Elegant and Effective Website Design with UI and UX

Trainer Guide

Elegant and Effective Website Design with UI and UX Trainer Guide

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The Trainer Guide for Elegant and Effective Website Design with UI and UX provides an understanding of how Responsive Design works and highlights the importance of UI design. This book also provides the learning process of creating a perfect user experience design for all kinds of users and also on how to create a responsive Website that can be viewed on devices with differing screen sizes and characteristics such as retina displays. The book introduces learners to Figma tool for UI and UX design.

The faculty/trainer should teach the concepts in the theory class using the slides. This Trainer's Guide will provide guidance on the flow of the module and also provide tips and additional examples wherever necessary. The trainer can ask questions to make the session interactive and also to test the understanding of the students.

The knowledge and information in this book is the result of the concentrated effort of the Design Team, which is continuously striving to bring to you the latest, the best and the most relevant subject matter in Information Technology. As a part of Aptech's quality drive, this team does intensive research and curriculum enrichment to keep it in line with industry trends and learner requirements.

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Session 1: Introduction to User Interface Design

1.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

1.1.1 Teaching Skills

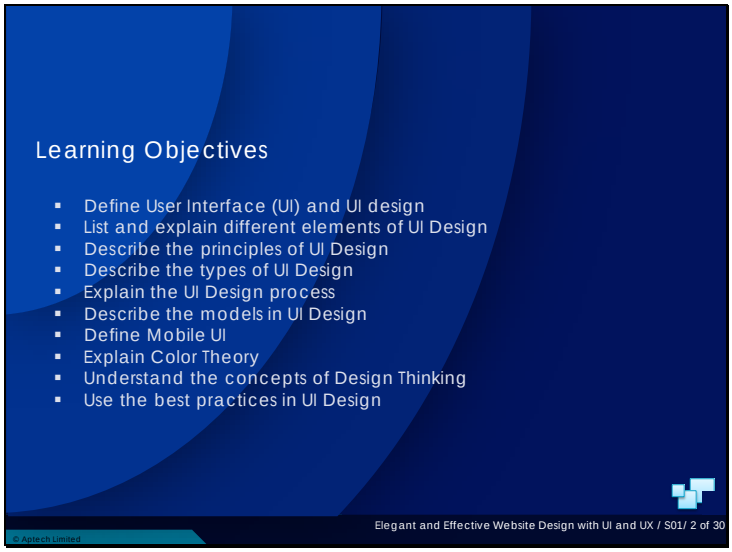
To teach this session, you should be well versed with User Interface and User Experience concepts and design. You should be familiar with challenges that are posed to UI/UX implementation.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use Slides and LCD projectors.

In-Class Activities

Follow the order given here during In-Class activities.

Slide 2

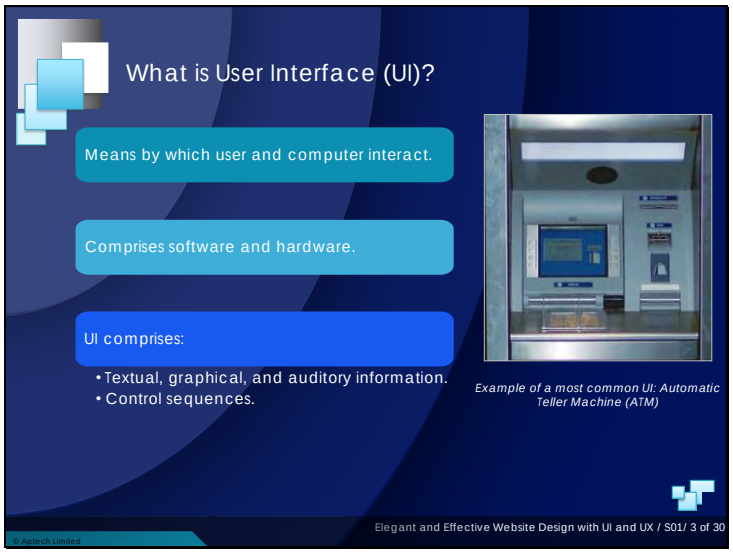


Instructions to the trainer:

- Give students a brief overview of the current session through the session objectives listed in Slide 2.

1.2 In-Class Explanations

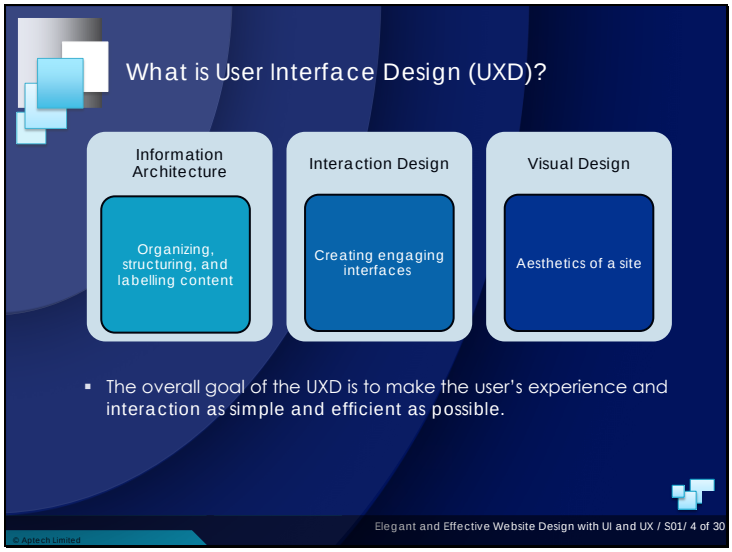
Slide 3



Instructions to the trainer:

- Show students Slide 3 and begin the session with an introduction to User Interface (UI).
- Explain that UI is the means by which a user and a computer system interact. It comprises both software and hardware components.
- It is the point at which users interact with a Website or application.
- Ask students how they access WhatsApp on their phone. Then explain that most of us are now familiar with the green icon that signifies WhatsApp. Thus, UI comprises icons, menus, shortcuts, gesture movements, and all those components that help a person to interact or command a computer, or handheld device.
- Typically, the UI comprises:
    - Textual, graphical, and auditory information the program presents to the user.
    - Control sequences that the user employs to control the program.
- For more information about user interface, refer to the following link: https://searchapparchitecture.techtarget.com/definition/user-interface-UI

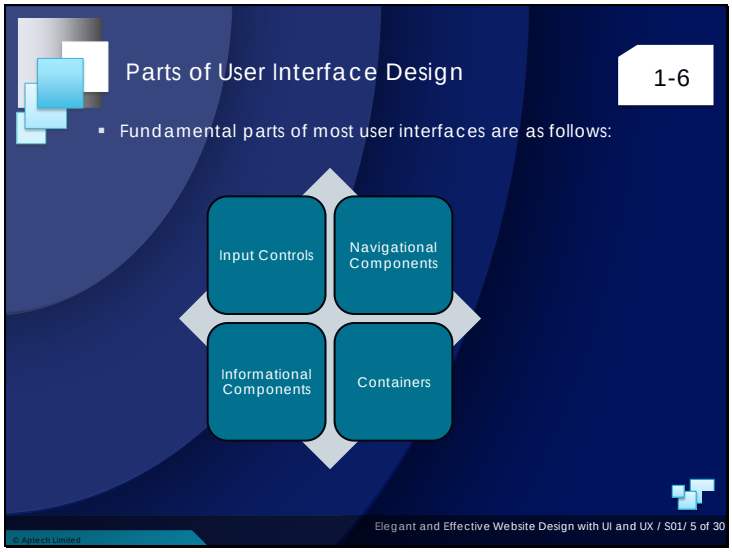
Slide 4



Instructions to the trainer:

- Show students Slide 4 and ask them what they think is User Interface Design?
- Tell students that User Interface Design is a process that designers use to build interfaces of Websites and applications. A user interface can be a graphical user interface (GUI) or a voice-based user interface, such as Google assistant, Alexa, or Siri.
- Therefore, User Interface Design is the design of Websites, appliances, computers, and software applications.
- Explain that UI design brings together the concept from:
    - Information Architecture: It focuses on organizing, structuring, and labelling content in an effective and sustainable way.
    - Interaction Design: It focuses on creating engaging interfaces with well thought out behaviors.
    - Visual Design: It focuses on the aesthetics of a site and its related materials.

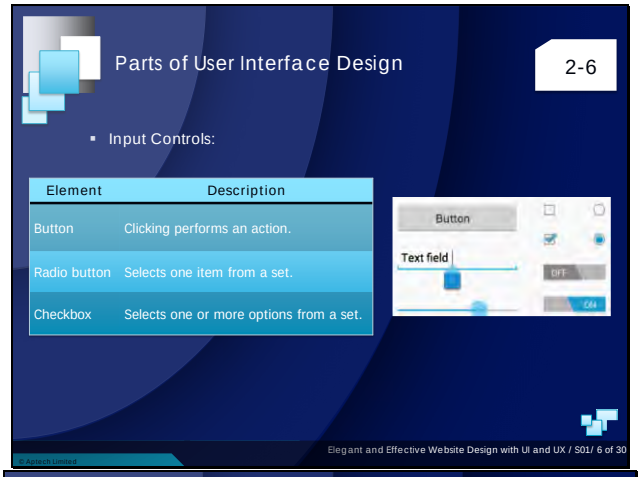
Slide 5

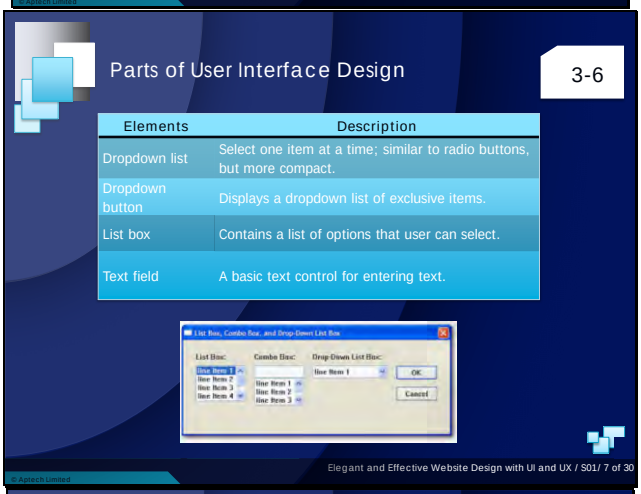


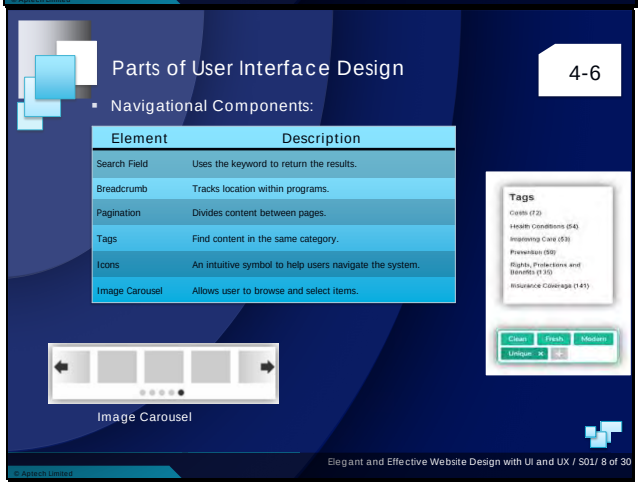
Instructions to the trainer:

- Using Slide 5, explain different sections in user interface design.
- Explain that when designing an interface, the designer must be consistent and predictable in the choice of interface elements. This helps users become familiar with the elements in the Website or application, which, in turn, helps them complete tasks efficiently with ease.
- The fundamental parts of most user interfaces are as follows:
    - Input Controls: These are elements such as checkboxes, radio buttons, dropdown lists, list boxes, buttons, toggles, text fields, and date field.
    - Navigational Components: These are elements such as breadcrumb, Slider, search field, pagination, Slider, tags, and icons.
    - Informational Components: These are elements such as tooltips, progress bar, notifications, and message boxes.
    - Containers: An accordion is a good example of a container. It is a vertically stacked list of items with show/ hide functionality. When a label is clicked, it expands the section showing the content within. When clicked again, the section closes to a compact form.
- For more information on user interface elements, refer to the following link: https://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html

Slides 6 to 8







Instructions to the trainer:

- Show students Slide 6 to 8 and tell them that we will discuss each part in detail.
- Begin with Input Control and tell students that input controls define the way the system captures information.

