenities. (Heidenry, 2022)
- The purchase price of a single-family house is higher because the owner is buying a full property. This means a higher down payment and closing costs, as well as ongoing charges such as insurance and property taxes for the entire area. (Heidenry, 2022)



Figure 34((Author, 2018)): A single-family home's ground floor plan.

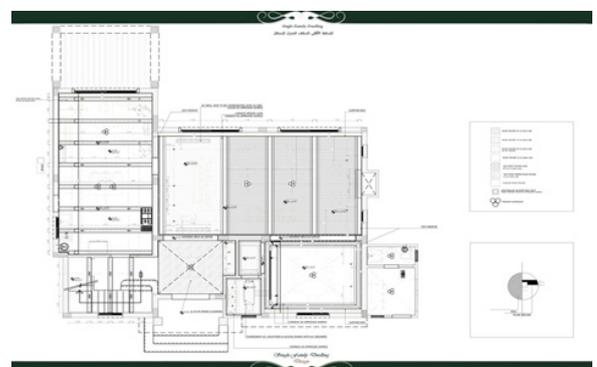


Figure 35((Author, 2018)): Ceiling plan for a single-family dwelling.



Figure 36((Author, 2018)): Section (A-A) of Single-family dwelling.



Figure 37((Author, 2018)): Section (B-B) of Single-family dwelling.



Figure 38((Author, 2018)): Section (C-C) of Single-family dwelling.



Figure 39((Author, 2018)): Perspective of a single-family dwelling.



Figure 40((Author, 2018)): Interior design of a single-family dwelling.



Figure 41 ((Author, 2018)): Reception of Single-family dwelling.



Figure 42 ((Author, 2018)): Living design of Single-family dwelling.



Figure 43((Author, 2018)): Open kitchen design of Single-family dwelling.



Figure 44((Author, 2018)): Perspective of a single-family dwelling.



Figure 48((Author, 2018)): Living space is open in the kitchen space.



Figure 45((Author, 2018)): Living room design of Single-family dwelling.



Figure 49((Author, 2018)): Open kitchen design furniture of Single-family dwelling.



Figure 46((Author, 2018)): Ceiling wood design beams in Single-family dwelling.



Figure 50((Author, 2018)): Perspective of open kitchen design in Single-family dwelling.



Figure 47((Author, 2018)): Counter design in the open kitchen of a Single-family dwelling.



Figure 51((Author, 2018)): Open kitchen with the wood design of a Single-family dwelling.

## 11.4 Triplex

The triplex is three apartments on top of each other. They are also linked by an internal staircase, such as a duplex with another floor difference. (Elhor) Triplex apartments come in many forms, with the most popular being those in which each unit's floor space is nearly similar. (Bitton, 2022)

### 11.4.1 Triplex Concept

A triplex apartment is a structure that incorporates three independent residential units into one structure, with one or two common walls shared by the individual apartments. Some triplexes are constructed explicitly as triplexes, while others may have begun as large single-family houses that were later divided into three separate dwellings. (Bitton, 2022)

### 11.4.2 The Fundamentals of a Triplex

Triplexes are especially popular with families due to their size and three-story layout, which allows for the separation of private and public spaces within the house. It must be linked from within the property, with access to one floor from the other by either a public stairwell or an elevator. Several triplex apartments in condominium or co-op buildings were purchased and modified to form connected floors by the owners. Furthermore, triplex apartment stairways come in a range of shapes and widths, but many of them are designed to take up as little space as possible unless the apartment is exceptionally vast. Triplexes and larger apartment types, such as one-bedroom and studio apartments, are less frequent than smaller apartment types. If the owner wants to rent or buy a triplex in a city, this is especially vital. (Bitton, 2022)

### 11.4.3 Interior Analysis of Triplex

- A triplex is a building that combines three separate residential units into one structure, with the various apartments sharing one or two common walls. In a triplex, each unit has its kitchen, bathroom, living room, and exterior doors. (Retipster)
- In-unit laundry, patios, driveways, porches, and, in certain cases, garages are all common amenities in triplex apartments. (Bitton, 2022)
- One of the most alluring qualities of triplex apartments is the privacy they offer their owners. They do not have as many neighbors in a triplex unit as owners would in an apartment complex.
- Because a triplex apartment consists of only three units in a single building, the outside space will be shared by only three households. This is a

huge improvement over sharing a small yard in an apartment compound with a bunch of other people. (Bitton, 2022)

- Triplex apartments are a good place to start investing in multifamily properties if the owner wants to convert from a single-family property to a multifamily property. An owner will have an easier time managing tenants and screening in a triplex unit than investing in an apartment building. (Bitton, 2022)

### 11.4.4 Criteria for Triplex Selection

They are larger than standard rental units, which is why they are ideal for large families, as the owner can rent one or more floors according to his needs. The property owner can use an entire floor to create a private office or even an integrated health club inside their home. The large area of the triplex, especially if it is found within a residential compound, makes it the ideal haven for anyone who desires quiet and luxurious housing. (Elhor) A triplex owner can sometimes live in one unit while family members dwell in the others. A triplex is usually bought as an investment to generate income through rent. (Retipster)

### 11.4.5 The Advantages of Triplex

Living in a triplex apartment provides the owner with many advantages that he would not obtain in a single-family house, especially for owners who desire to live in one of the three units.

