Diploma Engineering

Laboratory Manual

Subject: UI & UX Design

Subject Code: DI04016041

Information Technology 4th Semester

Enrollment No.	
Name	
Branch	
Academic Term	
Institute	

Directorate of Technical Education,

Gandhinagar - Gujarat

DTE's Vision:

- To facilitate quality technical and professional education having relevance for both industry and society, with moral and ethical values,
- giving equal opportunity and access,
- Aiming to prepare globally competent technocrats.

DTE's Mission:

1. Quality technical and professional education with continuous improvement of all the resources and personnel.
2. To promote conducive ecosystem for Academic, Industry, Research, Innovations and Startups.
3. To provide affordable quality professional education with moral values, equal opportunities, accessibility and accountability.
4. To allocate competent and dedicated human resources and infrastructure to the institutions for providing world-class professional education to become a Global Leader ("Vishwa Guru").

Institute's Vision:

Institute's Mission:

Department's Vision:

Department's Mission:

PREFACE

The field of User Interface (UI) and User Experience (UX) Design has emerged as one of the most critical disciplines in the digital era. As technology continues to evolve and permeate every aspect of our lives, the demand for intuitive, accessible, and aesthetically pleasing digital products has never been greater. This practical lab manual for UI & UX Design (Subject Code: DI04016041) has been carefully crafted to bridge the gap between theoretical knowledge and practical implementation, empowering diploma students to become proficient designers capable of creating meaningful user experiences.

In today's competitive digital landscape, understanding user needs and translating them into effective design solutions is paramount. This manual is designed to provide hands-on experience with industry-standard tools, methodologies, and best practices that are essential for any aspiring UI/UX designer. Each practical session has been structured to progressively build skills, starting from fundamental design principles and advancing toward complex, real-world design challenges.

The exercises contained within this manual emphasize a user-centered design approach, encouraging students to think critically about usability, accessibility, and the emotional impact of their designs. Through wireframing, prototyping, user research, usability testing, and visual design exercises, students will develop a comprehensive skill set that prepares them for professional practice. Special attention has been given to incorporating contemporary design trends, responsive design principles, and mobile-first methodologies that reflect current industry standards.

We believe that great design is not merely about aesthetics—it is about solving problems, enhancing human experiences, and creating products that people genuinely enjoy using. This manual encourages experimentation, iteration, and creative thinking while maintaining a strong foundation in design principles and user psychology.

As you embark on this practical journey, we encourage you to approach each exercise with curiosity and an open mind. Embrace feedback, learn from failures, and continuously refine your work. The skills you develop through these practical sessions will serve as the cornerstone of your career in design, whether you pursue opportunities in web design, mobile application development, product design, or any other field where user experience matters.

We extend our gratitude to the faculty members, industry professionals, and students whose valuable inputs have shaped this manual. We hope this resource serves as both a comprehensive guide and an inspiring companion throughout your learning journey.

Best wishes for your success in mastering the art and science of UI & UX Design.

(Curriculum Development Team)

Certificate

This is to certify that Mr./Ms ……Enrollment No. ……..…….……. of …….……. Semester of Diploma in Information Technology of ……. (GTU Code) has satisfactorily completed the term work in course "UI & UX Design (DI04016041)" for the academic year ……. term ……. prescribed in the GTU curriculum.

Place:

Date:

Signature of Course Faculty **Head of the Department**

Program Outcomes (POs):

1. **Basic and Discipline specific knowledge:** Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

2. **Problem analysis**: Identify and analyze well-defined engineering problems using codified standard methods.

3. **Design/ development of solutions:** Design solutions for engineering well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

4. **Engineering Tools, Experimentation and Testing:** Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.

5. **Engineering practices for society, sustainability and environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices.

6. **Project Management:** Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well- defined engineering activities.

7. **Life-long learning:**Ability to analyze individual needs and engage in updating in the context oftechnological changes in the field of engineering.