- These are the interactive components of the user interface that guides users through the product, or enables them to make choices based on the task they want to complete.
- In the backend, each input control supports a specific set of input events so that the event can be handled when the user enters text or clicks a button.
- Some common controls used in applications are buttons, radio buttons, checkboxes, toggle buttons, and spinners.
    - Buttons can be pushed or clicked to perform an action.
    - Radio buttons enable users to select specific items from a set of items.
    - Checkboxes can be used as optional elements that toggle between on/off.
    - Spinners are dropdown lists containing values, from which the user selects the required value.
    - Dropdown lists are similar to a list box with an arrow indicating that the list will expand on clicking; and the user can select one value from the list. When a dropdown list is inactive, it displays a single value.
    - In contrast, a list box enables the user to select multiple values from the list till the user moves to the next step.
- Show students the image on the Slide 7 to differentiate between a list box, and dropdown list.
    - Text fields are editable spaces to enter information. These are spaces where the user enters text; for example, the Google search bar, or entering information in forms.
- Tell students that these are types of commonly used input controls used in application interfaces. Next, we will learn about navigational components.
- For more information about input controls used in UI, refer to the following link: https://stuff.mit.edu/afs/sipb/project/android/docs/guide/topics/ui/controls.html
- Using Slide 8, explain to students that navigational components are also fundamental to a user interface.
- Navigational components provide the way for the users to tell the system what to do. In terms of UI design, navigation is one of the basic functions that facilitates the usability of a product. Therefore, navigation can be defined as the set of actions and techniques that guides users throughout the application, and enables them to fulfill their goals and successfully interact with the product. Efficient navigation has a great impact on setting positive user experience: users use Websites and applications with a level of expectation, and it is the designer's task to set the best route to meeting the expectations.
- Some commonly used navigational components are:
    - Search fields enable users to enter a keyword or phrase and submit it to search the index with the intention of getting back the most relevant results. For example, Google search, where the search bar includes a text field and the search button.
    - Breadcrumbs are navigation aids that allow the user to track the location within programs. For example, when you search for a file in your computer, you are likely to see the location on the header: My documents > New Folder > ABC > xyz.word. This trail is usually clickable and takes you back to the origin.
    - Paginations divide content on screen into discrete pages. This allows the user to skip pages if they are looking for specific content or move through content in an orderly manner.

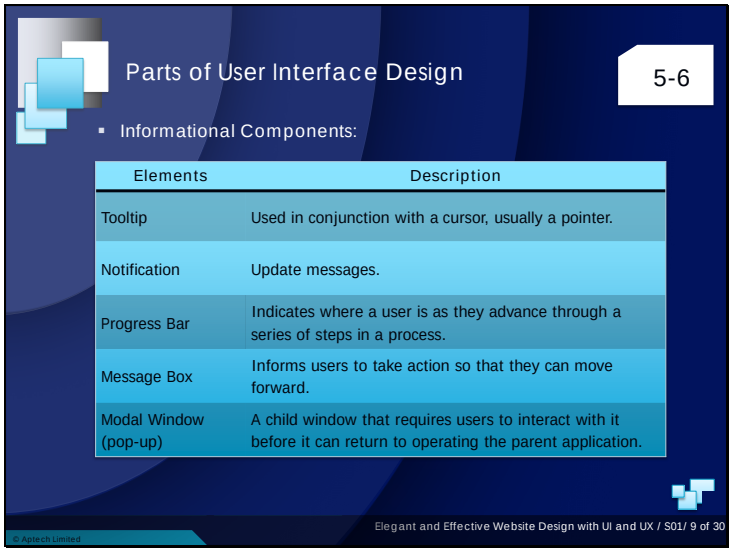
- Other commonly used elements are:
    - Tags allow users to find content in the same category. For example, if a user searches for a specific word, all pages containing the word will appear.
    - Icons are simplified images that serve as an intuitive symbol used to help users navigate the system. They indicate the function, and are linked to the function they perform. For example, clicking the printer icon displays the print page.
    - Image carousel allows the user to browse and select a set of items. Thus, in an image carousel, images appear in the form of a Slideshow with a forward and backward arrow so that the user can move backward or forward to view the image again rather than waiting for it to appear on its own. The images are usually hyperlinked; and clicking the image results in the action.
- For more information on navigational components, refer to the following link: https://www.section.io/engineering-education/how-to-make-an-image-carousel-for-your-website/.

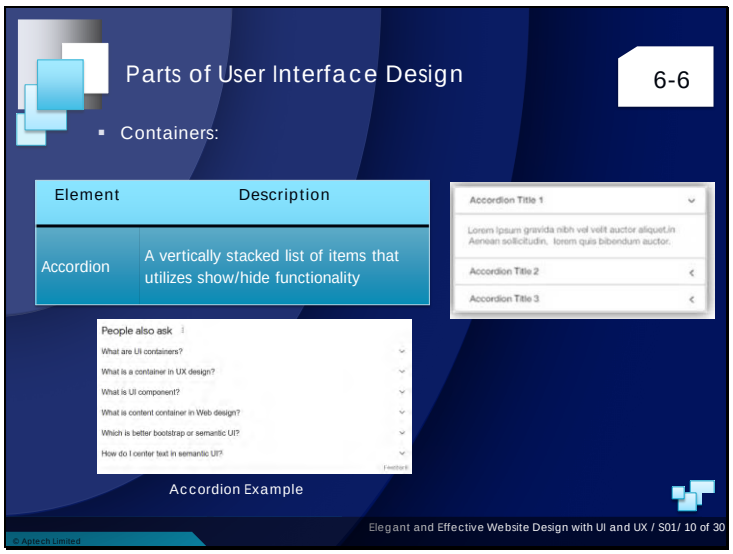
In-Class Question

Ask students following question. Wait for a response before you give the answer.

Question: A student has moved through many pages in a Website and wants to return to the home page. Which navigational feature can help in completing the task?
Answer: Breadcrumbs

Slide 9 and 10





Instructions to the trainer:

- Show students Slides 9 and 10 and tell them that we have covered input controls and navigational components. Now we will discuss about the informational components.
- Informational components provide information to the user to guide them through the application or Website. They appear in the form of tooltips, notifications, progress bars, message boxes, and modal windows.
  - Tooltips are common user interface elements used in conjunction with a cursor, usually a pointer. They appear in the form of text message when the user hovers over a field, button or screen element. Tooltips guide the user in performing tasks, without the necessity to understand a particular function. For example, when setting a password, a text message

indicates that the password must have at least eight characters, including an alphabet in CAPS, a number and a special character.

- Notifications are update messages that announce something new for the user to see. They mostly indicate messages such as, an error or warning, or a successful completion of task.
- Progress bars are informational messages that indicate where a user is as they advance through a series of steps in a process. They also indicate the amount of time remaining till an action is completed. Thus, progress bars are not clickable; they are indicative.
- Message boxes are small windows that provide information to users so that they take action before they can move forward. It displays a piece of information to the user. The user cannot type anything because it is only informational. However, it may include buttons for the user to make a choice. For example: When deleting something, the message asks the user to confirm whether they really want to proceed with the action. Only when the user confirms, the task is completed. Hence, such boxes are best suited for repetitive tasks.
- Modal windows or dialog boxes are messages that require users to complete and close the window before continuing with the original screen. These dialog boxes are best used for critical messages and must be completed before proceeding with other tasks. Dialogs must be used sparingly because they are interruptive and appear suddenly. Their sudden appearance forces users to stop their current task and focus on the dialog content.

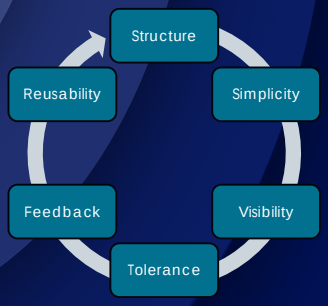
- For more information about informational components, refer to the following link: https://uxplanet.org/5-essential-ux-rules-for-dialog-design-4de258c22116.
- Tell students that we will now proceed to the next type of UI elements, which are Containers.
- Containers are designed to contain page elements to a reasonable maximum width based on the size of a user's screen. Accordion is the most common type of container used in applications and Websites. In this format, information appears within boxes that are expandable. Using such a format organizes information in a clear way so that user is not compelled to read paragraphs and take decisions easily. For example, when we search for information on Google search, we can view links to the relevant information but a section called ‘People also ask:’ also appears. Show students the example on Slide 10.
- For more information about Containers, refer to the following link: http://help.indigodesigned.com/working-with-ui-elements/using-containers.
- This completes the sections of UI design.

Slides 11 to 13

Dialogues/Principles and Attributes of User Interface Design

1-7

- The UI design principles include:



Dialogues/Principles and Attributes of User Interface Design

2-7

- Structure Principle
  - About overall UI architecture.
  - Design should be clear: visually, theoretically, linguistically.
  - Must provide paths to useful information.

Example of a clearly structured UI
Image Courtesy: https://www.amazon.com

Dialogues/Principles and Attributes of User Interface Design

3-7

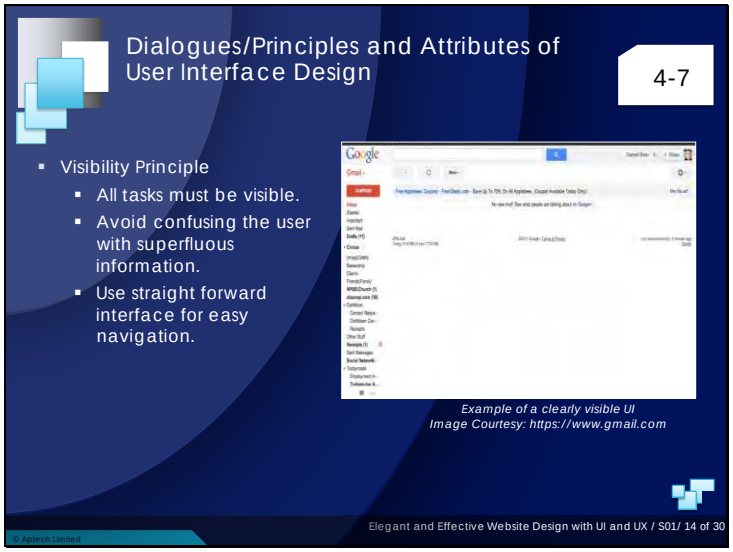
- Simplicity Principle
  - Simple to learn and simple to use design.
  - Include only important elements.
  - Make common tasks easy.
  - Provide shortcuts to longer procedures.

