Unit 1

1. Explain the concept of design using a suitable example from a mobile or web application.

A design is the concept of or proposal for an object, process, or system. The word, design, refers to something that is or has been intentionally created by a thinking agent, although it is sometimes used to refer to the inherent nature of something.

Problem

Solution

Product / Output

2. Draw a basic UI layout and explain how UI elements improve user interaction.

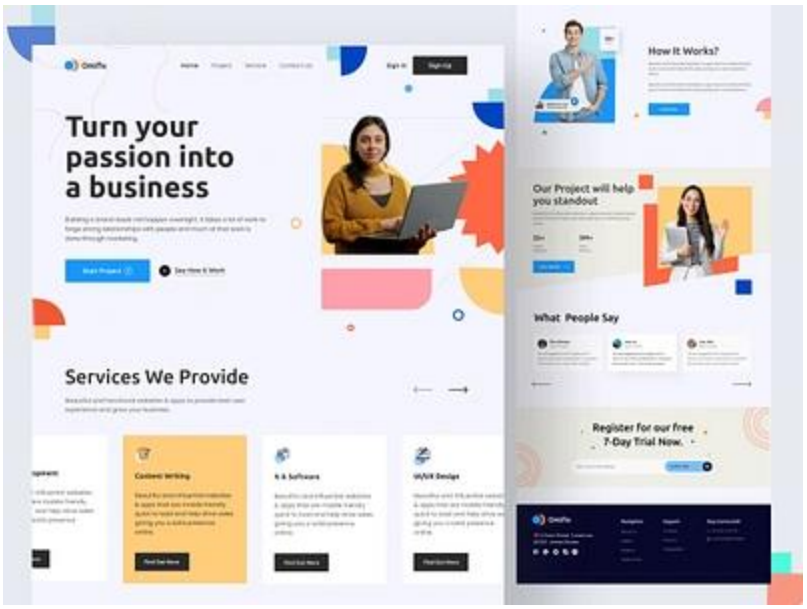
User interface (UI) design is the process designers use to build interfaces in software or computerized devices, focusing on looks or style. Designers aim to create interfaces which users find easy to use and pleasurable. UI design refers to graphical user interfaces and other forms—e.g., voice-controlled interfaces.

Elements

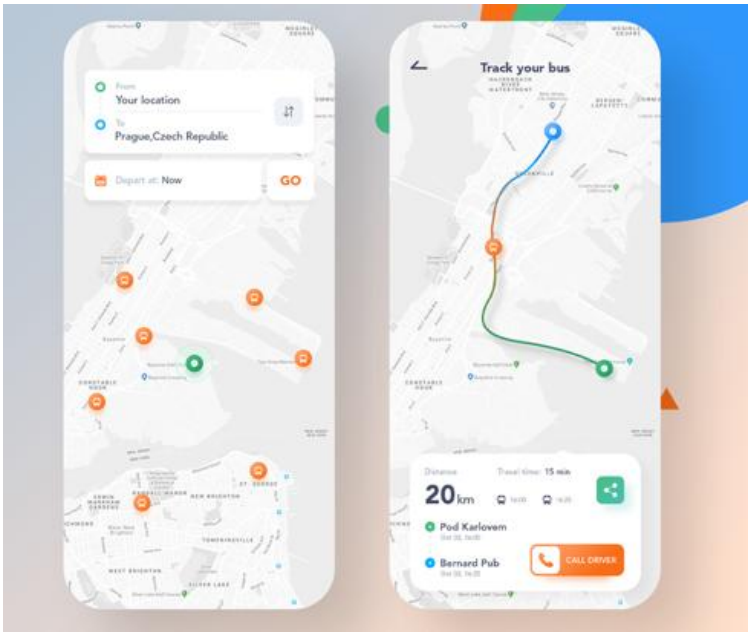
1. Colors : maintain color consistency according to logo and theme
2. Icons : maintain icons consistency based on selected icons like stroked icons or solid color icons
3. Images: maintain image consistency like vectorized image or realistic image which designer wants to use.
4. Fonts: maintain fonts ratio for title , subtitle and description fonts
5. Layouts : select proper layout or artboards for relevant design task

Example for ui design :

Web ui



App ui :



3. Explain the user experience (UX) process with examples of good and bad UX..

about UX. What a user experiences while interacting with a product is called UX. UX design focuses on making easy-to-use products with a simpler learning curve and uncomplicated conceptualization. The goal of UX is to make a design that is user-centered

Examples of good ux

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Examples of bad ux

4. Explain the contributions of different UIUX roles in a team.

UX designer : Plans how a product should work and feel to the user. Focuses on making the experience simple and easy to use.

Product designer : Works on the whole product, from user experience to final design. Combines UX, UI, and business goals into one role.

Visual designer : Designs the look and style of the product like colors, fonts, and layouts. Makes sure the design is attractive and clear.

UX researcher : Studies how users behave and what they need. Collects data through interviews and testing to improve designs.

Content strategist : Plans and creates useful, clear content for users. Makes sure the right information is shown in the right way.

UX unicorn (a generalist role) : A person who can do many roles—design, research, content, and more.
Has a mix of skills and works across all areas of UI/UX.

5. explain seven core principles of interaction design.

1. Visibility

Visibility refers to the ability of users to see and understand the available options for interacting with a digital product. It's essential to ensure that all features and functions are clearly visible to users. This can be achieved by using clear and descriptive labels, icons, and buttons. Visibility helps users to understand what options are available to them and how to interact with the product.

2. Consistency

Consistency refers to the use of the same design elements throughout a digital product. Consistency helps users to understand how to interact with a product and reduces confusion. It's crucial to use consistent color schemes, typography, and layout to ensure that users can easily recognize different elements of the product.

3. Mapping

Mapping refers to the relationship between controls and their actions. You must ensure that controls are placed in a logical and intuitive manner. Users should be able to easily understand the relationship between different controls and their actions. For example, if there is a button to turn on the lights, it should be placed in a location that makes sense and is easy to find.

4. Feedback

Feedback refers to the response that a digital product provides when a user interacts with it. Feedback can be visual, auditory, or haptic. Make sure to provide feedback to users to

confirm that their actions have been registered by the product. Feedback helps to reduce uncertainty and increases the confidence of users in their interaction with the product.

5. Constraints

Constraints refer to the limitations that are placed on the actions that a user can perform. Constraints help to prevent errors and guide users towards the correct actions. Constraints can be physical, logical, or cultural. For example, a logical constraint would be an error message that appears when a user enters incorrect information.

6. Simplicity

Simplicity refers to the ease with which a user can interact with a digital product. It's important to keep the interface simple and intuitive. A simple interface reduces the cognitive load on users and allows them to focus on the task at hand. It is important to avoid clutter and unnecessary complexity.

7. Flexibility

Flexibility refers to a digital product's ability to adapt to different users' needs. It's essential to provide different options for users to interact with a product. For example, you could provide users a variety of input methods, such as touch gestures or voice commands. It is important to provide different options to cater to the needs and preferences of different users.