Practical Outcome - Course Outcome Matrix

Pr. No.	Practical Outcome Title	CO1	CO2	CO3	CO4	CO5	CO6
1	Conduct an empathy exercise and create an empathy map for a chosen product/service.	✓		✓			✓
2	Plan and perform short user interviews; synthesize findings into personas and journey maps.	✓		✓			✓
3	Create user task flows and problem statements for the chosen mini-project.		✓	✓			
4	Perform a card-sorting activity and design a sitemap for the application.		✓	✓			
5	Develop low-fidelity wireframes for 3–4 key screens.		✓		✓		
6	Convert wireframes into mid-fidelity wireframes with interaction annotations.		✓		✓		
7	Design a style tile (typography, colors, buttons, icons) for the project.		✓		✓		
8	Build a component library (buttons, forms, navigation) in Figma.		✓		✓		✓
9	Develop a high-fidelity prototype (4–6 linked screens) in Figma.		✓		✓		✓
10	Conduct a usability test (3–4 participants) on the prototype and record findings.			✓		✓	✓
11	Revise prototype based on usability test results and prepare a final version.					✓	✓
12	Prepare a developer handoff package (export assets, create specs) and a simple HTML/CSS mockup.		✓		✓		✓

Industry Relevant Skills

1. Apply user-centered design principles through empathy mapping, personas, and journey mapping.
2. Conduct user research, task analysis, and usability testing to identify user needs and issues.
3. Design low, mid, and high-fidelity wireframes and interactive prototypes using industry tools.
4. Develop visual design skills including typography, color theory, layout, and accessibility.
5. Create reusable UI components and maintain design consistency through component libraries.
6. Evaluate and improve design solutions based on usability feedback and iteration.
7. Prepare professional design documentation and developer handoff artifacts.

Guidelines to Course Faculty

1. Follow an outcome-based approach by mapping each practical to PrOs and COs.
2. Demonstrate tools, techniques, and expected outputs before student execution.
3. Encourage real-world application selection and industry-oriented design thinking.
4. Emphasize design process, usability, and user focus over visual appearance alone.
5. Ensure proper documentation and professional presentation of practical work.
6. Provide timely feedback and guide students for design improvement and iteration.
7. Promote ethical research practices and accessibility considerations in all designs.

Instructions for Students

1. Study the practical objective and prerequisite concepts before attending the lab.
2. Follow the prescribed procedure and faculty instructions during practical sessions.
3. Use recommended tools and maintain organized design files and versions.
4. Document objectives, observations, screenshots, and outcomes in the lab manual.
5. Follow ethical practices and respect user privacy during research activities.
6. Submit practical work on time and incorporate faculty feedback.
7. Focus on learning the design process, teamwork, and problem-solving skills.

Continuous Assessment Sheet

Enrolment No: **Batch:**

Name: **Term:**

Sr. No.	Practical Outcome/Title of experiment	Page No.	Date	Marks (10)	Sign
1	Conduct an empathy exercise and create an empathy map for a chosen product/service.				
2	Plan and perform short user interviews; synthesize findings into personas and journey maps.				
3	Create user task flows and problem statements for the chosen mini-project.				
4	Perform a card-sorting activity and design a sitemap for the application.				
5	Develop low-fidelity wireframes for 3–4 key screens.				
6	Convert wireframes into mid-fidelity wireframes with interaction annotations.				
7	Design a style tile (typography, colors, buttons, icons) for the project.				
8	Build a component library (buttons, forms, navigation) in Figma.				
9	Develop a high-fidelity prototype (4–6 linked screens) in Figma.				
10	Conduct a usability test (3–4 participants) on the prototype and record findings.				
11	Revise prototype based on usability test results and prepare a final version.				
12	Prepare a developer handoff package (export assets, create specs) and a simple HTML/CSS mockup.				

Practical No. 1 Date: _____

A. Objective:

Conduct an empathy exercise and create an empathy map for a chosen product/service.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:

- Conduct an empathy exercise and create an empathy map for a chosen product/service.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Conduct an empathy exercise and create an empathy map for a chosen product/service.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

Empathy in design is the ability to understand and share the feelings, thoughts, and experiences of users.
It is the foundation of human-centered design because it allows designers to step into the users' shoes and
create products or services that truly meet their needs.

What is an Empathy Map?
An empathy map is a collaborative visualization used to articulate what we know about a particular type of user.
It externalizes user knowledge in order to create a shared understanding of user needs and to aid in decision-making.

Structure of an Empathy Map:
An empathy map is usually divided into four quadrants: Says, Thinks, Does, and Feels.

Steps to Create an Empathy Map:
1. Identify the target user.
2. Conduct research (interviews, surveys, observations).
3. Collect insights into what users say, think, do, and feel.
4. Fill in the quadrants and refine.

Example:
For a food delivery app, a user may *say* "I want quick delivery," *think* "Will my food be hot?", *do* track orders, and *feel* anxious or excited.