Example of a simple UI
Image Courtesy: http://www.apple.com/ipad/

Instructions to the trainer:

- Using Slides 11 to 13, tell students that we will now learn about the principles and attributes of UI design.
- Ask students why principles of UI design are important. Wait for an answer and then, tell them that UI design principles focus on improving the quality of user interface design. Therefore, the fundamental of UI is to place the user in control of the interface, reduce the cognitive load, and make them comfortable to interact with the product.
- For more information about the principles of UI design, refer to the following link: https://uxplanet.org/top-ui-design-principles-to-keep-in-mind-bfb3ad8790c6.
- Using Slide 12, say that first is the Structure principle that is concerned with the overall user interface architecture. It supports the theory that the design of the interface should be visually, theoretically, and linguistically clear. The interface should provide clear and user-specific paths to useful and relevant information.
- The idea is for the user to find information where he/she expects it to be located. Thus, the interface must be well organized so that the user does not feel lost or feel confused about navigational aspects. For example, if the user requires the contact details, it should be available in the Contact Us page.
- Some of the techniques that are applicable here include grouping logically connected items so that they are visually organized. Links to important sections of the Websites and easy access to information through page navigation can also be used. Keeping the screen uncluttered, ensuring proper flow of actions, and visuals in an orderly manner add to enhanced user experience.
- The Amazon Website is an example of a clearly structured UI. Discuss with the students about why the Website is considered structured.
- Using Slide 13, say that next is the Simplicity principle, which focuses on the simplicity of design.
  - The design should be simple to learn and simple to use. This means that a new user should be able to navigate the Website or application with the same ease as an old user.
  - The application or Website should include only the important elements of communication. That is, the interface design should be easy to understand; complex and unfamiliar elements will lead to complexity and difficulty in understanding.
  - It should also make common tasks simple to do. Shortcuts can be added for procedures that have multiple steps. If a task is complex and difficult, break it into simpler steps so that user is not burdened with numerous steps and loses way in the complexity.
  - The communication should be clear so that the user can understand the message and take actions accordingly. Language preferences can be set according to region so that the product can cater to users everywhere.
  - Avoid cluttering the interface with unnecessary information. Keeping empty space on screen helps the user focus on important things and achieve the goal quickly and efficiently.

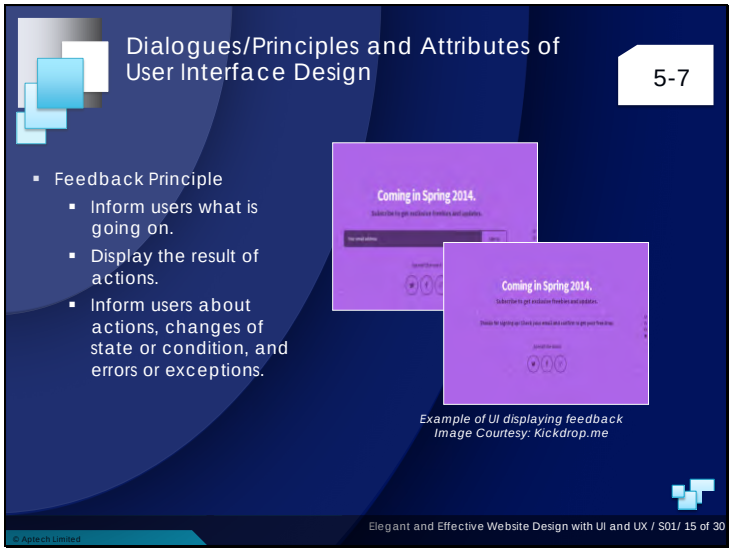
Slide 14



Instructions to the trainer:

- Using Slide 14, say that the Visibility principle emphasizes on the important elements.
  - This means that all the elements on the interface, such as information and functionalities must be visible to the user.
  - The UI design should make all required options for a given task visible without confusing the user with superfluous information.
  - It must be very straight forward to let users easily comprehend the interface and navigate though it more efficiently.
- Ask students about the ways in which visibility can be increased on the interface. Wait for an answer and then, explain that font size, colors, space, and removing redundant information are all ways to increase visibility of necessary information.

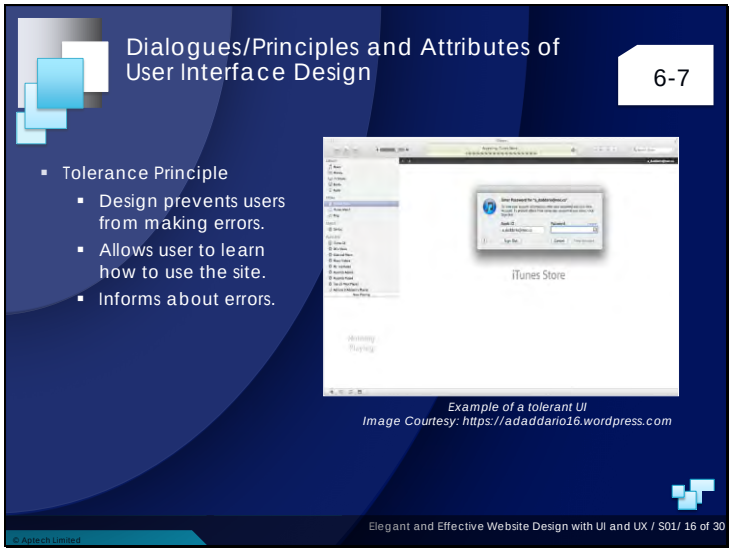
Slide 15



Instructions to the trainer:

- Show Slide 15. The Feedback principle is based on the premise that every action has a reaction.
  - The UI design should clearly inform users what is going on and show them the result of their actions.
  - It should also inform users about the actions, changes of state or condition, and errors or exceptions that they will face on performing particular actions.
  - The feedback principle is important because it informs the user that an action has been performed. More so, when an action has been unsuccessful or incomplete; which also includes troubleshooting. The user must receive adequate guidance in situations where the action has been unsuccessful.
  - For example, if a user is downloading a file, a progress bar must display the progress of download along with file size, and the time remaining for the complete file to download.
- Show students the image on the Slide 15: it displays the confirmation message of a subscription.

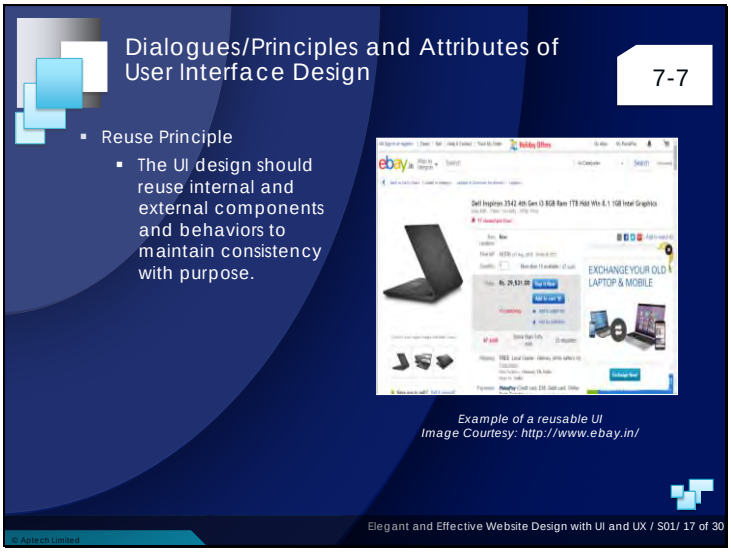
Slide 16



Instructions to the trainer:

- Show students Slide 16. The Tolerance principle guides the user when he/she has made a mistake.
    - It emphasizes the importance of designing the user interface to prevent users from making errors.
    - It allows the user to learn how to use the site and inform them of errors.
    - The Tolerance principle provides hints to the user so that tasks can be accomplished easily.
    - For example, if a user has entered incorrect information in the text field, the UI must prompt the user with the correct workaround so that the user can complete the task.
    - Another way to incorporate the principle is to add redo buttons or make the error reversible so that the user is relieved after reading the error message.
    - In essence, it makes them comfortable when using the product.

Slide 17



Instructions to the trainer:

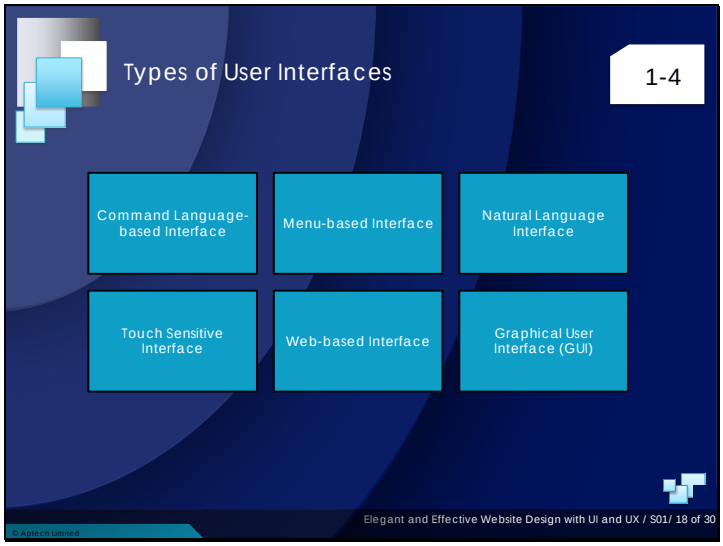
- Show Slide 17. The Reuse principle states that neither information nor UI elements should be duplicated.
    - It is always better to reuse templates so that UI elements, fonts, headers, and colors remain consistent throughout the Website or application.
    - Moreover, ensure that a user does not repeat an action more than once. For example, if a user must register on a shopping Website to make a purchase, make sure that the user does not have to enter the details again during checkout. Since the information is already available, it can be reused so that the billing address is prepopulated during checkout. This saves time and effort for the user.
- For more information about principles of design, refer to the following link: https://www.interaction-design.org/literature/topics/design-principles

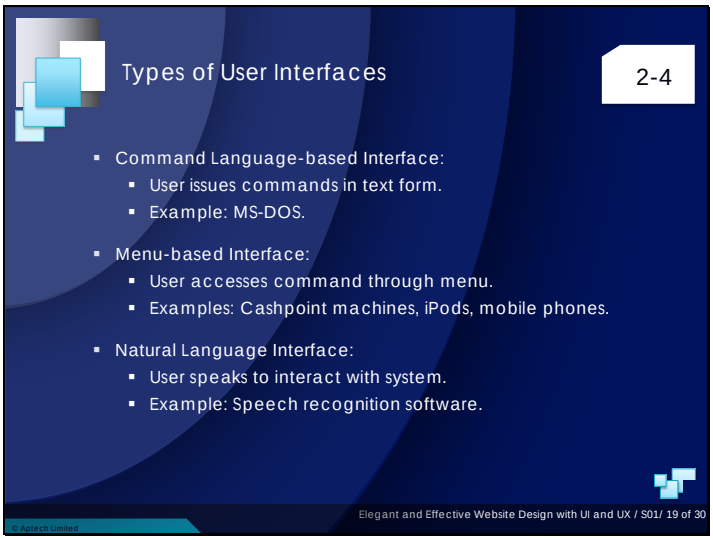
In-Class Question

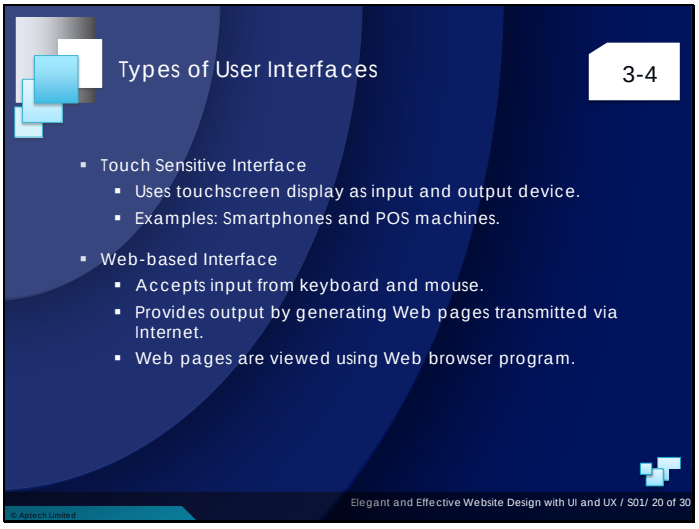
Ask students following question. Wait for a response before you give the answer.