6. Compare and contrast UI and UX with a suitable example.

Aspect	UI (User Interface) Design	UX (User Experience) Design
Definition	UI design is the process of designing interfaces in software or computerized devices, focusing on looks or style.	UX design is about what the user experiences while interacting with a product.
Main Focus	Visual elements – how the product looks and feels (style, layout, colors, typography).	Overall experience – ease of use, efficiency, and satisfaction.
Goal	To create interfaces that are visually appealing and easy to interact with.	To make the product user-centered and ensure it provides a smooth experience.
Examples	Mobile app and website designs.	A product with easy navigation and intuitive functionality.
Design Scope	Graphical user interfaces, voice-controlled interfaces, etc.	Simpler learning curve, logical flow, and effective problem-solving.

7. Explain the concept of wireframing and classify its types with a relevant example.

Wireframing is the process of creating a visual guide (a skeletal framework) that represents the layout and structure of a digital product such as a website or mobile app. It focuses on:

- Placement of UI elements (buttons, menus, text fields)
- User flow and functionality
- Content hierarchy
- Navigation and interaction paths

Wireframes are **blueprints** for a product before actual design or coding starts. They help UX/UI designers to plan the interface and user experience.

1. **Low-Fidelity Wireframes**

Purpose: Focus on layout and user flow, not appearance.

Details: Basic shapes, placeholders, no colors or styling

2. **High-Fidelity Wireframes**

Purpose: Adds more clarity in layout and information placement.

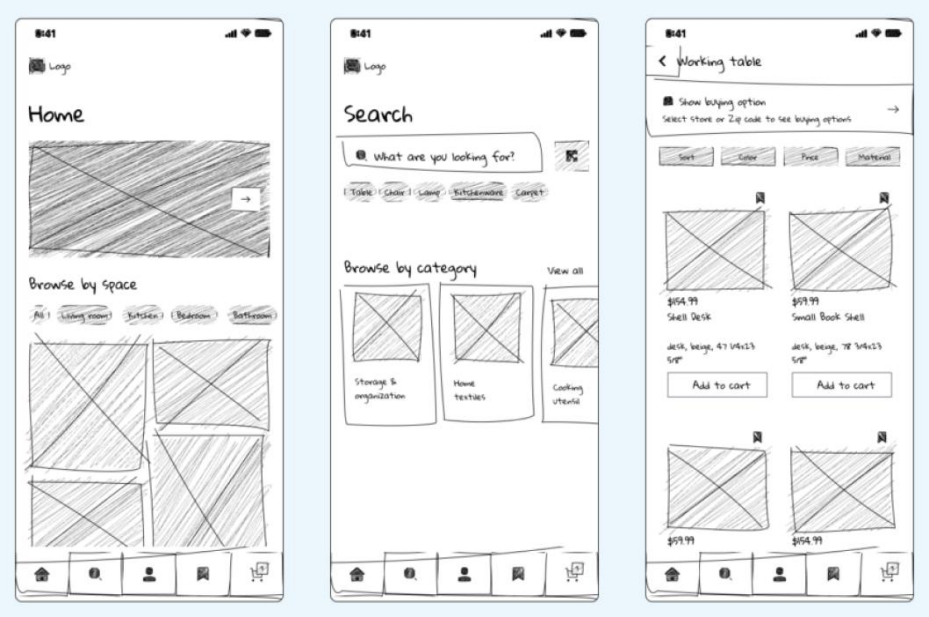
Details: Better alignment, actual text labels, grayscale shades.

8. Design a low-fidelity wireframe for a mobile app design(min 8 screens).

Low-fidelity (lo-fi) wireframes are **basic, rough, and quick representations** of a digital product's layout and structure. They are typically created in the **early stages** of UI/UX design to visualize ideas and test user flow.

Here are the **main features** of low-fidelity wireframes:

Simple and Sketchy Design , Black and White or Grayscale , No Interactive Elements , Fast to Create and Easy to Edit ,



9. Explain essential UI elements and their role in enhancing user experience.

UI design is the process of creating the look and feel of a software or digital device. It focuses on how the product looks and how easy it is for users to interact with it. The goal is to make the interface attractive, consistent, and user-friendly.

UI design includes different types of interfaces, like:

- Graphical interfaces (apps, websites)
- Voice-controlled interfaces (like Alexa, Siri)

Colors
Use colors that match the brand's logo and theme. Keep the color scheme consistent across all screens.

Icons
Use one style of icons (either all outlined or all filled). Avoid mixing different styles.

Images

Choose one type of image style—either all realistic or all vector (illustrated)—and use it consistently.

Fonts

Set a clear font hierarchy. Use different font sizes and styles for titles, subtitles, and body text.

Layouts

Pick the right layout or screen size (artboard) depending on the type of design (mobile, tablet, website, etc.). A proper layout improves user experience.

UNIT 2: UI Types, GUI Design, Web UI

1. Explain types of user interfaces GUI & CLI with examples.

User interfaces allow users to interact with computer systems. Based on your PPT, the main types of user interfaces are:

Graphical User Interface (GUI) : A GUI allows users to interact with digital devices using graphical elements like icons, windows, buttons, and pointers.

Examples:

Operating Systems: Windows, macOS

Applications: Microsoft Word, Photoshop

Mobile Apps: Instagram, WhatsApp

(CLI) Command-Line Interface : CLI allows users to type commands to perform specific tasks. It is text-based and requires knowledge of command syntax.

Examples:

Operating Systems: MS-DOS, Linux Terminal

Developer Tools: Git Bash, Windows PowerShell

2. Define GUI and identify any four key components used in graphical interfaces.

GUI stands for Graphical User Interface. It is a type of user interface that allows users to interact with electronic devices using visual elements like icons, buttons, and windows instead of text-based commands. It makes the interaction simple, user-friendly, and visually appealing.

Components of GUI:

Pointer

A visible symbol (usually an arrow) that moves on the screen and helps users select or interact with elements.

Icons

Small images that represent files, applications, or actions. They help users quickly identify and access functions.

Pointing Tool

Devices like a mouse or trackball that help control the pointer. It allows users to select, drag, and click on-screen items.

Desktop

The main screen that displays icons, folders, and programs. It acts as the user's workspace in the interface.

3. Explain a command-line interface with it’s features.

A Command-Line Interface (CLI) allows users to interact with a system by typing text commands. It is one of the primary types of user interfaces

Text-Based Interaction:
Users interact with the system by typing commands in plain text.

High Speed and Efficiency:
Faster than GUI for experienced users since tasks can be done quickly using keyboard commands.

Low Memory Usage:
Requires less system resources compared to graphical interfaces.

Examples:

Operating Systems: windowsOs, linuxOs

Developer Tools: Sublime Text , Visual Studio

4. Analyze the structure and components of GUI and their significance in user interaction.

Pointers: The pointer appears on the user’s screen as a marking symbol. The pointer moves on to choose instructions and objects as per requirement.

Icons: Icons allude to tiny visual representations of windows, documents, actions, and other things on the display screen to simplify. A pointer and pointing device can be used by the user to carry out the initial tasks for the overall processes.