- The owner is close to the repairs required in the triplex. (Retipster)
- The owner can deduct certain depreciation and repairs for the rental properties, hence saving money on taxes.
- Repairs and upkeep can be more efficient because all three apartments share the same yard, roof, and other common characteristics.
- The owner can walk away with three profitable properties. (Bitton, 2022)

### 11.4.6 Furniture Requirements of Triplex

A triplex is a three-unit multifamily structure with one owner, such as a duplex or fourplex. A triplex features an individual bathroom, kitchen, living room, and exterior doors. Some triplexes are built specifically as triplexes, while others may have started as big single-family residences that were later partitioned into three independent dwellings. (Retipster) A structure with two, three, or four units is known as a "multifamily residence." (Bitton, 2022) Therefore, the fur-

niture requirements are very different than those of other types of residential houses because of their huge sizes. Designers can create many concepts in triplex units due to their variety of styles.

#### **11.4.7 The Challenges and Disadvantages of a Certain Community of Triplex**

The triplex is one of the various wonderful residential units and is considered one of the cheapest prices for luxury real estate. Its prices are very reasonable compared to the standalone villas with their gardens. Triplex apartments are among the most spacious available on the market. Renting out all or even two of the flats might generate a large rental income and help the owner pay off the mortgage faster. There are certain challenges in purchasing triplex houses, including the high cost of renting or investing in triplex unit types, as well as their scarcity. Triplex apartments are often more expensive to purchase than duplex apartments due to the additional unit. (Bitton, 2022) Triplexes are less common than duplexes and fourplexes; hence, people may have a harder time locating one. (Retipster)

#### **11.5 Fourplex**

A multifamily house is defined as a structure having two, three, or four units. (Retipster) The fourplexes are four apartments on top of each other and are connected by an internal staircase, such as a triplex with another floor difference, making them ideal for large families. While a fourplex consists of four different residential units combined into a single structure, the units normally share one or two common walls. A four-story house with one apartment on each floor provides living quarters for four families, each with its entrance. A fourplex has a room, a kitchen, and a bathroom, and it abounds in residential compounds. (Aqarfeed) Investors who are only experienced with single-family homes may be interested in investing in a duplex, triplex, or fourplex. (Retipster)

#### **11.6 Penthouse**

Penthouses are distinguished by privacy because they are completely isolated from the world around them. They are very similar to the villa, and most of these units have their elevators separate from the building's elevators. All of these features make penthouses very distinctive and expensive. (Aqarfeed)

##### **11.6.1 Penthouse Concept**

A penthouse is an apartment located on the highest

floors of a building and is attached to the building's roof and sometimes to the lower floors and basement. It usually contains a swimming pool, a terrace, a room, and a bathroom. (Elhor) High-rise buildings will usually have penthouse structures that contain mechanical technologies such as those in the elevator's automated room. (Wikipedia)

##### **11.6.2 Interior Analysis of Penthouse**

A penthouse is a type of very luxurious apartment or residential unit, and it is usually found on the upper floors of high buildings. It is sometimes found on the lower floors, accompanied by a basement. The buildings can be designed with such recesses on more than one upper floor to allow apartments on several floors to project these balconies. Not all penthouses have such balconies, but they are considered a desirable feature. Such a space can be divided into several apartments, or perhaps one apartment occupies the entire floor. The penthouse apartment can provide the owners with private access to the rooftop space in addition to the balcony space provided by the adjacent nooks. (Wikipedia)

##### **11.6.3 Penthouse Characteristics**

Penthouses are characterized by luxurious features such as advanced appliances, the installation of the finest materials, and the finest flooring systems. In addition, it is at the top of the luxury towers in the middle of large new cities, such as the compound residential complexes. Penthouse apartments are famous for their great prosperity. In addition, the price of penthouse apartments is close to the price of villas. (Wikipedia)

##### **11.6.4 Criteria for Penthouse Selection**

This type of penthouse apartment has invaded the real estate world due to the urgent desire of individuals and families to live in a more luxurious residence than the usual apartments. Penthouses allow complete privacy, making them unique with a very quiet and comfortable living style. The basic idea of the penthouse is that its exterior walls on all four sides are glass to allow its residents to enjoy stunning panoramic views of the entire city. Its most important characteristic is that the entire floor is glass, so it does not share with the owner any neighbors, as it provides complete privacy and luxury. (Bayut) Therefore, a penthouse is ideal for rich and large families.

##### **11.6.5 Furniture Requirements of Penthouse**

The interior design of penthouses is very special be-

cause it uses different luxuries in materials, styles, and technologies in furniture.