Question: Which design principle focuses on making the user comfortable with using a product?
Answer: Tolerance principle

Slides 18 to 20







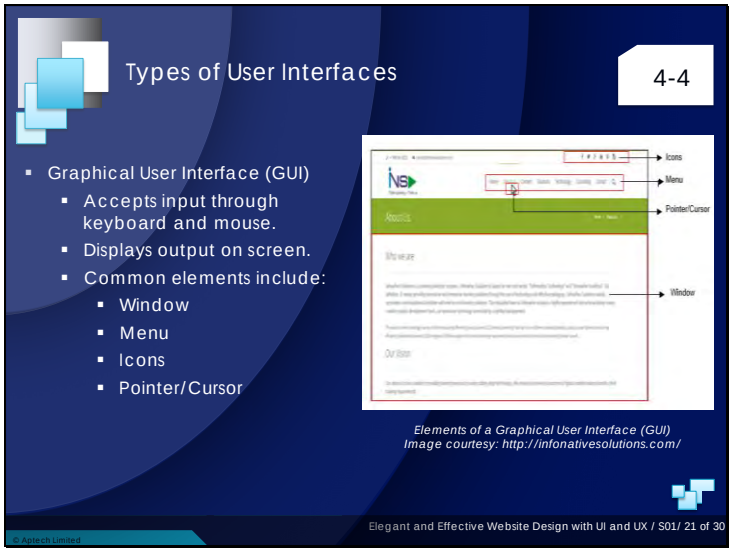
Instructions to the trainer:

- Using Slides 18 to 20, recall that UI is the mode in which users interact with a product (Website, application, electronic devices, and so on).
- UI makes the exchange between users and machines possible. It is important to meet user expectations and support the functionality of a product. Without it, this vital form of communication ceases to exist.
- User interfaces can be classified into six categories. Read out the categories on the Slide.
- Each category is described:

  - The first type of UI is Command Language-based interface or CLI. It is a means of interacting with a computer program where the user issues commands to the program in the form of successive lines of text. The user types the instruction in the command line to retrieve a host of other commands. This form of communication is now limited to programming, and to those users who are well-versed in programming language. CLI may be slightly complex for beginners, whereas experts in CLI can work much faster.
  - Menu-based interface allows the user to access command through the menu. For example, when we visit a cashpoint machine, the home screen provides a variety of options for us to choose from; this is the menu. Another example we can relate to is at McDonalds; which now has a touchscreen menu kiosk for selecting items rather than standing in the queue and thinking about what to order. Using menus is an easy way to accomplish tasks without remembering a list of commands. Moreover, the options on a menu are often self-explanatory. However, the options on a menu may be limited and can be a lengthy procedure, especially if multiple menus are nested within the main menu.
  - Natural Language interface allows the user to speak in his normal everyday language in order to interact with the system rather than using GUI or any computer language such as CLI. In this type of interface, the user enters responses to questions asked by the computer. The questions appear on the monitor or screen and the answers are entered via the keyboard. Such an interface is called 'natural language' because the user and the computer converse with each other. An example where such an interface would be used is speech recognition software. Natural language interfaces are commonly found in gaming situations and robotics. Smart assistants such as Alexa and Siri, predictive text, search results on Google, language translation, and digital phone calls are all examples of natural language interface.
  - For more information about types of user interfaces, refer to the following link: https://theteacher.info/index.php/systems-software/notes/4623-types-of-user-interface.
  - Show Slide 20. Touchscreen GUIs use a touchscreen display as a combined input and output device. They are similar to regular GUIs but differ in usage. Touchscreen GUIs can be operated using fingers or a stylus pen to select icons and perform tasks, rather than a keyboard or mouse. Touchscreen GUIs are common in most handheld devices, such as smartphones, tabs, and medical instruments (BP monitors and glucometers). Touchscreen GUI is beneficial because it allows the freedom to interact with the device anywhere, free of any peripheral attachments.

- Web-based interface accepts the input from the keyboard and mouse and provides output by generating Web pages which are transmitted via the Internet. These Web pages are viewed by the user using a Web browser program. Thus, the interaction between a user and software running on a Web server is done by a Web interface. The most common Web applications are email, instant messaging, online document sharing, social media, and online shopping; all of which we use in our daily lives.

Slide 21



Instructions to the trainer:

- Show Slide 21. UI accepts inputs through the computer keyboard and mouse and displays the final graphical output on the computer screen. This is the most familiar interface used today. GUIs are easy to use because they are self-explanatory. Similar icons and elements are used so that users are familiar with the interface. Multiple instances of applications with GUI can be run simultaneously. Although this consumes a large amount of memory, it can be overcome by increasing the storage space.

In-Class Question

Ask students following question. Wait for a response before you give the answer.

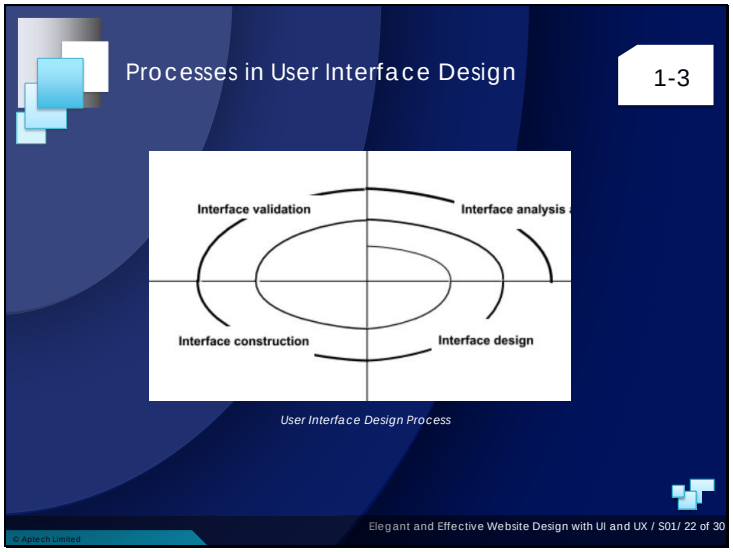
Question: I want to find out the IP address of my computer. Which type of interface must I use?
Answer: Command Line Interface (CLI)

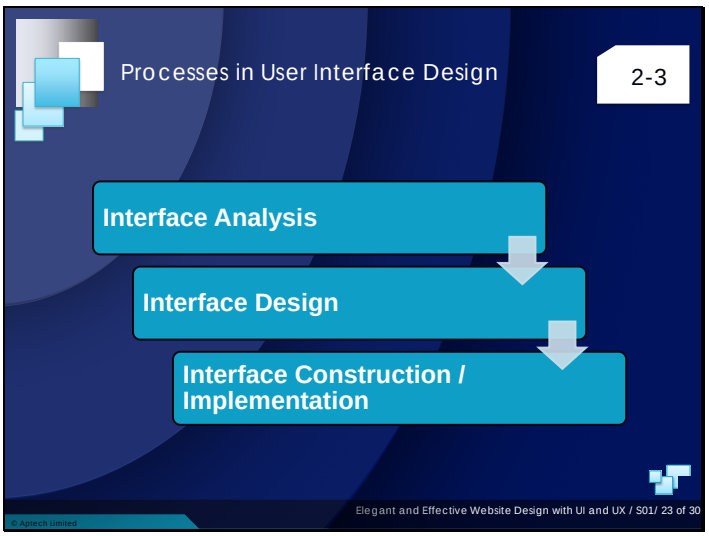
- The UI development process encompasses four distinct framework activities.
- The first step is Interface Analysis. It involves understanding:
  - End-users who will interact with the system through the interface - Who will use the interface?
  - Tasks that end-users would have to perform to do their work – Why is the interface required?
  - Content that will be presented as a part of the interface - What information will be exchanged?

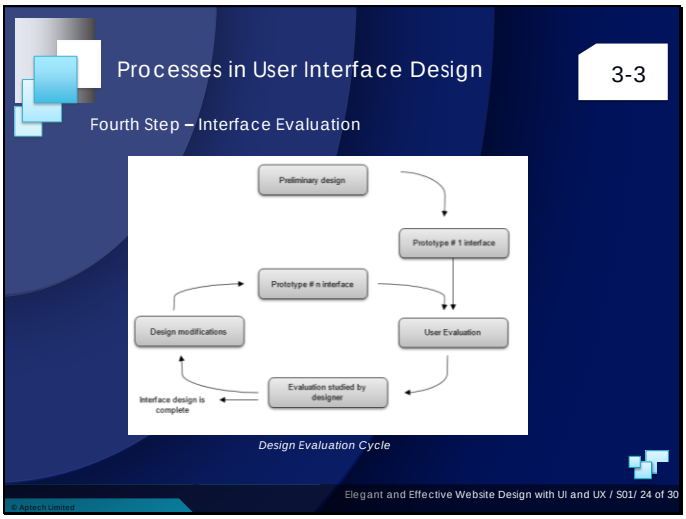
- Environment in which these tasks will be conducted – When, where, and how information will be exchanged.

- The second step is Interface Design.
  - It involves the commencement of interface design activity.
  - In this stage, designers build interfaces for devices or products and focus more on the look-and-feel and style aspects. This is because designs should be easy to understand and pleasurable to use.
- The third step is Interface Construction/Implementation.
  - It involves implementation of the design model as a prototype. A prototype is a dummy model of the final product. In this phase, the designer integrates all the elements of product, such as visuals, navigational components, screen elements, and interactions to present a near-final product for trial.

Slides 22 to 24



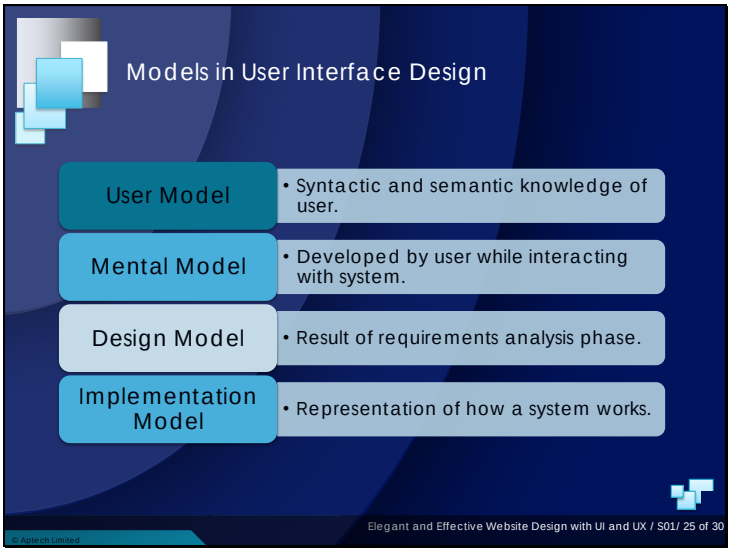




Instructions to the trainer:

- Using Slides 22 to 24, inform students that we will now learn about the processes used in UI design.
- The UI development process is repetitive and can be represented using a spiral model. The process encompasses four distinct framework activities.
    - Interface analysis
    - Interface design
    - Interface construction
    - Interface validation
- For more information about UI design processes, refer to the following link: https://aufaitux.com/blog/ui-ux-design-process/.
- The last step is Interface Evaluation, which involves evaluation of the design prototype to determine whether it meets the requirements of the user.
    - The aim of UI evaluation is to make the product more usable.
    - It should also be easy to learn and intuitive for the user.
    - Usability testing is a common evaluation technique that learners use to test the product.
- For more information, refer to the following link: https://www.cronj.com/blog/user-interface-ui-design-process-in-graphic-design/#UI_Design_Process.