Pointing tool: At the initial stages, the pointing tool enables the user to select and move the required pointer items on the screen, including a trackball or mouse. It is the most beneficial tool in GUI.

Desktop: The desktop is the screen that is contained within the icons and user beneficial.

5. Explain GUI features and justify their use across multiple device platforms.

The graphical user interface (GUI) is very easy to use and the user can modify and simplify the requirements.

The required software, documents, or a few relevant programs are reflected in the icons on the user interface to control the overall processes properly.

A graphical user interface (GUI) has several features as per requirement, such as tabs, a menu, pointers, and various other types of things to simplify and process smoothly.
Advantages of GUI

A graphical user interface (GUI) is basically seen as more intuitive for users than a text-based command-line interface as per requirement, such MS-DOS or the Unix-like operating system shell process.

It is incredibly user-friendly and readily available to all and for novices, the user interface is rather easy to understand and uncomplicated as per requirement.
GUI represents the now-hidden lines of command with the required graphic elements.

The end users must commit required instructions to memory for the software to function properly.

6. Define the benefits of effective design from both user and business perspectives.

It allows you to make a positive first impression on potential customers. It has been shown that human beings form an initial impression within a couple of seconds, but it can take a lot longer than this to alter that perception once a first impression has been made.

Making a site/app incredibly user friendly
Conveying clear understanding of product, use, or intention
Simplifying navigation and accessibility
Setting your brand apart
Increasing sales
Simplifying complex concepts

Ultimately, good design increases your company’s value, boosts sales, and puts your business in a better financial situation.

Through building trust, making strong first impressions, building customer relationships, and even executing successful campaigns, good design helps make your business more profitable.

7. Explain the advantages of GUI when used in Web or App UI.

Advantages

User-friendliness: GUIs are more intuitive to most of us than text-based interfaces, enough that even those with very limited knowledge of computers can use them without learning a coding language or computer commands.

Efficiency: GUIs let users complete tasks more quickly and easily. A task that would take multiple typed commands in a CUI can be achieved with just a couple of mouse clicks in a GUI.

Clarity: GUIs make it clear what each visual element does and provide users with visual feedback to indicate whether their actions are successful or not.

Aesthetic: GUIs are more visually attractive and engaging to us than plain text, and developers have much more control over their visual customization to create a pleasing user experience.

Accessibility: In many cases, GUIs are more accessible to users with disabilities, impairments, and limitations.

8. Define disadvantages of GUI with respect to system performance and design flexibility.

Dis advantages

Graphical user interfaces are ubiquitous in personal computing, but they’re not universal. Some users prefer text-based interfaces, like executing actions via the command line.

Here are some minor drawbacks to GUIs when compared to other interfaces:

Speed: GUIs are slower and require more power than text-based interfaces.

Memory usage: GUIs require more computer memory than text-based interfaces.

Lack of flexibility: Usually, a user has to work within the restrictions of a GUI and can't change its functionality. With text-based interfaces, it's easy to install packages with powerful custom commands.

Inefficiency: Yes, efficiency is a major advantage of GUIs for most. But, many tech-savvy users find it more efficient to execute commands in a CUI. Plus, CUI commands can be automated.

Build: GUIs need to be built by a design and development team, which takes additional time and resources.

9. Explain characteristics that distinguish an effective GUI in terms of responsiveness and accessibility.

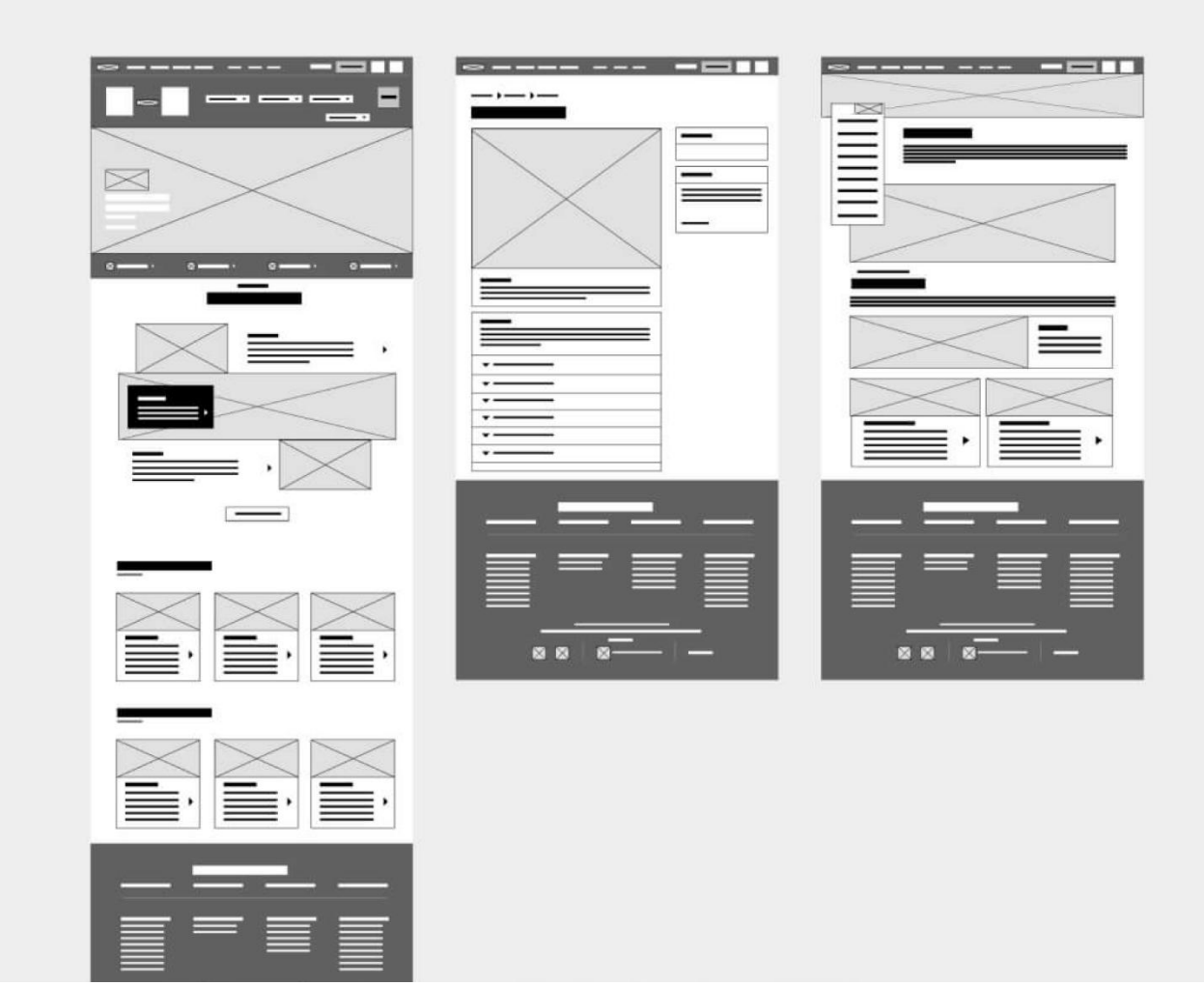
Responsiveness:

- The GUI should work well on all screen sizes (mobile, tablet, desktop).
- It should load quickly and give instant feedback (like showing a loading icon or button click effect).
- Users should be able to do multiple things at once without delay.

