

# ANALYSIS AND DESIGN(UML)

## USER ANALYSIS:

**UI design analysis** analyses users, tasks, content, and user work

Environment . This includes User Analysis, Task Analysis and Domain Analysis.

### **(a) User analysis**

It is the process of studying the physical type, role and capability of the person using the proposed system. Whether the user is physically fit or physically challenged. For example, a physically fit user can type in the search box for performing the search functionality, however, a person physically challenged by hand may use the voice recognition software. The roles of the user in terms of the modules and features they will access should be known. User objectives and goals to access the system should be known.

## TASK ANALYSIS:

### **b) Task Analysis:**

Task analysis is a method used in user experience design to identify the steps required for users to complete specific tasks. In the context of an interior decor app, task analysis would involve breaking down the tasks users need to perform to achieve their goals while using the app.

Here are the steps to perform a task analysis for an interior decor app:

1. **Define the user's goals:** The first step is to identify the user's goals while using the interior decor app. For instance, users may want to design a room or select furniture for their home.
2. **Identify the key tasks:** Once we have defined the user's goals, we need to identify the key tasks they need to perform to achieve those goals. These tasks may include selecting a room to design, selecting a style, choosing furniture, selecting colours, and arranging the furniture.
3. **Break down the tasks into subtasks:** For each key task, we need to break it down into smaller subtasks. For example, the task of selecting furniture may involve browsing through a catalog, filtering by style or price, selecting an item, and adding it to the virtual room.
4. **Identify the sequence of tasks:** Next, we need to identify the order in which the tasks need to be performed. For instance, users may need to select a room before they can choose furniture.
5. **Identify potential obstacles:** As we analyse the tasks, we may identify potential obstacles that users may encounter while completing them. For instance, users may have trouble finding the right piece of furniture or may struggle to arrange the furniture in the virtual room.
6. **Evaluate the user interface:** Finally, we need to evaluate the user interface to ensure that it supports the user's goals and makes it easy for them to complete the

tasks. We may need to make changes to the interface or the user flow to improve usability and user satisfaction.

By performing a task analysis, we can identify potential issues and optimize the user experience for the interior decor app.

## DOMAIN ANALYSIS:

### c) Domain analysis:

- ❖ Domain analysis is a method used in user experience design to understand the context and environment in which the app will be used. In the context of an interior decor app, domain analysis would involve identifying the key concepts, trends, and user needs that are relevant to interior design. Here are the steps to perform a domain analysis for an interior decor app:
- ❖ Identify the key concepts: The first step is to identify the key concepts that are relevant to interior design, such as colour theory, lighting, furniture styles, and room layout. These concepts will guide the design of the app and ensure that it meets the needs of users.
- ❖ Research current trends: Next, you need to research current trends in interior design to ensure that the app reflects the latest styles and preferences of users. This may involve analysing social media trends, attending trade shows, or conducting user surveys.
- ❖ Identify user needs: It is essential to identify the user's needs and pain points while designing an interior decor app. This may include understanding the user's budget, design preferences, lifestyle, and available space.
- ❖ Analyse the competition: Analyse the competition and see what features they have incorporated in their app. This will give you an idea of what features work and what doesn't.
- ❖ Consider cultural factors: Cultural factors play a vital role in interior design. Different cultures have different preferences when it comes to colour, furniture styles, and decor. Therefore, you must take cultural factors into account while designing the app.
- ❖ Consider the platform: When designing an interior decor app, it's essential to consider the platform for which the app is being designed. For instance, if the app is being designed for mobile devices, the user interface must be optimised for touch interaction and smaller screens.
- ❖ Define the user personas: Define user personas to understand the users' requirements and preferences. User personas will help you in designing an app that caters to their needs.