Slide 25



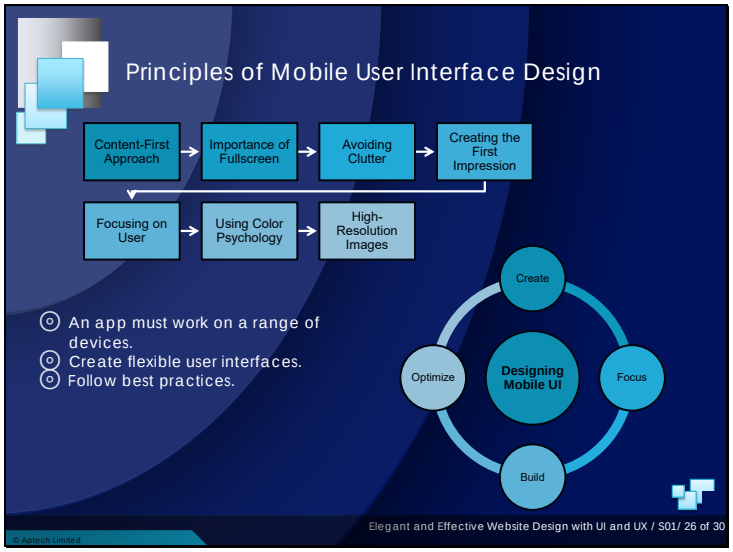
Instructions to the trainer:

- Show students Slide 25 and tell students that we will discuss about models used in UI design.
- A model is an abstract representation of the way in which a product will work. Four model types are especially important when designing UIs: User model, Design model, Mental model, and Implementation model.
- Let us begin with User model.
- A User model is established by a software engineer.
    - It describes the profile of the end-users of the system, and focuses on the syntactic and semantic knowledge of the user.
    - Syntactic knowledge describes the mechanics of interaction that are required to use the interface effectively.
    - Semantic knowledge focuses on the user's understanding of the functions performed by the application, the meaning of input and output, and overall objectives of the system.
- A Mental model is developed by the user while interacting with the system.
    - It is a representation of the user's system perception- 'How do users think this works?' based on past experiences, knowledge, or common sense.
- A Design model is also created by a software engineer.
    - It results from the analysis phase of the requirements and takes into account the data and architectural, interface, and procedural aspects of the system.
- Implementation models are created by software implementers.
    - It is a representation of how a system actually works.
    - An implementation model answers the question "How does this work?"

- It consists of the look and feel of the interface along with all supporting information such as resources, tutorials, help files, and videos that describe system syntax and semantics.
- Thus, an implementation model represents the way in which an application works. The model is described using diagrams and codes, which are later translated into real code.

➢ For more information about models in UI design, refer the following link: https://www.uxpassion.com/blog/implementation-mental-representation-models-ux-user-experience/

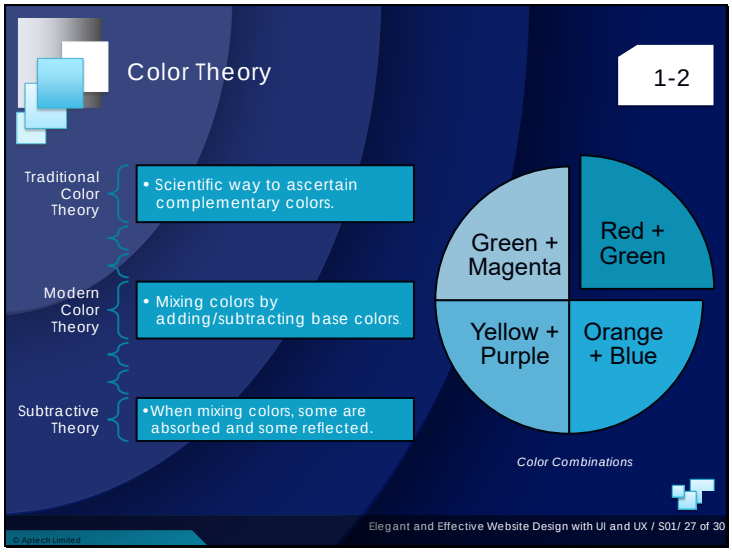
Slide 26



Instructions to the trainer:

- Show students Slide 26 and tell them that mobile user interface is very common and has advanced significantly since touchscreen first evolved.
- Explain that mobile user interface is based on GUI and has a touch-sensitive display. Mobile UIs are used in handheld devices, such as a smartphone or tablet, that allows the user to interact with the device's apps, features, content and functions.
- Mobile applications run on handheld devices.
- An application, or app, is a small, standalone software with limited functionalities.
- When designing an application, the designer must focus on structuring the content.
- The principles of user interface design are of utmost importance when designing apps.
- Read out the points on the Slide.
- The steps to designing the UI of mobile apps are as follows:
    - Create a consistent UI with built-in features.
    - Focus on mobile user experience.
    - Build a responsive and adaptive UI.
    - Optimize UI performance.
- For more information about designing UI for mobile apps, refer to the following link: https://uxdesign.cc/significance-of-ui-ux-design-in-mobile-application-f90b2c56c204.

Slide 27

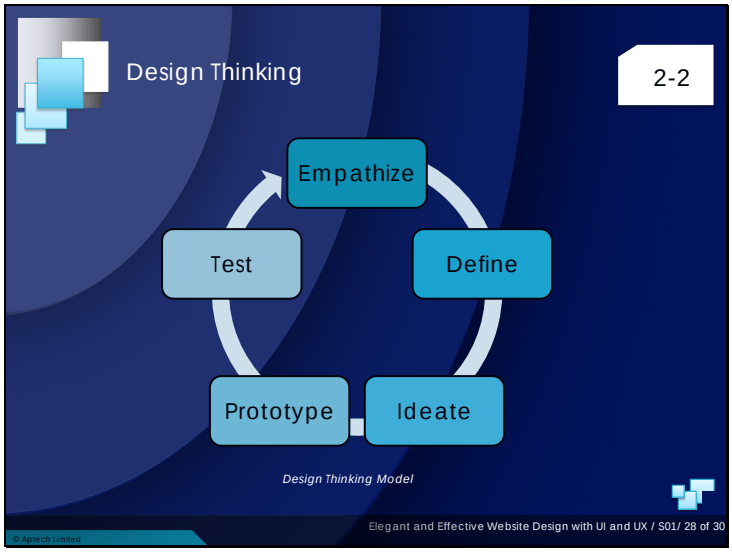


Instructions to the trainer:

- Show students Slide 27 and tell them that we will learn about the significance of color theory in UI design.
- Many people think that the colors used in an app or Website depends on the taste of the designer. This is not the case because the use of colors is determined by color theory. The way we use colors in UI affects the psychology and behavior of the user. They also determine the branding of a product. These are a few reasons why colors must be used judiciously in a product.
- Traditional Color Theory is a scientific way to ascertain colors that complement each other.
- Earlier, hues of color were arranged according to wavelength, and were segregated as:
    - Primary colors: red, yellow, and blue.
    - Secondary colors: green, purple, and orange.
    - Tertiary colors: created from primary and secondary colors.
- The Modern Color Theory advocates the mixing colors by adding or subtracting base colors.
    - All colors have a warm and cool tone.
    - The Munsell Color System is based on hue, chroma, and value.
- Using color theory for Websites is important because color evokes responses from the user. For example, red denotes a warning, whereas green denotes success.
- The Subtractive theory states that when different colors are mixed, some colors are absorbed and some are reflected.

- Use colors carefully because colors differ culturally: red, black, white have different meanings around the globe. For example, white is the color of bridal gown in Western culture, but signifies mourning in some other countries.
- For more information about color theory, refer to the following link: https://uxplanet.org/color-theory-brief-guide-for-designers-76e11c57eaa.

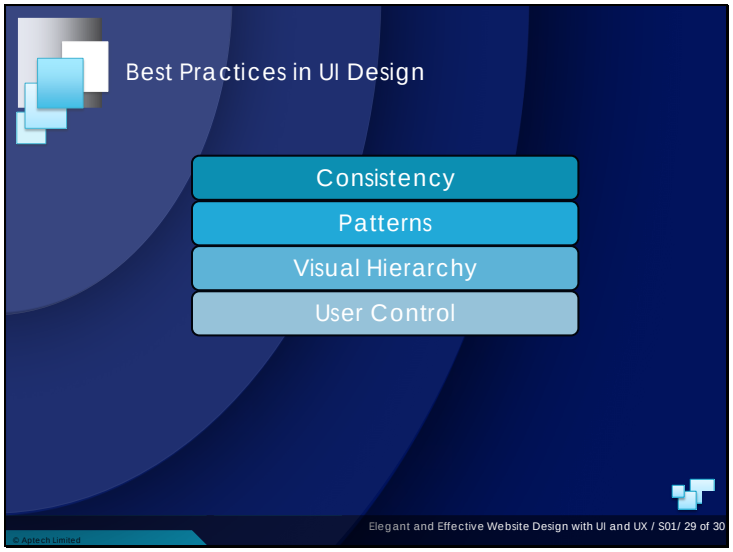
Slide 28



Instructions to the trainer:

- Show students Slide 28 and tell them that design thinking is a process that designers use to discover problems and think of solutions by understanding the end-user's goals. This enables designers to design products that are easy to use.
- Thus, design thinking is a problem-solving or solution-based approach that is specific to design problems.
- It aims to:
    - Understand human requirements.
    - Frame problems in human-centric way.
    - Form ideas in brainstorming sessions.
    - Adopt a hands-on approach for testing and prototyping.
- Design thinking leverages the feedback principle and works on the problems to find innovative solutions. There are many examples where design thinking has been used to benefit customers but a notable one has been the story of Oral B electric toothbrush. The objectives of the attempt were to implement the feedback received from users, to inform users about the benefits of brushing adequately, and to gather data for market analysis. The electric toothbrush was relaunched with innovations, such as sophisticated data-tracking features, a music player, and ways to collect how well users were brushing every single tooth, and even how sensitive their gums were. This led to the launch of an exceptional product and increase in customer satisfaction and loyalty.
- For more examples on implementing Design Thinking, refer to the following link: https://careerfoundry.com/en/blog/ux-design/design-thinking-examples/#braunoral-b-electric-toothbrush.