Accessibility:

- The design should be easy for everyone to use, including people with disabilities.
- Use clear fonts, good contrast, and keyboard navigation.
- Show helpful error or success messages to guide the user.
- Keep actions and options visible to avoid confusion.

10. Draw a responsive website low-fidelity wireframe for a landing page.



11. Explain characteristics of modern Web UI using at least five examples.

Simplicity and Clarity

Minimalism: Use minimal elements to avoid clutter and confusion.
Clear Navigation: Ensure that menus and buttons are intuitive and easy to find.
Readability: Use legible fonts, appropriate font sizes, and sufficient contrast.

Responsiveness

Adaptive Design: Ensure the UI works well on different devices and screen sizes.
Fast Loading: Optimize performance to reduce load times.
Interactive Feedback: Provide immediate feedback for user actions (e.g., button presses).

Consistency

Visual Consistency: Maintain uniform styles (colors, fonts, buttons) across the site.
Functional Consistency: Ensure similar functions behave in the same way throughout the site.

Engaging and Interactive

Interactive Elements: Include interactive elements that engage users (e.g., animations, hover effects).
User Engagement: Encourage user interaction through gamification, rewards, or social sharing.

Content-Driven Design

Relevant Content: Ensure the content is relevant, valuable, and easily digestible.
Multimedia: Use images, videos, and infographics to complement text and engage users.
SEO-Friendly: Optimize content for search engines to improve discoverability.

12. explain core UI design principles to improve an app.

Minimize actions − Minimize action means steps per screen. The tasks and actions are streamlined so that they can be done in as few steps as possible. The interface should be designed keeping in mind to maintain the steps as few as possible for performing any tasks.

Simplicity − The user interface should not be complex. It should always be designed simple and elegant.

Consistent − The user interface should be consistent. The design should be consistent. Increasing consistency increases the familiarity, and hence increases the usability.

Proving useful feedback − The user should be provided with feedback for every action. This keeps the user informed and helps them to know whether some action was successful or not.

Clarity − Content should provide the user with clarity. There should not be anything which confuses the user, as it becomes an obstacle for the user in interacting with the product.

13. Analyze and differentiate types of gradient colors with examples of their use in interface design.

In interface design (UI), gradient colors help create depth, focus, and visual appeal. In Figma, there are mainly 4 types of gradients:

1. Linear Gradient

Description: Colors blend in a straight line (horizontal, vertical, or angled).

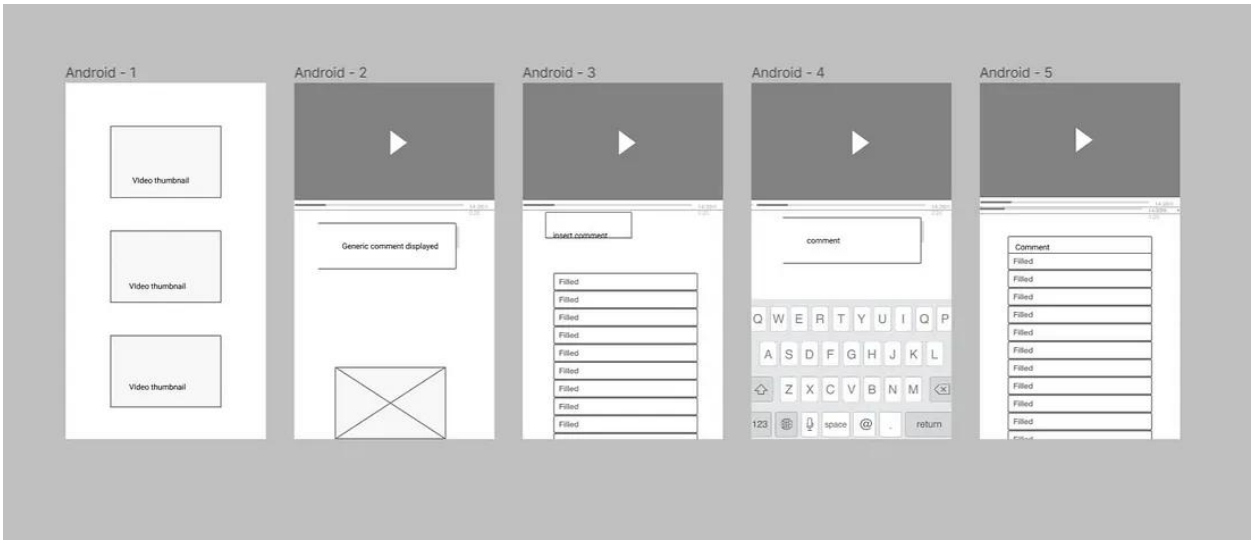
2. Radial Gradient
Description: Colors spread out from a central point like a circle.

3. Angular Gradient (Conic)
Description: Colors rotate around a center point (like a color wheel).

4. Diamond Gradient
Description: Similar to radial, but the shape spreads in a diamond form.

You can apply these gradients by selecting a shape → Fill → changing "Solid" to "Gradient" → choose the type and edit colors & angles.

14. Design a prototype based on a low-fidelity wireframe for a youtube app(min 8 screens).



15. Define the concept of object orientation in GUI systems using suitable examples.

Object Orientation

A graphical system consists of objects and actions. Objects are what people see on the screen as a single unit.
Objects can be composed of sub objects. For example, an object may be a document and its sub objects may be a paragraph, sentence, word, and letter.

Objects are divided into three meaningful classes as Data objects, which present information, container objects to hold other objects and Device objects represent physical objects in the real world.
Objects can exist within the context of other objects, and one object may affect the way another object appears or behaves. These relationships are called collections, constraints, composites, and containers.
Properties or Attributes of Objects : Properties are the unique characteristics of an object. Properties help to describe an object and can be changed by users.

Actions: People take actions on objects. They manipulate objects in specific ways (commands) or modify the properties of objects (property or attribute specification).
The following is a typical property/attribute specification sequence:
The user selects an object—for example, several words of text.

The user then selects an action to apply to that object, such as the action BOLD.
The selected words are made bold and will remain bold until selected and changed again.

16. Describe four key types of Web UI characteristics with examples.

1. User-Centric Design

User Research: Conduct user research to understand the needs and behaviors of your target audience.
Accessibility: Make sure the UI is accessible to users with disabilities, following guidelines like WCAG.
Personalization: Provide options to personalize the experience based on user preferences.

2. Intuitive Navigation

Logical Structure: Organize content in a way that makes sense to the user.
Search Functionality: Provide robust search options to help users find information quickly.
Breadcrumbs: Use breadcrumb navigation to help users understand their location within the site.