- The windows are designed to be the largest possible height and width.
- Penthouses are located on a rooftop terrace, where the owner can enjoy a view of the downtown skyline. (Shattb)
- The outdoor spaces in penthouses are small gardens with a group of flowers and swings, which makes the difference between the types of residential units and the penthouse apartment.
- Designers can use floor lights in the outdoor spaces, several comfortable sofas, and some hanging lights to give the owner a calm atmosphere, as well as to read in comfort and recreate.
- The Penthouse apartment has a highly advanced technology system, such as an anemometer that is installed on the roof to measure wind speed so that awnings and sheds can be pulled out from the facade of the building. In addition, moisture sensors were used to detect the leak, and an email message was automatically sent to building managers. The temperature sensors, which are mounted on the pipes, send an email when the temperature deviates from what the owner has specified. (Wikipedia)

#### 11.6.6 The Challenges and Disadvantages of a Certain Community of Penthouse

Residents of penthouse apartments often enjoy great views of the city skyline. The penthouse apartment is usually accessed by a separate elevator. Residents can also access several building services, such as picking up and delivering anything from dry cleaning to dinner reservations at restaurants and events organized by the building's staff, and other attendant services. (Wikipedia) There are some challenges for penthouse types of housing units, such as high temperatures in the summer. In addition, penthouse apartments are more vulnerable to water leaks than other types of housing units. (Shattb)

## 12. Discussion

"Home means shelter and a dwelling place. Housing is shaped by the lifestyles and needs of people. Because of the mix of cultures, there are different types of houses located all over the world, and their shapes have been developed in response to needs and lifestyles. The search for new ways of living is certainly an inspiration for architects and designers. Designers have created a new approach to interior design to help

improve cities as well as the quality of life for their residents. The study explored the characteristics of residential spaces and provided practical projects for interior house types. The research concluded that residential spaces are currently in different categories, such as studios, apartments, units, duplexes, penthouses, etc. The studio type of house depends on multiple factors, including lifestyle, location, and budget, that play a major role in decision-making. The research analyzed five different types of contemporary residential spaces with their different characteristics. Firstly, the research started with the emergence of studio apartments; they have enough open space to cover a variety of tastes and needs. Then the research discussed their concepts, interior analysis, criteria of selection, furniture requirements, and challenges and disadvantages for a certain community. Secondly, the research demonstrated the loft apartments that embody the characteristics of the open building concept. It was adaptable, versatile, and flexible. It had tremendous potential to respond to the intense residential production needs of urban environments. Furthermore, lofts have created a new approach to interior design. Therefore, lofts have become a kind of luxury residence. Consequently, the research analyzed apartments and condominiums. There are many types of apartments, such as studio apartments, garden apartments, shared apartments, and loft apartments. Additionally, the research focused on the emergence of housing in units, as well as their characteristics and types. Finally, the research studied residential house types ranging from studios, lofts, apartments, condos, multi-storey dwellings, duplex family dwellings, single-family dwellings, triplex, fourplex, and penthouses, which are the most distinctive and high-end housing choices. Subsequently, the research concluded that each void has a specific group of society interested in inhabiting this void according to their level, needs, and requirements. As well as the design criteria specified for the interior design of each housing space according to its type and characteristics.

## 13. Conclusion

The research explored the different housing spaces and their types, as well as development, because of the changes that we are experiencing and the changing requirements of the client. It was studied for each segment of society when they chose their houses through a community survey to define the needs, challenges, and disadvantages of each type of housing for each specific society. In conclusion, the research

family houses, single-family houses occupied by one family, multi-family houses with more than one family in a building with more than one room apartment, a duplex, triplex, or fourplex, and large, luxurious, rich families. Finally, the research mainly focused on the literature related to studios, lofts, apartments, condominiums, duplexes, triplexes, fourplexes, and penthouse spaces. **Besides, the research concluded that:**

1. **Studio** is suitable for young people, small families, adults or couples without children, individuals, artists, designers, craftsmen, bachelors, hostels, retirees, people from low- and middle-income classes, two-person families, unmarried youth, the labor category, workers, owners, and investors.

2. **Loft** is suitable for young people, workers, artists and designers, bachelors, couples without children, small families, artists looking for low-cost multifunctional spaces, artists such as painters, sculptors, dancers, actors, photographers, writers, designers, and craftsmen, and people from the upper-middle and upper classes.

3. **Apartment** is suitable for everyone, especially families, due to the diversity of their spaces and shapes. People from the lower and middle classes, owners and investors, and renters.

4. **Condo** is suitable for everyone, especially people who want a convenient lifestyle, owners and developers, different tenants, and ownership interests in the living condo.

#### **5. Unit**

5.1 **Multi-storey house** is suitable for large families and people from middle and upper incomes.

5.2 **Duplex Family Dwelling** is suitable for large families who cannot afford the villa's price.

5.3 **Single-Family Dwellings** is suitable for large families who prefer a huge patio and plenty of space, multifamily, single-family, or household, the owner, who holds an undivided stake in the unit, investors, and developers.

5.4 **A triplex** is suitable for large families because of its spacious interiors.

5.5 **Fourplex** is suitable for large families.

5.6 **The Penthouse** is suitable for large families and high-class families who want privacy because it is similar to a villa.

**Furthermore, factors of social and cultural change that house interior designs have undergone, as well as their evolution.**

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