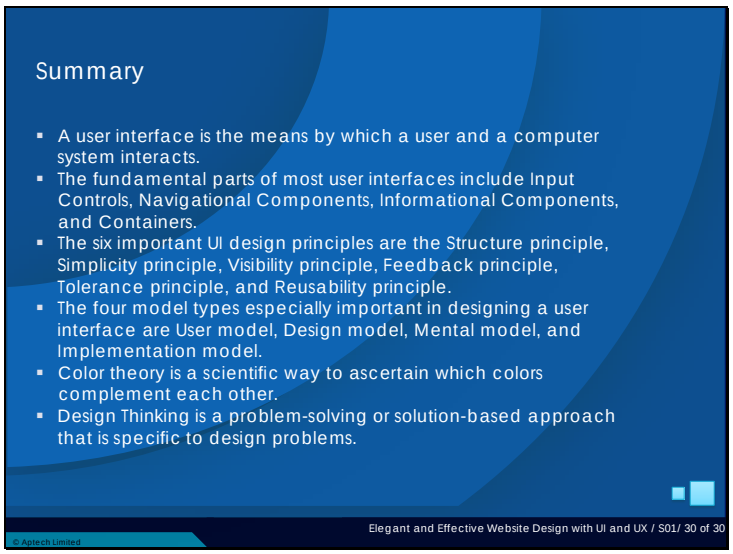
Slide 29



Instructions to the trainer:

- Show students Slide 29 and tell them that best practices are an inherent part of UI design.
- The elements of best practices are:
    - Consistency: This is what ties all the UI elements together in a product.
        - The appearance of a product must be aligned to the brand guideline so that all pages appear uniform.
        - Colors and fonts must be standardized across all platforms.
        - Use UI design guidelines to achieve uniformity.
    - Patterns: Using recurring patterns throughout the product adds to familiarity and comfort level of the user.
        - Familiarity of usage.
        - Example: scissors to cut, clipboard to paste, hamburger menu.
    - Visual Hierarchy: Information that should catch the attention of the user must be placed strategically. Using fonts and colors are added advantages that can make the user interested in the information. A user will notice information that is presented in a different manner than to the rest of the content on screen.
        - Important content should be placed on top.
        - Good to know content at the bottom of the page.
    - User Control: Remember that the user always likes to be in control. If a user feels overwhelmed or underwhelmed, they are not likely to continue browsing. Likewise, make sure that the user knows what is happening- this can be achieved through elements such as progress bar and messages.
        - Add informative messages to guide the user.
        - Helps in easy transition between screens.
- For more information about using best practices in UI design, refer to the following link: https://www.uxpin.com/studio/blog/guide-design-consistency-best-practices-ui-ux-designers/.

Slide 30



Instructions to the trainer:

- Using Slide 30, summarize the session by reading out each point on the slide.

Session 2: Introduction to User Experience Design

2.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

2.1.1 Teaching Skills

To teach this session, you should be well versed with User Interface and User Experience concepts and design. You should be familiar with challenges that are posed to UI/UX implementation.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use Slides and LCD projectors.

In-Class Activities

Follow the order given here during In-Class activities.

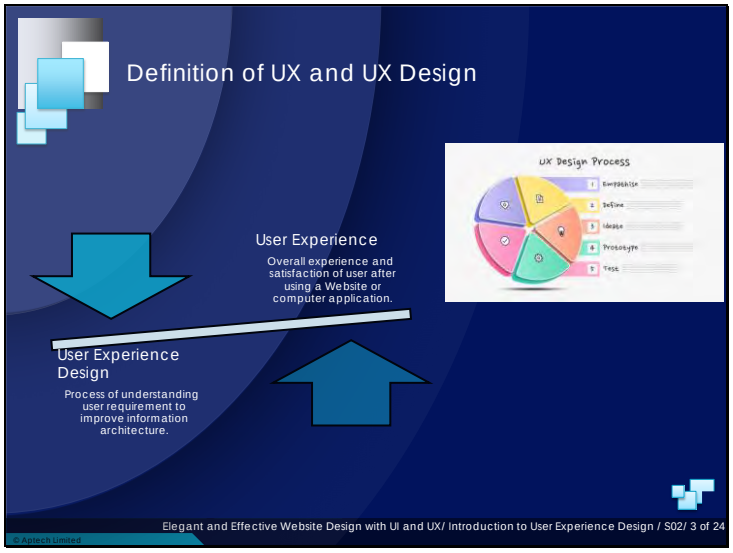
Slide 2

Instructions to the trainer:

- Give students a brief overview of the current session through the session objectives listed in Slide 2.

2.2 In-Class Explanations

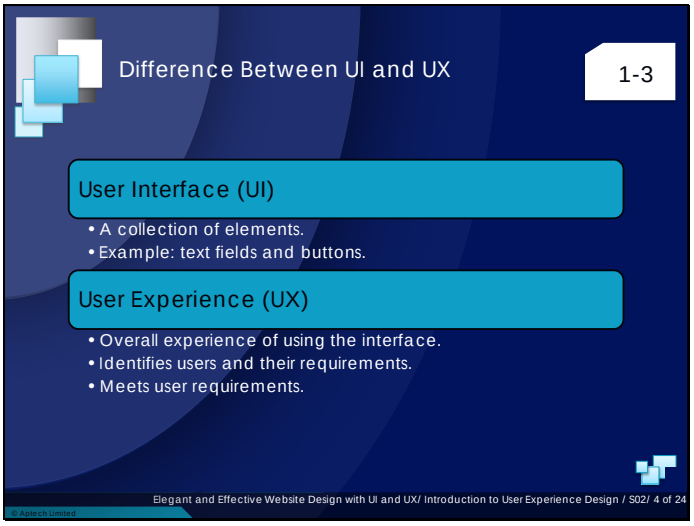
Slide 3

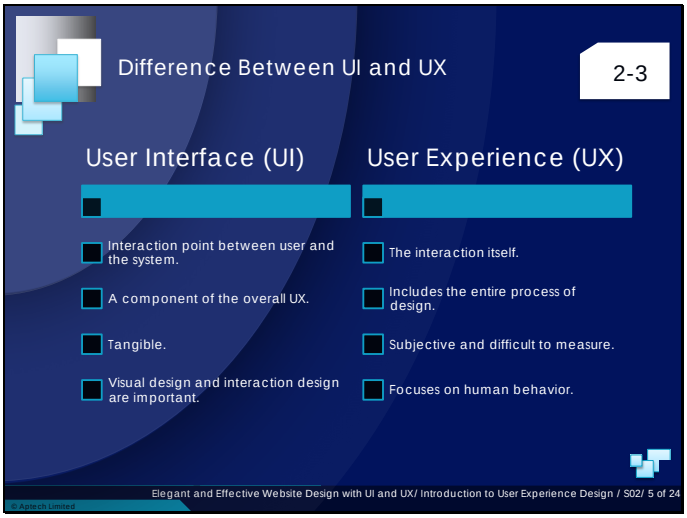


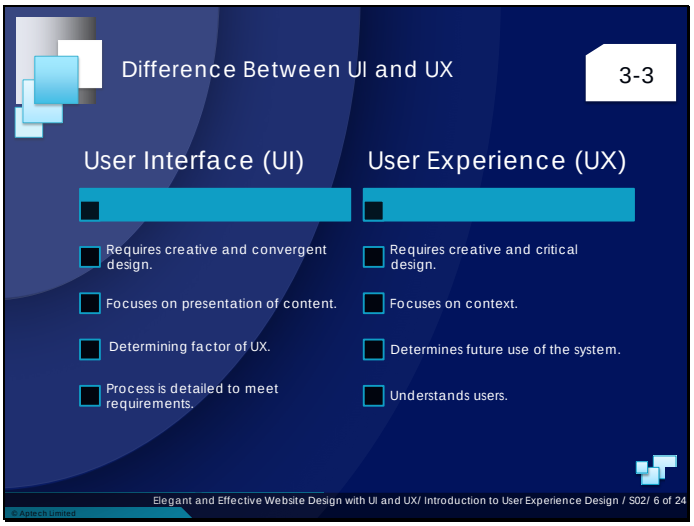
Instructions to the trainer:

- Show students Slide 3 and begin the session with an introduction to UX and UX design.
- Explain to the students that User Experience is different from User Experience Design. User experience (UX) design is the process used by designers to create products that provide meaningful experiences to users. For example, when creating a banking Website, a designer would think of the user psychology, content strategy, visual design, interaction design, and navigation among other things. In contrast, user experience is what the user experiences when he/she uses the Website to, say, download a historical statement from the banking Website. Thus, it is the total experience of researching, buying, using a product, and receiving support for that product.
- Define the two terms as follows:
    - **User Experience:** It is the overall experience and satisfaction a user has when interacting with a product such as a Website or computer application.
    - **User Experience Design:** It is the process of understanding the requirements of a user and intuitively addressing them by improving the product's information architecture, interaction design, and visual design.
- To know more about the differences between user experience and user experience design, refer to the following link: https://careerfoundry.com/en/blog/ux-design/the-difference-between-ux-and-ui-design-a-laymans-guide/.

Slides 4 to 6


Difference Between UI and UX
1-3
User Interface (UI)
• A collection of elements.
• Example: text fields and buttons.
User Experience (UX)
• Overall experience of using the interface.
• Identifies users and their requirements.
• Meets user requirements.
Elegant and Effective Website Design with UI and UX/ Introduction to User Experience Design / S02/ 4 of 24
© Aptech Limited


Difference Between UI and UX
2-3
User Interface (UI)
User Experience (UX)
Interaction point between user and the system.
A component of the overall UX.
Tangible.
Visual design and interaction design are important.
The interaction itself.
Includes the entire process of design.
Subjective and difficult to measure.
Focuses on human behavior.
Elegant and Effective Website Design with UI and UX/ Introduction to User Experience Design / S02/ 5 of 24
© Aptech Limited


Difference Between UI and UX
3-3
User Interface (UI)
User Experience (UX)
Requires creative and convergent design.
Focuses on presentation of content.
Determining factor of UX.
Process is detailed to meet requirements.
Requires creative and critical design.
Focuses on context.
Determines future use of the system.
Understands users.
Elegant and Effective Website Design with UI and UX/ Introduction to User Experience Design / S02/ 6 of 24
© Aptech Limited

Instructions to the trainer:

- Using Slides 4 to 6, tell students that they will learn about the difference between user interface and user experience.
- **User Interface (UI)**
  - It is simply a collection of elements such as text fields, buttons, search field, layout, and links by which a user and a computer system interacts.
  - It does not address details such as how the user remembers the system, responds to the system and re-uses it.
  - It is a means by which a user can interact with the system. It serves as a point of interaction between user and the system.
  - UI is only a component of the overall UX.
  - UI is tangible and can be defined easily.
  - It focuses on the visual design (look and feel) and the interaction design (how it works) of the system.
  - It requires creative and convergent design.
  - It focuses on the presentation of the content so that it becomes easier for the user to obtain information.
  - UI is the determining factor of the UX.
  - The UI process involves determining the initial requirements and objectives for the system, organizing the information space and selecting and applying colors and style of the UI elements.

- **User Experience (UX)**
  - It is the overall experience of using the interface - how it makes the user feel while interfacing with a system.
  - It answers the 'why' questions behind the design layout and user interaction.
  - It focuses on identifying the users who will utilize the system and determining how exactly to meet their requirements.
  - It is the experience resulting from using a system. It is the interaction itself.
  - UX is the big picture that includes the entire process from concept to completion.
  - UX is subjective in nature and sometimes difficult to measure.
  - It focuses on human behavior and try to obtain a better understanding of what the user wants to use.
  - It requires creative and critical design.
  - It focuses on the context and provides users with the solution to their problems.
  - The UX determines the future use of the system.
  - UX design begins with a thorough understanding of the users - what drives them and what their limitations are.

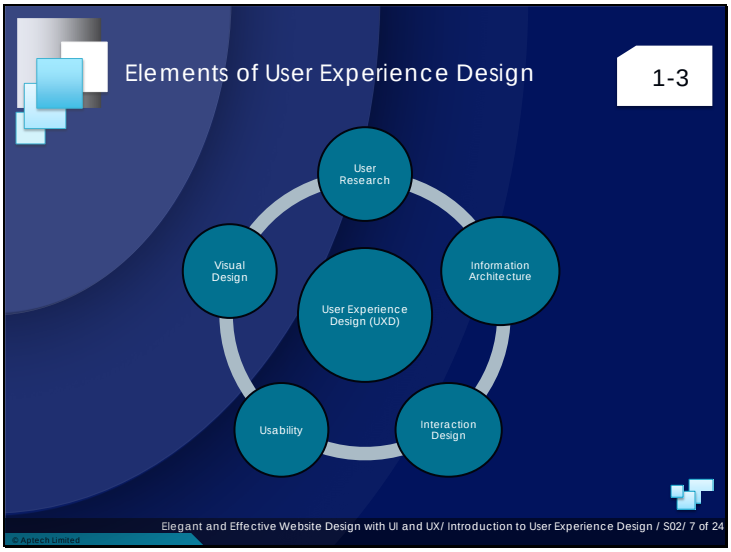
In-Class Question:

Ask students following question. Wait for a response before you give the answer.