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?

Q2. Name one tool that can be used for this activity.

Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

1. Don Norman – The Design of Everyday Things
2. IDEO Design Kit: https://www.designkit.org/
3. Nielsen Norman Group: https://www.nngroup.com/
4. Figma Documentation: https://help.figma.com/

M. Assessment-Rubrics

No.	Criteria (Mapped to Syllabus &Practicals)	Excellent (70%>)	Average (30%> and <70%)	Needs Improvement(< 30%)	Marks Obtained
1	User-Centric Approach (Research, personas, task flow, usability focus)	Clear user understanding, task aligned with user needs	Partial user focus	No user consideration	3
2	Design & Interaction Quality (IA, wireframes, visuals, prototype, consistency)	Clear layout, logical flow, proper UI elements	Some clarity issues	Confusing or incomplete	3
3	Execution & Practical Outcome (Tool usage, completeness, iteration/testing)	Properly executed, complete as per task	Partially completed	Incomplete / incorrect	4
				Total:	
				Faculty sign with date:	

Practical No. 2 Date: _____

A. Objective:

Plan and perform short user interviews; synthesize findings into personas and journey maps.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:

- Plan and perform short user interviews; synthesize findings into personas and journey maps.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Plan and perform short user interviews; synthesize findings into personas and journey maps.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

User interviews are a research method used to gather insights into users' goals, behaviors, and challenges.
They help identify user needs directly from the source.

Types of Interviews:
- Structured (predefined questions)
- Semi-structured (flexible, guided)
- Unstructured (free-flowing conversations)

Synthesizing Findings:
After interviews, organize data into personas (fictional user representations) and journey maps (visualization of user experience steps).

Example:
Interviewing students about a library system may reveal pain points like difficulty finding books. Persona: "Anita, 21, frequent reader." Journey map: search → frustration → ask librarian → resolution.

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

1. Don Norman – The Design of Everyday Things
2. IDEO Design Kit: https://www.designkit.org/
3. Nielsen Norman Group: https://www.nngroup.com/
4. Figma Documentation: https://help.figma.com/

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3	Execution & Practical Outcome (Tool usage, completeness, iteration/testing)	Properly executed, complete as per task	Partially completed	Incomplete / incorrect	4
				Total:	
				Faculty sign with date:	

Practical No. 3 Date: _____

A. Objective:

Create user task flows and problem statements for the chosen mini-project.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Create user task flows and problem statements for the chosen mini-project.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Create user task flows and problem statements for the chosen mini-project.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

Task flows show how a user achieves a goal through a sequence of actions. A problem statement summarizes the challenge faced.

Why Task Flows?
They clarify the exact steps a user takes, highlight pain points, and help designers streamline processes.

Steps:
1. Define a key task (e.g., booking a ticket).
2. Break down into steps (search, select, pay, confirm).
3. Create a simple flow diagram.

Problem Statement:
A clear, concise description of the user's issue. Example: "Users struggle to track delivery status in real time."

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

1. Don Norman – The Design of Everyday Things
2. IDEO Design Kit: https://www.designkit.org/

3. Nielsen Norman Group: https://www.nngroup.com/
4. Figma Documentation: https://help.figma.com/

M. Assessment-Rubrics

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				Total:	
				Faculty sign with date:	

Practical No. 4 Date: _____

A. Objective:

Perform a card-sorting activity and design a sitemap for the application.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Perform a card-sorting activity and design a sitemap for the application.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Perform a card-sorting activity and design a sitemap for the application.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

Card sorting is a UX method to design or evaluate the information architecture of a site/app by letting users group items logically.

Types of Card Sorting:

- Open (users create categories)
- Closed (categories are predefined)
- Hybrid (mix of both)

Sitemaps:
A sitemap is a diagram that shows the hierarchy and organization of screens/pages.

Example:
For an e-commerce app, users may group ‘Shirts, Pants, Shoes’ under ‘Clothing’. This informs how the sitemap is structured.

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

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Practical No. 5 Date: _____

A. Objective:

Develop low-fidelity wireframes for 3–4 key screens.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Develop low-fidelity wireframes for 3–4 key screens.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Develop low-fidelity wireframes for 3–4 key screens.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

Wireframes are simplified visual guides that represent the structure of an interface.

Low-Fidelity Wireframes:
- Simple sketches (pen & paper or digital)
- Focus on layout, not visuals
- Useful for early brainstorming

Key Components:
- Navigation placement
- Content blocks
- Buttons

Example:
A banking app low-fidelity wireframe may show a home screen with login, balance display, and quick transfer options.