3. Visual Hierarchy

Prominent Call-to-Actions (CTAs): Highlight primary actions to guide users towards desired outcomes.
Content Organization: Arrange content in a way that guides the user's eye through the page logically.
Contrast and Color: Use contrast and color to differentiate between elements and highlight important information.

4. Feedback and Error Handling

Error Messages: Provide clear, concise, and helpful error messages.
Confirmation Messages: Offer confirmations for critical actions (e.g., submitting a form).
Loading Indicators: Use indicators to show when the system is processing a request.

17. Explain the role of clarity and feedback in user interface design.

Minimize actions − Minimize action means steps per screen. The tasks and actions are streamlined so that they can be done in as few steps as possible. The interface should be designed keeping in mind to maintain the steps as few as possible for performing any tasks.

Proving useful feedback − The user should be provided with feedback for every action. This keeps the user informed and helps them to know whether some action was successful or not.

Clarity − Content should provide the user with clarity. There should not be anything which confuses the user, as it becomes an obstacle for the user in interacting with the product.

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Consistent − The user interface should be consistent. The design should be consistent. Increasing consistency increases the familiarity, and hence increases the usability.

UNIT 3: User Research & Information Architecture

1. Design a concept sheet for a mobile shopping app and explain its structure.

a concept sheet is a document that outlines the core ideas and goals behind a design, acting as a blueprint for the product team.

Concept Title : unique name of your project

Concept Nature : online / offline

business type : B2B / B2C

revenue model : 1CR

collaboration and partner ? : 2 partners ratio (70:30)

2. Apply brainstorming to generate ideas for an educational portal.

Brainstorming is a group problem-solving method that involves the spontaneous contribution of creative ideas and solutions.

- Student Dashboard – View courses, progress, assignments.
- Teacher Panel – Upload lectures, give assignments, evaluate students.
- Admin Control Panel – Manage users, content, announcements.
- Parent Access – Monitor student progress, attendance, and feedback.
- Recorded Video Lectures – Subject/topic-wise content.
- Live Classes with Chat Support – Interactive sessions via Zoom or integrated tool.
- Downloadable Notes/PDFs – Course material for offline access.
- Subject-wise MCQs & Quizzes – Practice with instant feedback.
- Assignments with Submission Deadline – Auto reminders for students.
- AI-based Progress Tracker – Suggests what to study next.
- Doubt-Solving Forum – Post questions, get answers from peers/faculty.
- Flashcards & Summary Notes – Quick revision tools.
- Gamification – Points, badges, leaderboards for motivation.
- Voice Search for Content – Easy access to topics by speaking.
- Mobile App & Responsive Website – For learning on any device.

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- Push Notifications & Alerts – For class timings, results, events.
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- Multilingual Support – English + regional languages.
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- Dark Mode / Accessibility Tools – For eye comfort & inclusivity.
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- Daily Challenges / Quiz of the Day – Keeps users active & engaged.
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- Career Guidance Section – Aptitude tests, expert advice, and trending skills.

3. Explain how affinity mapping helps organize and prioritize user inputs(ex educational case study).

Affinity mapping, also known as affinity diagramming, is a method for organizing and categorizing qualitative data to find patterns and insights.

1. User Roles & Access

1. **Student Dashboard** – View courses, progress, assignments.
2. **Teacher Panel** – Upload lectures, give assignments, evaluate students.
3. **Admin Control Panel** – Manage users, content, announcements.
4. **Parent Access** – Monitor student progress, attendance, and feedback.

2. Learning Content & Delivery

5. **Recorded Video Lectures** – Subject/topic-wise content.
6. **Live Classes with Chat Support** – Interactive sessions via Zoom or integrated tool.
7. **Downloadable Notes/PDFs** – Course material for offline access.
8. **Subject-wise MCQs & Quizzes** – Practice with instant feedback.
9. **Assignments with Submission Deadline** – Auto reminders for students.

3. Smart Learning Tools

10. **AI-based Progress Tracker** – Suggests what to study next.
11. **Doubt-Solving Forum** – Post questions, get answers from peers/faculty.
12. **Flashcards & Summary Notes** – Quick revision tools.
13. **Gamification** – Points, badges, leaderboards for motivation.
14. **Voice Search for Content** – Easy access to topics by speaking.

4. Technical & Engagement Features

15. **Mobile App & Responsive Website** – For learning on any device.
16. **Push Notifications & Alerts** – For class timings, results, events.
17. **Multilingual Support** – English + regional languages.
18. **Dark Mode / Accessibility Tools** – For eye comfort & inclusivity.
19. **Daily Challenges / Quiz of the Day** – Keeps users active & engaged.

5. Value-Added Features

20. **Career Guidance Section** – Aptitude tests, expert advice, and trending skills.
21. **Certification on Completion** – For every course/module.
22. **Scholarship & Admission Info Board** – Latest opportunities & dates.
23. **Parent-Teacher Meeting Scheduler** – Virtual or physical slots.
24. **Student Portfolio Builder** – Projects, certificates, achievements.

4. Apply domain research methods to design a online educational portal app.

User Research (Know Your Audience)

Methods:

- **Surveys & Questionnaires** – Ask students, teachers, and parents about their needs and struggles with online education.
- **Interviews** – One-on-one talks with real users to gain deeper insights.
- **User Personas** – Create fictional profiles like "School Student", "Engineering Faculty", or "Parent".

Market Research (Know Your Competition)

Methods:

- **Competitive Analysis** – Study apps like BYJU'S, Coursera, Khan Academy.
- **SWOT Analysis** – Identify strengths, weaknesses, opportunities, and threats of competitors.
- **Feature Benchmarking** – Compare features (video content, test engine, gamification, etc.).

Contextual Inquiry

Methods:

- **Observation** – Watch how students use existing learning apps.
- **Shadowing** – Follow a user through a learning session.
- **Task Analysis** – Break down tasks like “joining a class” or “submitting homework”.

5. Define how market research contributes to developing a better user-centric application.

Market research plays a critical role in designing a user-centric educational portal application by helping developers understand what users want, need, and expect.

Identifies User Needs:

- Through surveys and interviews, you learn what features students and teachers actually want (e.g., live classes, quizzes, downloadable notes).

Reveals Market Gaps:

- Competitor analysis highlights what existing apps lack—helping you add unique, useful features like multilingual support or parent dashboards.

Improves UI/UX Design:

- Observing how users interact with current platforms shows where they struggle. This helps improve navigation, layout, and flow.

Helps Prioritize Features:

- Research helps you focus on the most demanded functionalities, avoiding unnecessary features and saving development time and cost.

Supports Personalization:

- Understanding user behavior allows the app to recommend content, track progress, and deliver a more personalized learning experience.

Builds Trust and Engagement:

- When users feel the app is designed based on their feedback and real needs, they are more likely to engage, return, and recommend it.

6. Analyze how user interviews and journey maps lead to better UX decisions.

1. What are User Interviews?

User interviews are one-on-one conversations with real users to understand their needs, problems, and how they use apps.