Question: Are elements, such as text-fields and buttons, considered part of the user experience or user interface?

Answer: User Interface.

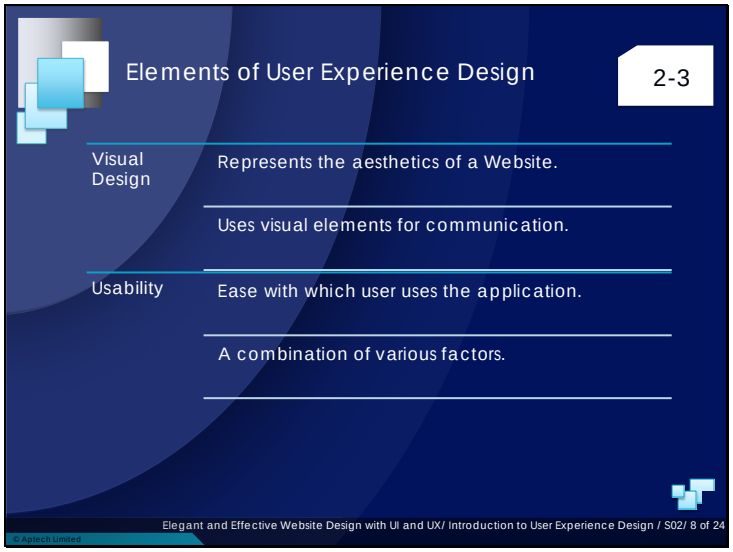
Slide 7

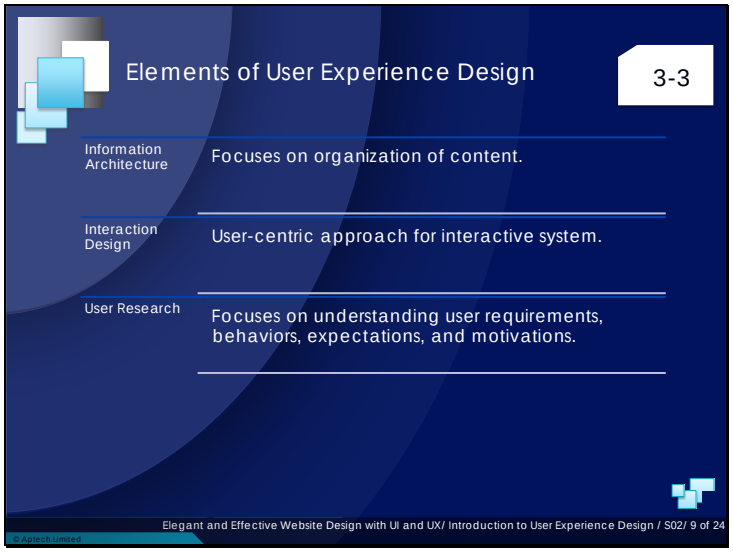


Instructions to the trainer:

- Show students Slide 7 and tell them that they will learn about the elements of a good UX design.
- Tell them that the critical elements of a good User Experience Design are as follows:
  - User Research: Collecting user perceptions and experiences to improve product design.
  - Information Architecture: Structuring and organizing information within the product to facilitate understanding.
  - Interaction Design: Making a pleasant and non-frustrating experience for the users.
  - Usability: Designing the product to achieve end goal.
  - Visual Design: Graphic treatment of interface elements, that is the 'look' in 'look-and-feel' of the system.
- For more information about the elements of a UX design, refer to the following link: https://www.netsolutions.com/insights/5-vital-elements-of-a-good-user-experience-design/.

Slides 8 and 9





Instructions to the trainer:

- Using Slides 8 and 9, tell students that each element will be discussed.
- **Visual Design**: Visual design represents the aesthetics of a Website and its associated components. In visual design, the UX designers use illustrations, graphics, layouts, space, typography and colors to enhance user experience. Visual consistency appears through the use of artistic design principles, such as color theory, balance, and contrast. It utilizes the visual elements to deliver a clear message to the users and thus, improve their experience with the system. Therefore, when thinking about visual aspects of the product, focus on the kind of images and icons that depict the true intent of the words that go with them.

- **Usability**: Usability is the term used to describe how easily users can complete their intended tasks when using a product. It is a combination of various factors including effectiveness, efficiency of use, engagement, error tolerance, and ease of learning.
  - For example, a person has bought a new phone and wants to dial a number that is not there on the SIM. He taps the phone icon which opens the Call History. He taps the hamburger menu and moves to the Contacts list and searches for the keypad there. The user has now spent a considerable amount of time inspecting the interface for the keypad and finds it at the bottom of the screen. The keypad is in the form of an icon that is not readily understood. Since, dialing a number is a basic function of the phone, it should not take long for a user to figure it out. If a user does, then it could be a usability problem.
  - Therefore, when discussing about usability, remember that the interface must be simple enough for the user to learn and memorize the actions, it must be efficient so that it leads to satisfaction; and the product must be error-free.
  - Usability issues can be overcome by understanding user requirements, planning the design, creating prototypes and evaluating them.

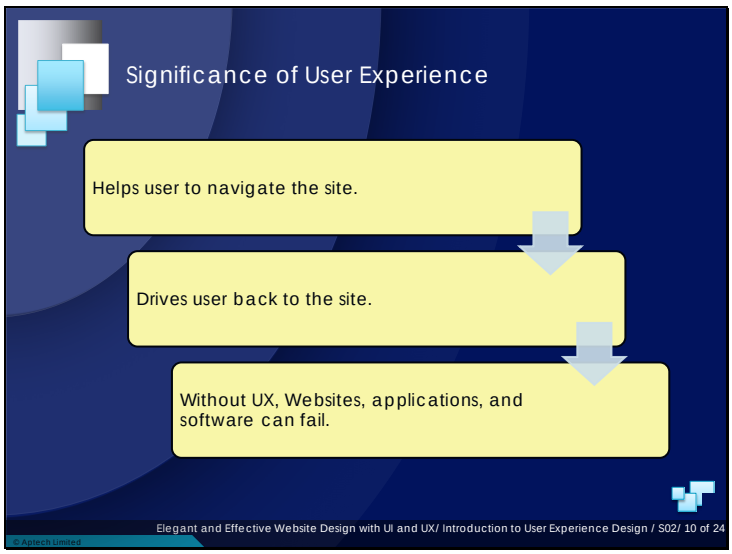
- **Information Architecture:** It is the organization and division of content in a product.
  - It focuses on organizing, structuring, and labelling content in an effective and sustainable way, so that the users can find the relevant information and complete their tasks easily.
  - Though Information Architecture is part of UX design, it is different from UX:
    - Information Architecture focuses on the user's goals. It requires a cognitive understanding that centers on the structure of information in the product. In other words, the product exists because of information architecture.
    - UX, on the other hand, focuses on making the product interface pleasant. It provides a realistic idea of the final product. This is what users use to achieve their goals, which results in user satisfaction and business gains.
- **Interaction Design:** It is a user-centric approach of designing an interactive system focused around end-users- their goals, experiences, what they require and how they expect the system to work. It is the design of how a user will interact with the product. The goal of interaction design is to create products that enable the user to achieve their objective in the best way possible.
  - When thinking about interaction design, think about the visual representations, such as elements, icons, and images. Words play an important role in understanding functions, especially labels. Too much information or using complex words can overwhelm the user. Provide feedback through alerts before a task or after a task is complete. Users should be able to track the progress of actions, such as downloading files. They should also be able to resume tasks later if they have ended it abruptly.
- **User Research:** It focuses on understanding user requirements, behaviors, expectations, and motivations through one-on-one interviews, research, surveys, user observation, and other feedback methodologies. There are many investigative methods used to gain insight to the design process. The aim of research is to inform the designers about the user perspective, which ends with the usability and sentiment of the user. This phase begins at the start of the

project, when researchers conduct interviews, observe prospects or current users, collect surveys, and review existing data and analytics.

In-Class Question:

Ask students following question. Wait for a response before you give the answer.
Question: Which element represents the aesthetics of a Website?
Answer: Visual Design

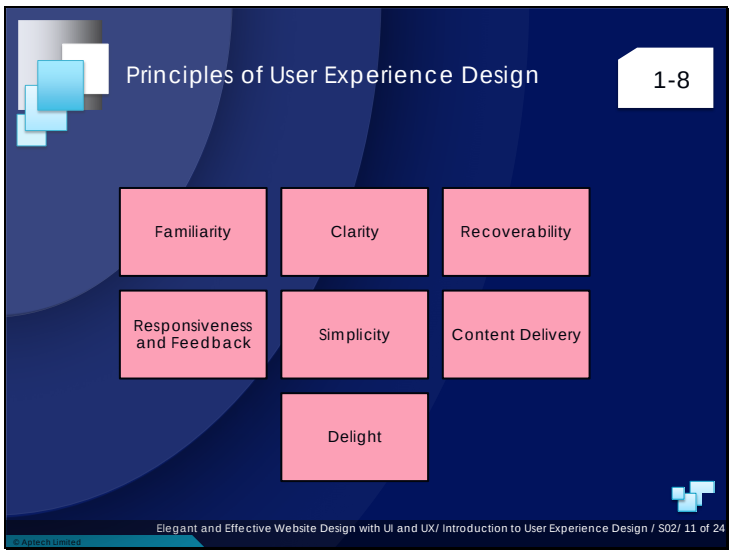
Slide 10



Instructions to the trainer:

- Ask students about their opinion on the significance of user experience.
- Show Slide 10 and explain how a good user experience helps the user to easily navigate the site and understand the way to use it.
- A user experience that is useful, pleasurable, comprehensive, desirable, and quick develops an interaction-rich experience that drives the users back to the site.
- Without an effective user experience, products such as Websites, apps, or software are likely to fail.
- For more information about the significance of user experience, refer to the following link: https://uxplanet.org/the-importance-of-user-experience-design-988faf6ddca2

Slide 11



Instructions to the trainer:

- Show students Slide 11 and tell them that the key principles for creating engaging user experiences are as follows:
  - Familiarity
  - Clarity
  - Recoverability
  - Responsiveness and Feedback
  - Simplicity
  - Content Delivery
  - Delight
- Tell students that each principle will be discussed in the subsequent Slides.

Slides 12 to 18

Principles of User Experience Design

2-8

Familiarity

- User can recognize familiar UI components.

Example to Demonstrate Familiarity Principle
Image courtesy: http://www.8164.org/familiarity-learnability/

Principles of User Experience Design

3-8

Clarity

- Focuses on arrangement of elements on the page.
- Answers three basic questions:
  - What is it?
  - What can I do here?
  - Why should I do it?

Example to Demonstrate Clarity Principle
Image courtesy: http://conversionxl.com/5-principles-of-persuasive-web-design/

Principles of User Experience Design

4-8

Recoverability

- User actions should be reversible.
- Design should guide users on proceeding further.
- User should never be left at a 'dead-end'.

Example to Demonstrate Recoverability Principle
Image courtesy: thetrainline.com

Principles of User Experience Design

5-8

Responsiveness and Feedback

- No lag time in loading.
- Helpful information should be included.
- Provide appropriate and timely feedback.