- ❖ Define the features: Based on the domain analysis and user research, define the features that will be included in the app. These features should meet the user's needs and preferences while also reflecting the latest trends in interior design.
- ❖ Create a wireframe or prototype: Once the features are defined, create a wireframe or prototype to visualise the app's layout and functionality. This will help you identify any usability issues and make necessary changes.
- ❖ Test and iterate: Finally, test the app with actual users to identify any issues and iterate on the design to improve usability and user satisfaction.
- ❖ By performing a domain analysis, you can identify the key factors that influence interior design and ensure that the app meets the needs of users in this domain.

SELF LEARNING TOPICS:

## Identifying the types of Tasks:

- In an interior decor app, the types of tasks that users may perform can include:
- Browsing and selecting decor items such as furniture, wall art, lighting, and accessories.
- Creating and saving room designs.
- Experimenting with different colour schemes and patterns
- Finding and hiring interior designers or decorators.
- Shopping and purchasing decor items.
- Sharing room designs with friends and family.

## Design objects model

- Design objects model can help to identify the objects and data that will be used in the app. In an interior decor app, the design objects model can include:
  - Room dimensions and layout
  - Furniture and decor items
  - Colour schemes and patterns
  - Lighting fixtures and controls
  - Textures and materials
  - 3D models and visualisations
  - User profiles and preferences
  - Shopping cart and payment information
  - Social sharing and collaboration features

## Contextual analysis:

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- Contextual analysis helps to identify the environment in which the app will be used and the user's needs and constraints within that environment. In an interior decor app, the contextual analysis can include:
- User demographics such as age, gender, and income

- User's living situation such as living alone or with family, renting or owning
- User's location and cultural background
- Budget constraints
- Time constraints and availability for decor projects
- Existing decor and furniture in the user's space
- User's level of expertise in interior design
- User's technology proficiency and familiarity with the app's platform

By considering the types of tasks, design objects model, and contextual analysis, designers can create an interior decor app that meets the needs of users and provides a satisfying user experience.

## DESIGN:

### Design Scenario:

### Description: Interior Home Decor

The purpose of a virtual interior decor app is to assist users in designing and furnishing their houses.

Those looking to enhance the appearance and atmosphere of their living areas include homeowners and tenants.

#### Features:

Establishment and Administration of user profiles,  
ability to design a floor layout within the app or upload one  
a collection of accessories, furnishings, and finishing touches that can be added to the virtual room

Adjustable wall, floor, and ceiling colour and texture options

Using the app to make direct purchases from real-world suppliers

option to store and distribute designs to loved ones

In-app consultation with a qualified interior designer

#### Scenario:

John is a recent apartment mover who is a young professional. He is eager to decorate his new home, but he is unsure of where to begin. He installs Interior Decor App, sets up a profile, and starts looking around.

John begins by snapping a picture of his living area and uploading it to the app. In order to construct a virtual depiction of his area, he chooses the room's proportions and shape. He begins experimenting with various pieces of furniture and home decor from the app's library and arranges them in the digital space. Until he finds the ideal combination, he experiments with various colour schemes and finishing options. Now that John has chosen his products, he is prepared to buy them. When he clicks the "purchase now" button, he is taken to the website of the vendor where he can finish the transaction.

John begins setting up his furnishings and decorative goods after receiving them a few days later. He returns to the Interior Decor App and uses the in-app chat option to get in touch with a qualified interior designer after realising something is not quite right. The interior designer requests a picture of the space from John and makes some recommendations to enhance the arrangement and colour scheme. The interior designer requests a picture of the space from John and makes some recommendations to enhance the arrangement and colour scheme.

John makes a few last-minute tweaks with the designer's assistance and is delighted with the outcome. He shares the design on social media with his buddies after saving it to his profile.

In summary, Interior Decor App provides a complete, user-friendly, and customised home decor solution. The software enables homeowners and renters to create lovely living spaces that showcase their individual styles by giving them a virtual platform to experiment with various design possibilities.