How they help:

- You get real opinions and feelings.
- You learn what users like or find confusing.
- You find out what features they actually need.

Result: You design features that solve real problems.

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2. What is a Journey Map?

A journey map is a visual chart that shows **how a user moves through the app**, step by step—from start to finish.

How it helps:

- Shows where users get stuck or confused.
- Helps you find points where users feel frustrated or happy.
- Makes it easier to improve steps that are slow or boring.

Result: You improve the flow of the app so it feels easy and smooth to use.

7. Explain five effective user research questions for a travel booking application.

How do you usually book your travel tickets (flights, trains, buses)?
To understand the user's current behavior.

What features do you look for in a travel booking app?
To know what matters most (price, timing, filters, etc.).

Have you faced any problems while booking tickets online?
To identify pain points and improve them.

How important is customer support during or after booking?
To evaluate need for support features.

Would you prefer booking travel and hotels in the same app? Why or why not?
To explore user interest in extra features.

8. Design a user persona for an online education platform.

User Persona Ex:

Name: Riya Patel
Age: 19
Location: Ahmedabad, Gujarat
Education: 2nd year B.Sc. student
Tech Skills: Average – uses apps like YouTube, Zoom, WhatsApp

Goals:

- Learn subjects clearly for college exams
- Watch recorded lectures when convenient

Frustrations:

- Videos take too long to load on slow internet
- Hard to find the right topic quickly
- Some apps have too many ads and popups
- Gets confused when there's no clear flow or syllabus

9. Analyze the competitive landscape between popular educational apps.

Feature	BYJU'S	Unacademy	Khan Academy	Coursera	Udemy
Target Users	School Students	Competitive Exams	School/College	College/Professional	General Learners
Content Type	Video + Tests	Live + Recorded	Free Videos	University Courses	User-created courses
Pricing	Paid	Freemium	Free	Paid (some free)	Paid
Certification	✗	✗	✗	✓	✓
Mobile App	✓	✓	✓	✓	✓

Language Support	English, Regional	English, Hindi	English	English	English

10. Design an information architecture layout for a restaurant ordering system.

Restaurant Ordering System – Information Architecture

Home Page

- Welcome Message
- Featured Dishes / Offers
- “Order Now” Button
- Sign In / Register

User Account

- Login / Register
- Profile Details
- Order History
- Saved Addresses
- Payment Methods
- Logout

Menu Section

- Categories:
    - Starters
    - Main Course
    - Desserts
    - Beverages
- Filters:
    - Veg / Non-Veg
    - Spicy / Mild
    - Price Range
- Dish Details Page:
    - Image
    - Description
    - Price
    - “Add to Cart” button

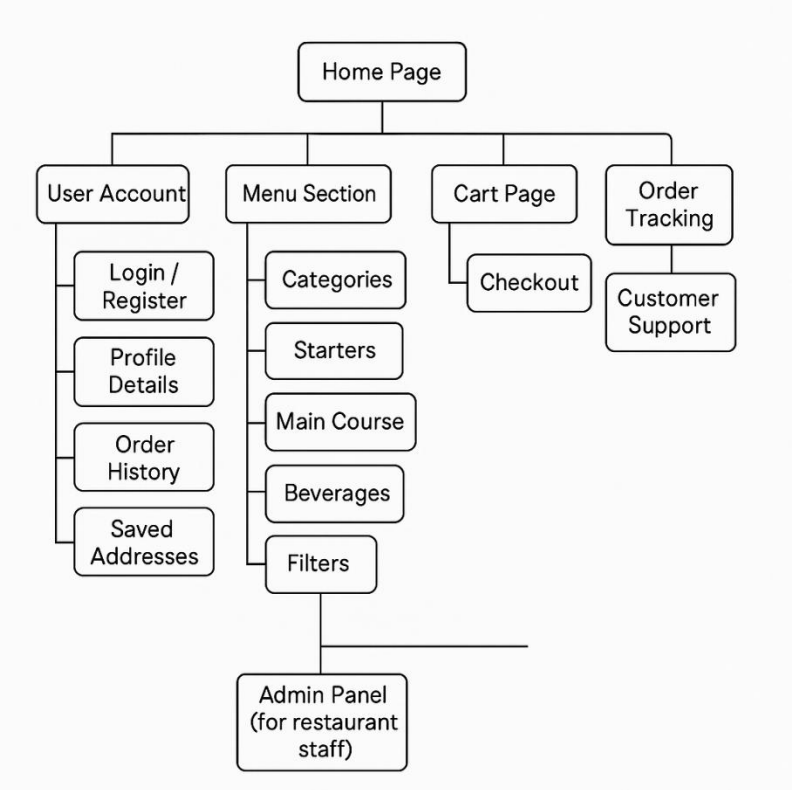
Cart Page

- List of Selected Items
- Quantity Controls
- Price Calculation
- Apply Coupon Code