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

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				Total:	
				Faculty sign with date:	

Practical No. 6 Date: _____

A. Objective:

Convert wireframes into mid-fidelity wireframes with interaction annotations.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Convert wireframes into mid-fidelity wireframes with interaction annotations.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Convert wireframes into mid-fidelity wireframes with interaction annotations.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

Mid-fidelity wireframes are more detailed versions of low-fidelity ones. They use grayscale, standard UI components, and include interaction annotations.

Interaction Annotations:

Notes describing how elements behave (e.g., "On click → navigate to checkout").

Benefits:
- Communicate interaction design
- Provide developers with clear guidance
- Allow testing before visuals are finalized

Example:
In a shopping cart wireframe, an annotation might read: "Remove item → update cart total immediately."

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

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M. Assessment-Rubrics

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3	Execution & Practical Outcome (Tool usage, completeness, iteration/testing)	Properly executed, complete as per task	Partially completed	Incomplete / incorrect	4
				Total:	
				Faculty sign with date:	

Practical No. 7 Date: _____

A. Objective:

Design a style tile (typography, colors, buttons, icons) for the project.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Design a style tile (typography, colors, buttons, icons) for the project.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Design a style tile (typography, colors, buttons, icons) for the project.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

A style tile is a design deliverable that defines the visual language of a project.

Key Elements:
- Typography (fonts, headings, body text)

- Color palette (primary, secondary, accents)
- Buttons and form styles
- Iconography

Why Important?
Ensures design consistency across the project and serves as a reference point for all team members.

Example:
For a health app: calm blue palette, clean sans-serif fonts, rounded buttons.

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

1. Don Norman – The Design of Everyday Things
2. IDEO Design Kit: https://www.designkit.org/
3. Nielsen Norman Group: https://www.nngroup.com/
4. Figma Documentation: https://help.figma.com/

M. Assessment-Rubrics

No.	Criteria (Mapped to Syllabus &Practicals)	Excellent (70%>)	Average (30% > and <70%)	Needs Improvement(< 30%)	Marks Obtained
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2	Design & Interaction Quality (IA, wireframes, visuals, prototype, consistency)	Clear layout, logical flow, proper UI elements	Some clarity issues	Confusing or incomplete	3
3	Execution & Practical Outcome (Tool usage, completeness, iteration/testing)	Properly executed, complete as per task	Partially completed	Incomplete / incorrect	4
				Total:	
				Faculty sign with date:	

Practical No. 8 Date: _____

A. Objective:

Build a component library (buttons, forms, navigation) in Figma.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:

- Build a component library (buttons, forms, navigation) in Figma.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Build a component library (buttons, forms, navigation) in Figma.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

A component library is a collection of reusable UI elements (buttons, forms, navigation bars, etc.) created in Figma or similar tools.

Benefits:

- Consistency across designs

- Faster design process
- Easy collaboration

Steps:
1. Identify commonly used elements.
2. Create them in Figma.
3. Organize with naming conventions.
4. Reuse in multiple screens.

Example:
A library may include primary/secondary buttons, dropdown menus, text inputs, and navigation tabs.

H. Resources/Equipment Required
1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed
Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps
Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.
Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions
1. Don Norman – The Design of Everyday Things
2. IDEO Design Kit: https://www.designkit.org/

3. Nielsen Norman Group: https://www.nngroup.com/
4. Figma Documentation: https://help.figma.com/

M. Assessment-Rubrics

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3	Execution & Practical Outcome (Tool usage, completeness, iteration/testing)	Properly executed, complete as per task	Partially completed	Incomplete / incorrect	4
				Total:	
				Faculty sign with date:	

Practical No. 9 Date: _____

A. Objective:

Develop a high-fidelity prototype (4–6 linked screens) in Figma.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Develop a high-fidelity prototype (4–6 linked screens) in Figma.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Develop a high-fidelity prototype (4–6 linked screens) in Figma.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

A high-fidelity prototype is an interactive simulation of the product, closely resembling the final design.

Features:

- Detailed visuals (colors, typography, icons)
- Clickable interactions
- User flow simulation

Why Important?
Allows realistic usability testing and stakeholder buy-in.

Example:
A food app prototype with clickable 'Add to Cart', animated transitions, and full navigation.