## Self Learning Topics:

# Principles of Good Design:

**User-centred design:** The design should be focused on the needs and preferences of the end-users, with the goal of creating an interface that is intuitive and easy to use for anyone, from novice decorators to professional designers.

**Consistency:** Consistent use of design elements such as typography, colour schemes, and layout across the interface creates a sense of unity and coherence, making it easier for users to navigate and use the interface.

**Simplicity:** A simple design with minimal distractions and clutter allows users to focus on the content and actions that are most important. The app should be easy to navigate and use without requiring extensive instructions.

**Visualisation:** The app should allow users to easily visualise how different design elements, such as furniture and decor, will look in their space. 3D models or augmented reality features can enhance this visualisation process.

**Feedback:** The interface should provide clear feedback to users when they take actions, helping them to understand the impact of their choices and guiding them through the interface.

**Flexibility:** The design should be flexible enough to accommodate a range of user needs and preferences, such as adjustable filters for different styles, colours, and price ranges.

**Accessibility:** The design should be accessible to a wide range of users, including those with disabilities or limitations that may affect their ability to use the interface.

**Inspiration:** The app should inspire users with ideas and trends in interior design, offering curated collections of furniture and decor, and a gallery of finished designs to help spark creativity.

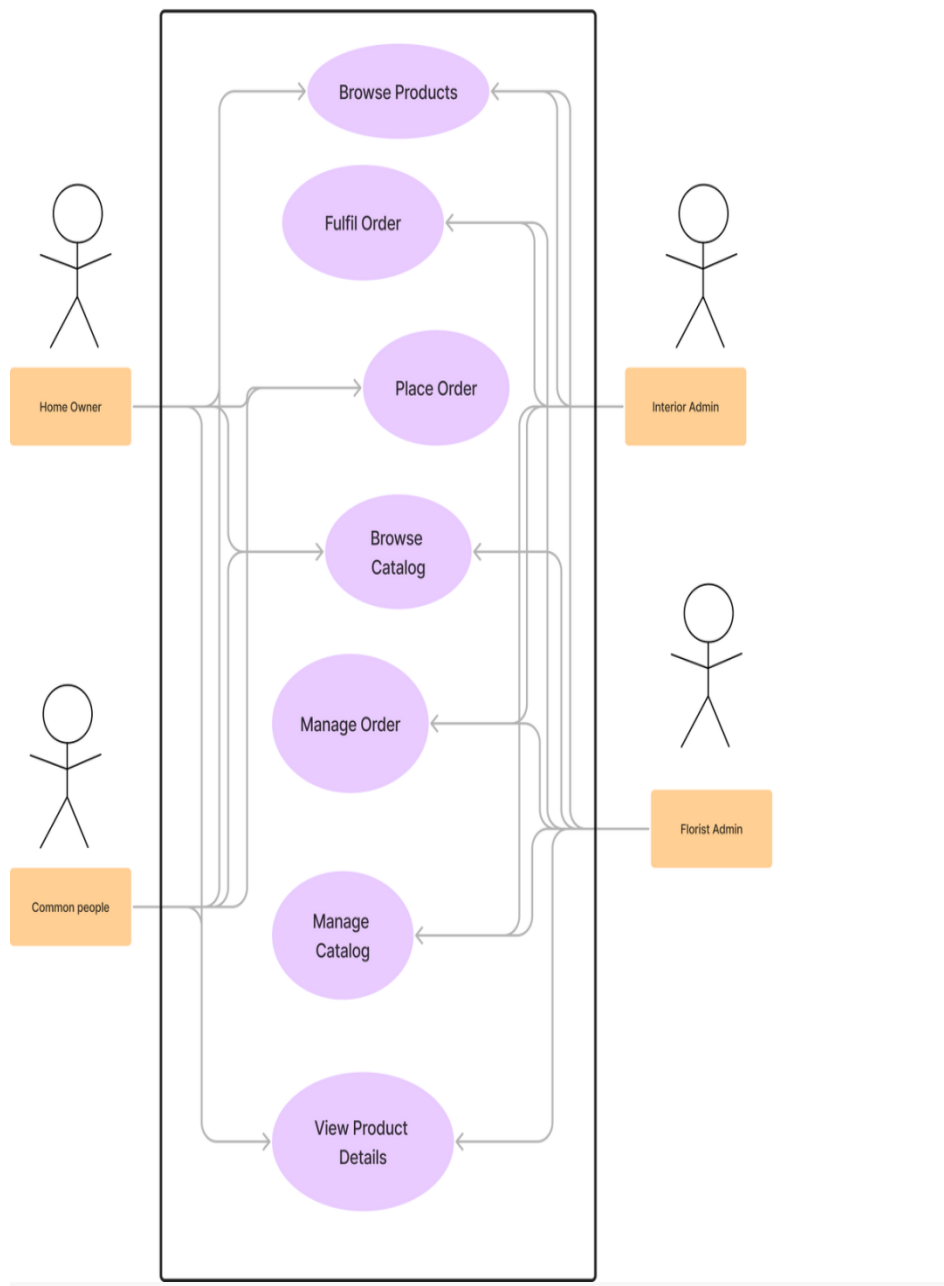
By following these principles, designers can create UI/UX for an interior decor app that is not only aesthetically pleasing but also functional and user-friendly, improving the overall user experience.