- Proceed to Checkout

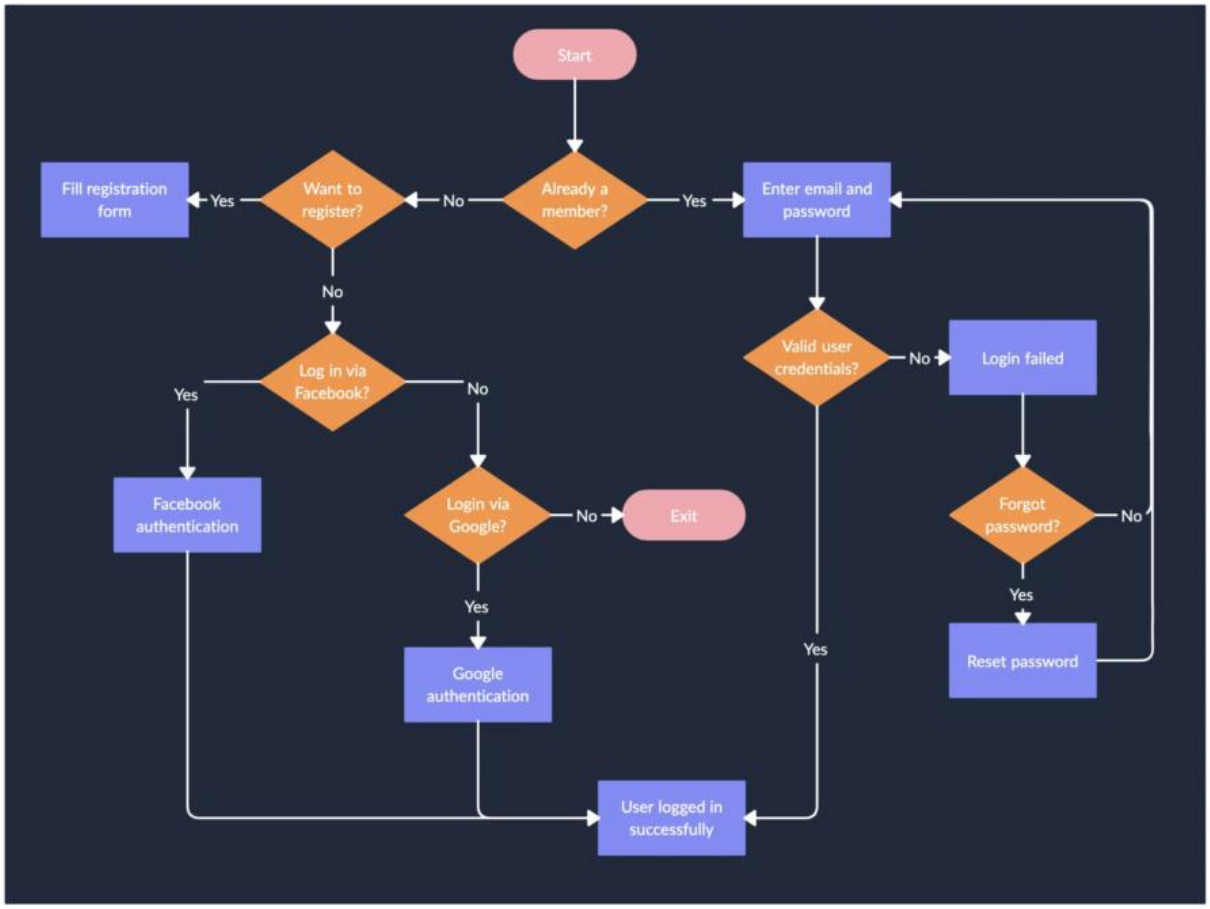
Checkout Page

- Select / Add Delivery Address
- Choose Payment Method
- Delivery Time Slot
- Confirm Order



11. Draw user flow mapping to process from login.

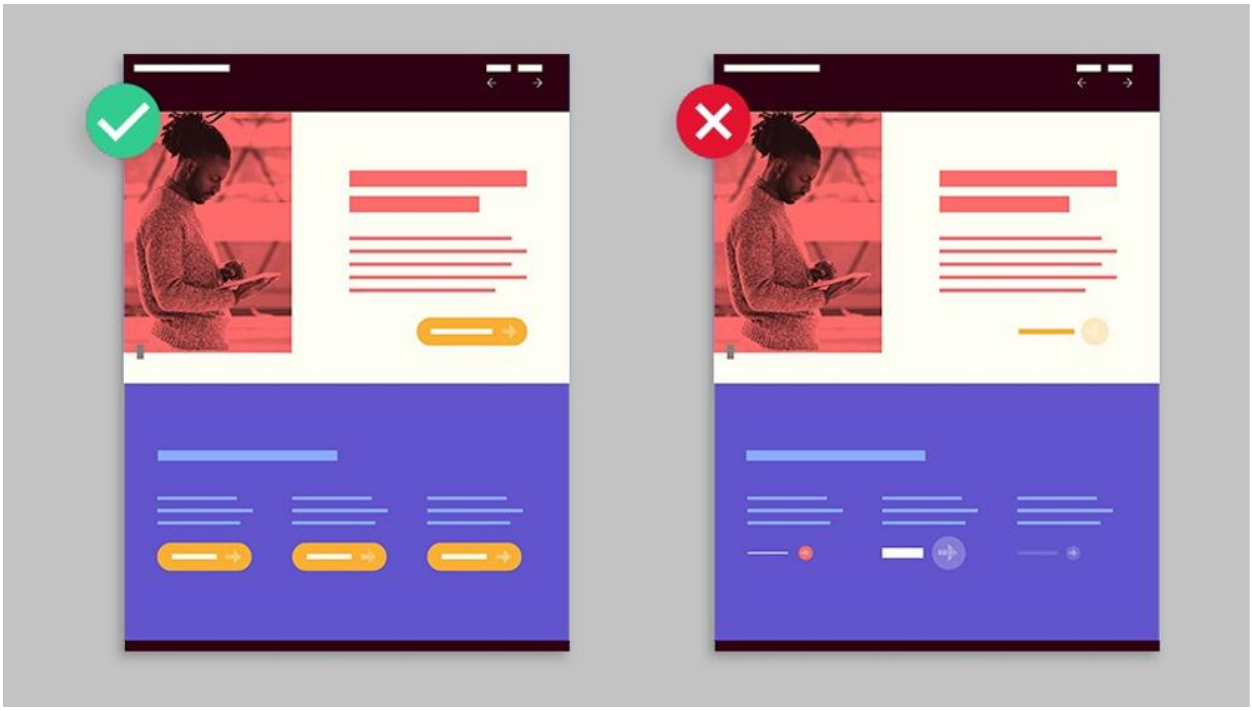
A user flow is a user experience (UX) concept that investigates and documents the user actions required by a typical user to complete a defined task.



12. Define contrast between good and bad UI design with appropriate examples.

GOOD DESIGN is visually pleasing and creates a sense of harmony and balance. It uses color, typography, and composition effectively to create a cohesive look.

BAD DESIGN is often visually cluttered and unbalanced, making it difficult for the viewer to focus on the important information.



Good Design

Meets All technical & User Requirements

Works All The Time

Meets Costs Requirements (Coasting Is Low)

It’s safe (the rejection ratio is very low)

Easy to access & Easy to Explain (Flow is clear)

Bad Design

Doesn’t Meets All technical & User’s Requirements

Not Working All Time

Doesn’t Meets Costs Requirements (Coasting Is very high Due to Revision work)

It’s not safe (the rejection ratio is very high by client or by developer)

hard to access & Difficult to Explain (Flow is not clear)

13. Explain methods to identify users and understand their needs effectively.

who is User : a person who uses a service, or uses your product.

How can you understand your user and user needs

Usability testing: Ask participants to complete a task to understand how they interact with a product.

User interviews: Learn what users think of a product or service, and what they find challenging or convenient.

Focus groups: Understand the target users and market, and what they need.

Card sorting: Ask participants to group items into categories to understand how they organize information.

Field studies: Observe what users actually do, rather than what they say they do.

Diary studies: Gather a deep understanding of user behaviors with a variety of products.

Creating personas: Develop empathy with users and make decisions that address their frustrations.

14. Explain product objectives and align them with user expectations.

How can you understand Product Objectives

Start with a problem statement

A problem statement helps you identify the issues your users are having, which can help you define your objectives. For example, if users are having trouble navigating your customer profile pages, your objective might be to uncover usability and navigation issues with the design elements.

Align with the project scope

The project scope describes the problem you're trying to solve, the solution you're proposing, and the constraints and assumptions you're working with.

Use metrics

UX metrics can help you understand how efficient, effective, loyal, and satisfied your customers are. You can use various types of metrics, including quantitative, behavioral, qualitative, and attitudinal metrics.

Use the S.M.A.R.T. framework

The S.M.A.R.T. framework helps you write objectives that are specific, measurable, achievable, realistic, and time-based.

Use feedback widgets

Feedback widgets can help you collect feedback on specific elements or features of your product. This can help you identify elements that are causing frustration for your users.

15. List and apply three methods to understand user needs effectively.

Personal Interviews

- **What it is:**
  A one-on-one conversation with users to understand their experiences, frustrations, and expectations.