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

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3	Execution & Practical Outcome (Tool usage, completeness, iteration/testing)	Properly executed, complete as per task	Partially completed	Incomplete / incorrect	4
				Total:	
				Faculty sign with date:	

Practical No. 10 Date: _____

A. Objective:
Conduct a usability test (3–4 participants) on the prototype and record findings.

B. Expected Program Outcomes (POs)
Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:
This practical is expected to develop the following skills:
- Conduct a usability test (3–4 participants) on the prototype and record findings.

D. Expected Course Outcomes (COs)
Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)
Conduct a usability test (3–4 participants) on the prototype and record findings.

F. Expected Affective Domain Outcomes (ADOs)
- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:
Usability testing evaluates a prototype by observing users as they attempt tasks.

Methods:
- Think aloud (users verbalize thoughts)
- Task-based (complete set goals)

- Remote or in-person

Steps:
1. Recruit participants (3–4 minimum).
2. Assign realistic tasks (e.g., “Book a ticket”).
3. Observe success, time, and errors.
4. Record findings.

Outcome:
Identify usability issues and gather improvement suggestions.

H. Resources/Equipment Required
1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed
Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps
Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.
Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

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				Total:	
				Faculty sign with date:	

Practical No. 11 Date: _____

A. Objective:

Revise prototype based on usability test results and prepare a final version.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Revise prototype based on usability test results and prepare a final version.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Revise prototype based on usability test results and prepare a final version.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

After usability testing, prototypes are revised to fix issues and improve user experience.

Steps:
1. Analyze test results (e.g., where users failed/confused).

2. Prioritize issues by severity.
3. Modify design accordingly.
4. Retest if necessary.

Example:
If users struggled with checkout steps, simplify flow by reducing form fields.

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

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				Total:	
				Faculty sign with date:	

Practical No. 12 Date: _____

A. Objective:

Prepare a developer handoff package (export assets, create specs) and a simple HTML/CSS mockup.

B. Expected Program Outcomes (POs)

Basic and Discipline specific knowledge: Apply design thinking and user experience principles to solve practical problems.

Problem analysis: Identify and analyze user needs using structured research methods.

Design/ development of solutions: Design solutions for well-defined user interface problems and assist with creating usable digital products.

Project Management: Use design management principles individually, as a team member or leader to manage design projects and communicate effectively.

Life-long learning: Ability to analyze individual needs and engage in updating skills in the context of technological changes.

C. Expected Skills to be developed based on competency:

This practical is expected to develop the following skills:
- Prepare a developer handoff package (export assets, create specs) and a simple HTML/CSS mockup.

D. Expected Course Outcomes (COs)

Students will be able to apply UX design principles and practices to real-world problems.

E. Practical Outcome (PrO)

Prepare a developer handoff package (export assets, create specs) and a simple HTML/CSS mockup.

F. Expected Affective Domain Outcomes (ADOs)

- Follow ethical research and design practices.
- Work as a leader or a team member in collaborative settings.
- Demonstrate empathy and respect for users during design activities.
- Maintain discipline, time management, and effective communication.

G. Prerequisite Theory:

A developer handoff package ensures smooth transition from design to development.

Contents:
- Exported assets (icons, images, logos)
- Design specs (sizes, colors, spacing)
- Component definitions
- HTML/CSS mockup (for structure)

Why Important?
Prevents miscommunication, saves time, and ensures final product matches design.

Example:
Providing a CSS file with button styles: `.btn-primary { background: #0066FF; padding: 10px; }`

H. Resources/Equipment Required

1. Computer/Laptop with internet access
2. Design Software: Figma (preferred), or equivalent
3. Supporting tools: Pen, Paper, Sticky Notes (for brainstorming/card sorting)
4. Reference material: Design Thinking resources, UX/UI guidelines

I. Safety and necessary Precautions followed

Ensure ethical research and design practices. Respect user privacy and data confidentiality.

J. Procedure / Activity Steps

Step 1: Read the objective and requirements carefully.
Step 2: Perform the given activity as instructed.
Step 3: Record observations, findings, and design artifacts.
Step 4: Summarize outcomes and prepare documentation.

Note: *(Attach practical outcomes after this page)*

K. Practical related Quiz.

Q1. What is the purpose of this practical?
Q2. Name one tool that can be used for this activity.
Q3. How does this activity contribute to user-centered design?

L. References / Suggestions

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DI04016041 - UI & UX Design

(Lab manual)

Prepared By

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