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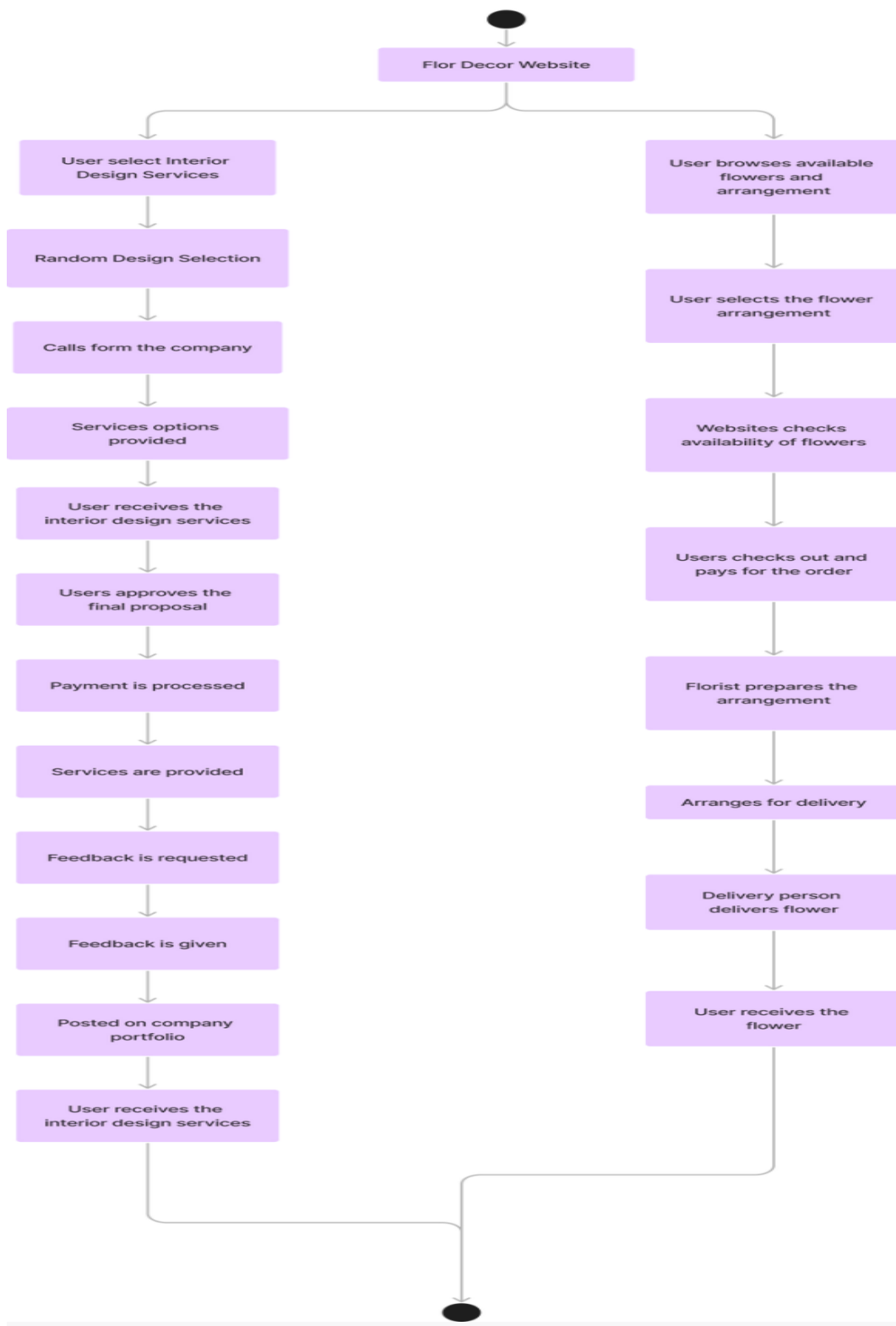
# Mental Model:

## 5 UML DIAGRAMS:

### Use case diagram:

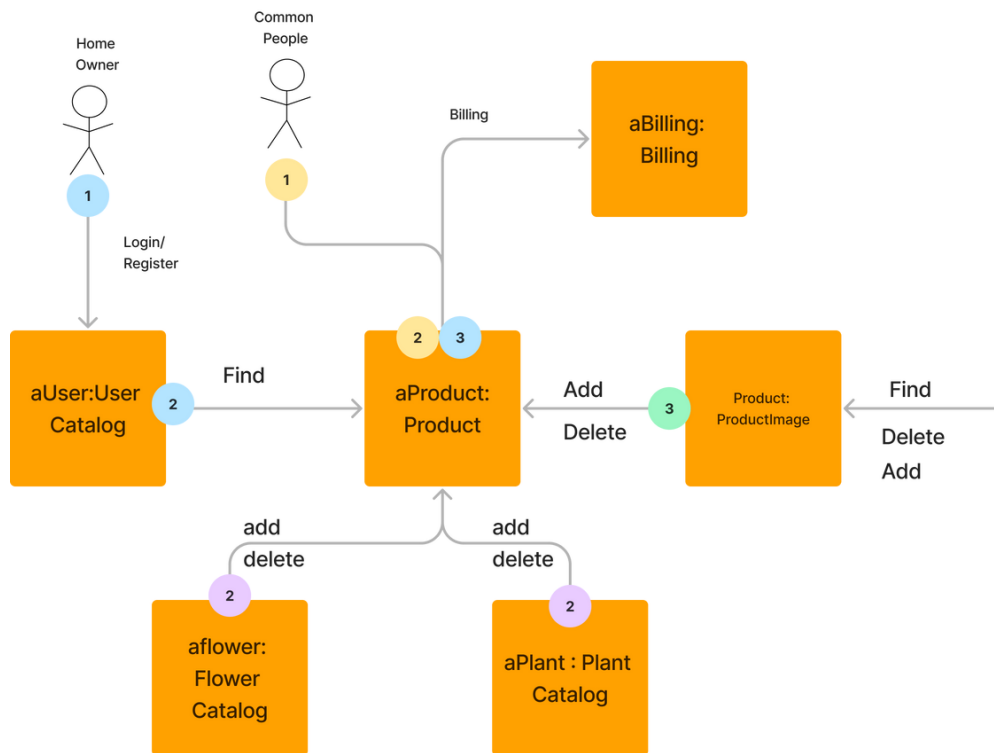


# Activity Diagram:



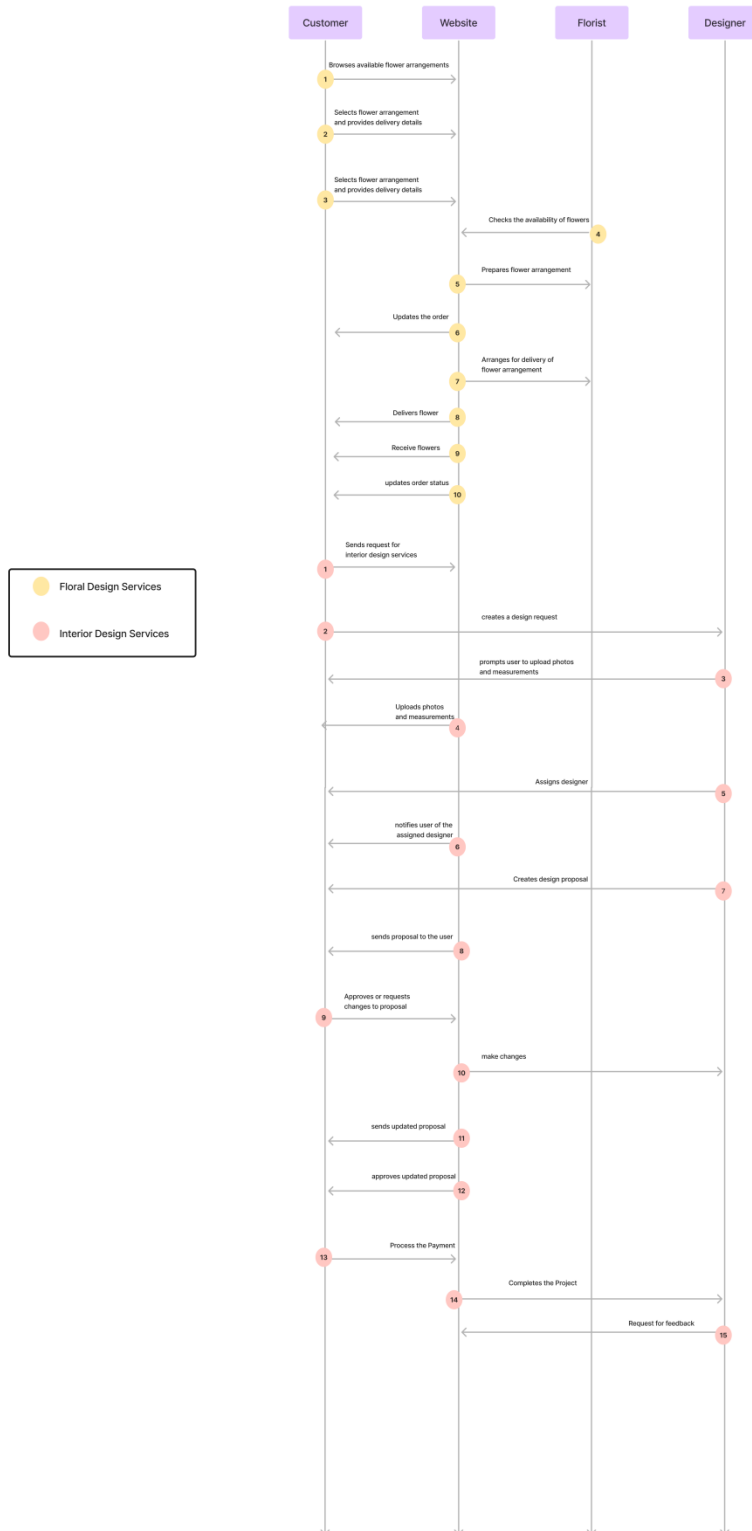
# COLLABORATION DIAGRAM:

## Collaboration Diagram





## Sequence Diagram



## CLASS DIAGRAM:

FlorDecor Design