- **How to apply it:**
  Prepare 4–5 structured questions and ask users about their daily tasks, problems faced, and what they expect from your product. Also include their background, goals, and frustrations.

Market Research

- **What it is:**
  Research done to evaluate the current market trends, competitors, and user preferences.

- **How to apply it:**
  Study your competitors' products, pricing strategies, and customer reviews. If designing a restaurant app, analyze current food trends, menu designs, and popular delivery features.

User Persona

- **What it is:**
  A fictional profile that represents your target user based on research data.

- **How to apply it:**
  Create a persona with a name, age, occupation, goals, frustrations, and preferred features. Use this persona to make design decisions focused on user needs.

16. Explain the process of understanding users using any four UX research methods.

Focus groups: Understand the target users and market, and what they need.

Card sorting: Ask participants to group items into categories to understand how they organize information.

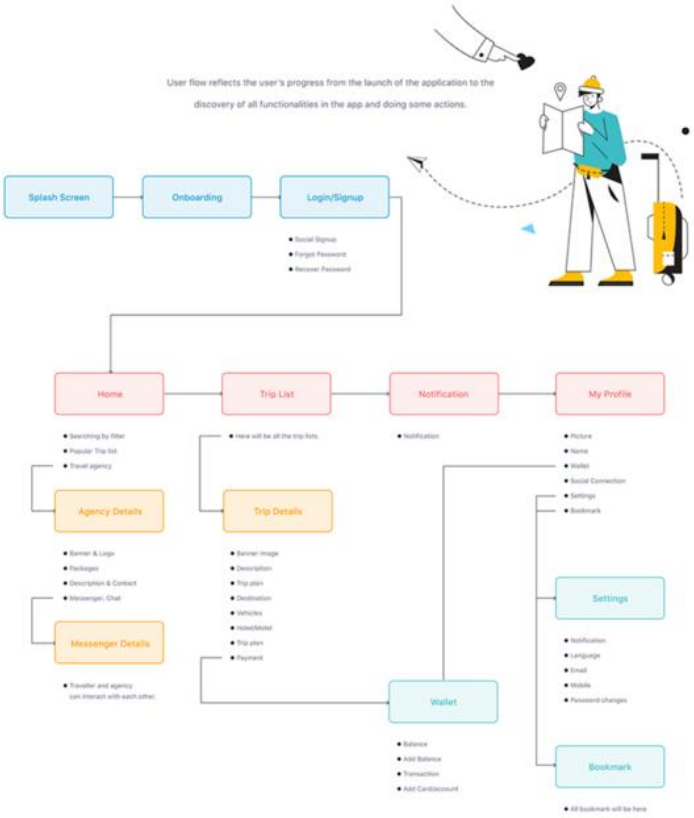
Field studies: Observe what users actually do, rather than what they say they do.

Diary studies: Gather a deep understanding of user behaviors with a variety of products.

Creating personas: Develop empathy with users and make decisions that address their frustrations.

17. Differentiate between user flow and information architecture with diagrams.

information architecture is the practice of organizing and structuring content on a website or app to make it easy for users to find and use.



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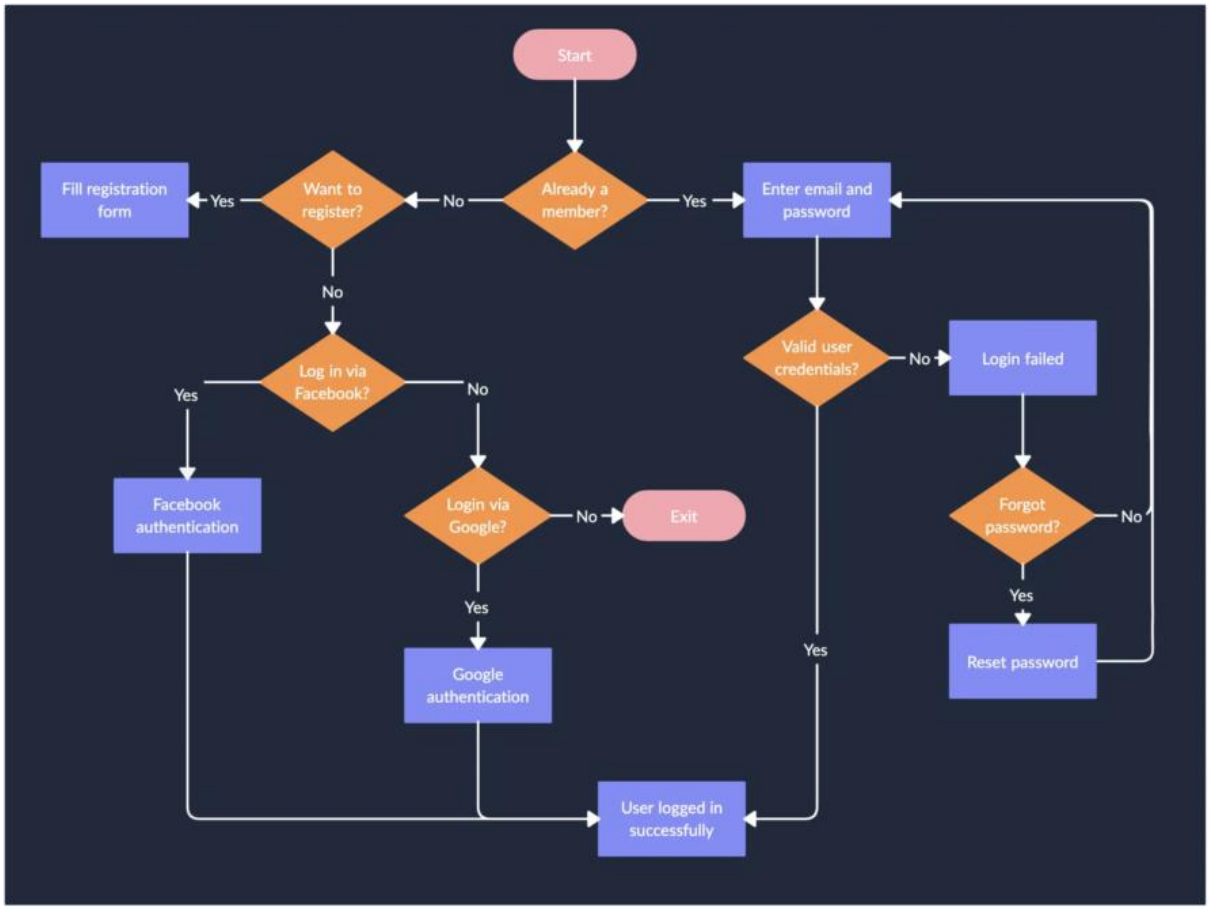
Start
Already a member?
Yes
No
Want to register?
Yes
Fill registration form
No
Log in via Facebook?
Yes
Facebook authentication
No
Login via Google?
No
Exit
Yes
Google authentication
Enter email and password
Valid user credentials?
No
Login failed
Forgot password?
No
Yes
Reset password
Yes
User logged in successfully