Example to Demonstrate Responsiveness and Feedback Principle
Image courtesy: http://www.makemytrip.com/

Principles of User Experience Design

6-8

Simplicity

- Simple to understand and simple to use.
- Include important elements.
- Common tasks should be simple.

Example to Demonstrate Simplicity Principle
Image Courtesy: http://www.apple.com/watch/

- Using Slides 12 to 18, explain each principle.
- **Familiarity:** This term implies that a user should be able to recognize the UI components and view the interaction as similar to the ones they have interacted before.
- Thus, a user should be able to recognize user interface components instantly; so much so that their interaction with the application or Website becomes natural. This can happen when the components used are common to most applications; for example, the delete button resembling a bin. So the similarity of the interface to such concrete objects makes the user familiar with components that he/she has interacted with in the past.
- Using familiar components benefits users immensely. It reduces their learning curve; they do not have to learn about new designs or components; they can use the product right away. Since there is no learning involved, they can accomplish their goal quickly and easily. Moreover, designers do not have to spend time and effort in creating new components; they can reuse the components and speed up on the design.

- **Clarity:** It focuses on arranging various elements on the Web page to maximize the user's chance of using the site effectively.
    - A clear design provides answer to three basic questions: it elaborates on the company's products and services.
        - What is it?
        - What can I do here?
        - Why should I do it/how it is useful for me?
- Clarity produces meaningful interaction without any obstruction. Users appreciate products when they are simple and clear to understand.
- **Recoverability:** This is the ability to reach the goal after an error has occurred during the previous interaction. There are two directions in which recovery can occur, forward or backward. Ideally, designers should provide an error-free experience but in case they do occur, the design should be such that it allows the user to get back on track with minimal effort. Recoverability also helps the designer to understand the types of errors and correct them.
    - To summarize:
        - Recoverability emphasizes that the user actions should be reversible.
        - When a user makes a mistake, the design should guide the users about how to proceed further.
        - A user should never be left at a 'dead-end' in the Website or app, where their next step is not clear and they have to figure out what to do next.
        - Effectiveness of the design; what it prioritizes and how it conveys information. It is determined by all the components of a Web page that can stimulate visually.
- **Responsiveness and Feedback:**
    - Responsive design is an approach used to create content that adjusts smoothly to various screen sizes. For example, Websites that are designed for PCs are not compatible when accessed on handheld devices (that is, the screen may not load correctly, or the borders of the page might not fit to the screen). This affects the readability and usability of the product. Designers size elements in relative units or percentage so that their designs can automatically adapt to the browser space to ensure content consistency across devices.
    - User feedback is information collected directly from users/customers about their reactions to a product, service, or Website experience.
- Some points to remember are:
    - The user interface design should be quick and there should be no lag time in loading.
    - It should provide helpful information to the user about the task in hand.
    - The user interface should provide appropriate and timely feedback to specify that the action is happening and whether it is successful or unsuccessful.
- **Simplicity:** The design should be simple to understand and simple to use. The aim of a UX designer is to create simple, easy to follow designs that help users achieve what they want quickly, efficiently, and effectively.

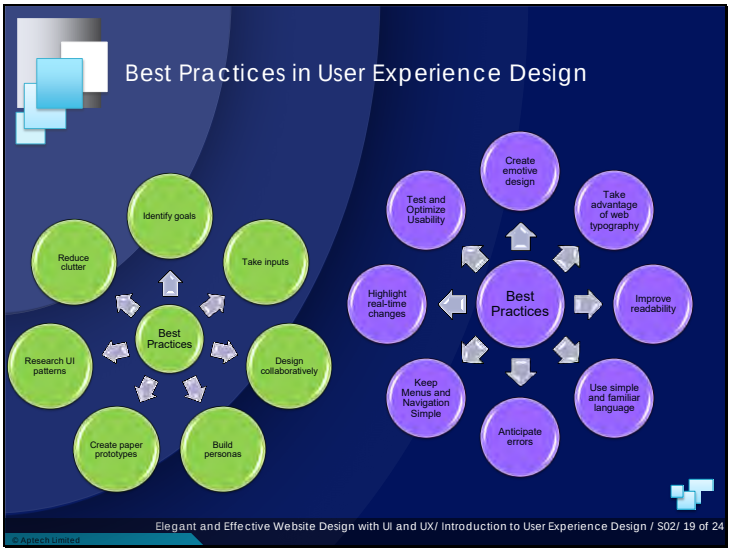
- Point to the screenshot on the Slide and ask students what they understand from the message displayed on the screen. Wait for the answers and reply: It conveys the message that all the four important activities can be controlled from a single device on the wrist.
- Some rules to create simple designs are:
    - It should include only the elements that are most important for communication.
    - It should also make common tasks simple to do and provide good shortcuts that are meaningfully related to longer procedures.
- **Content Delivery:** Ask students whether they have ordered books from Amazon. Explain that when we want to order a book from Amazon, all the required details appear on the same screen, such as the number of used and new copies, whether it is available in hard cover or paperback, the editions and the formats. All such information helps users decide their preference. Moreover, the 'Customers Who Bought This Item Also Bought' section aids the user find similar books, which, in turn, increases sales of other books.
- Thus, the UI should provide a well-timed and relevant content to users.
- Content should be useful and usable, well structured, and easily found on the site. This helps to tangibly increase the user's satisfaction.
- **Delight:** The effect on users should be positive and be able to influence behavior and opinion.
- A few ways in which positive effect can be made are:
    - The UI design should be intuitive, simple, and attractive to delight the user and make an emotional connect with them.
    - It should provide fantastic attention to detail.
    - The fonts, color palette, graphics, and animation should be used wisely to provide a better and more usable experience.
    - Point to the screenshot on the Slide and tell students: For example, the word "Karma" on the Slide immediately catches attention. The Website design is minimalistic with four options on the header.
    - Use tailored or personalized content. For example, Amazon offers recommendations based on the viewed items or purchases.

In-Class Question:

Ask students following question. Wait for a response before you give the answer.

Question: A design should guide users on proceeding further. Which principle does the statement refer to?
Answer: Recoverability

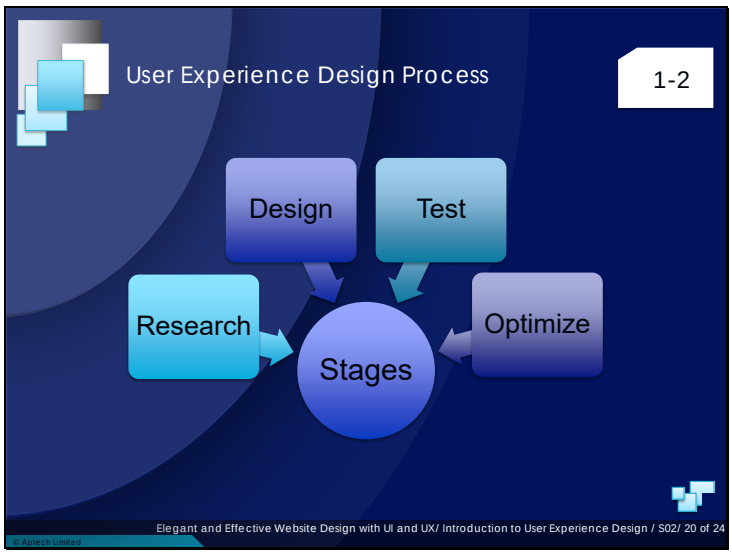
Slide 19



Instructions to the trainer:

- Show students Slide 19 and tell them that it is important to follow some best practices in user experience design.
  - Connect the goals
  - Take inputs
  - Design collaboratively
  - Build personas
  - Create paper prototypes
  - Research UI patterns
  - Use tabs effectively
  - Reduce clutter
  - Create emotive design
  - Take advantage of Web typography
  - Improve readability
  - Use simple and familiar language
  - Anticipate errors
  - Keep Menus and Navigation Simple
  - Highlight real-time changes
  - Test and Optimize Usability

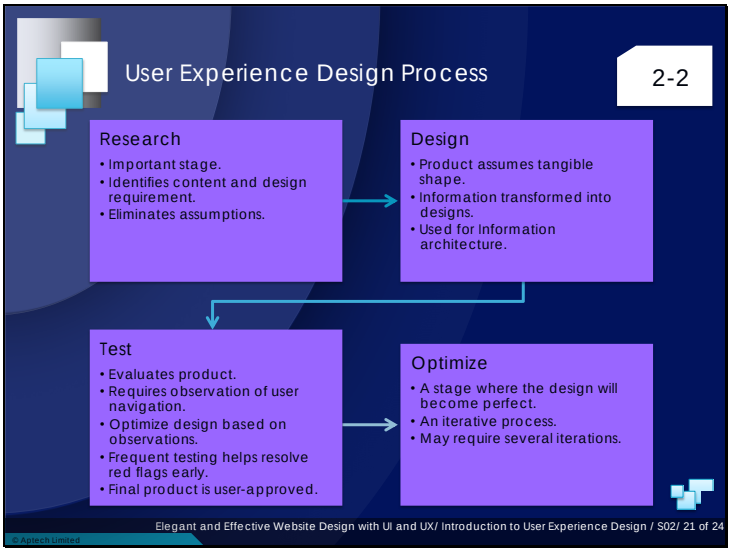
Slide 20



Instructions to the trainer:

- Show students Slide 20 and tell students that they will learn about the UX design process.
- Tell them that UX design is an integral part of a user's experience.
- Explain that it creates a memorable and positive user experience.
- Therefore, UX design process requires an understanding of psychology and requirement of user.
- The four stages of UX design are namely, Research, Design, Testing, and Optimization.

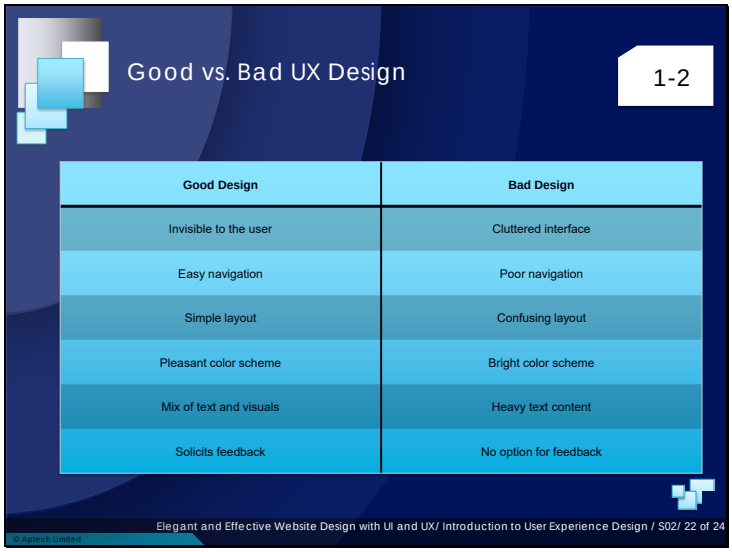
Slide 21



Instructions to the trainer:

- Using Slide 21, explain the four stages.
- **Research:** This is the most important stage in the UX design process.
  - Helps decide the required content and design.
  - Eliminates any assumptions.
  - Examples: Interview, Survey, Analytics
- **Design:** The product takes a tangible shape in this phase.
  - Information collected during research transformed into designs
  - Used for Information architecture, wireframes, prototypes, and mockups
- **Test:** During this phase, the product is thoroughly evaluated.
  - Requires observation of user navigation.
  - Optimize the design based on these observations.
  - Frequent testing helps resolve any red flags early in the stage.
  - Final product is user-approved before release.
- **Optimization:** A stage where the design will become perfect, functional, and effective.
  - UX design is an iterative process.
  - It may require several iterations of design, testing, and optimization to make them better.

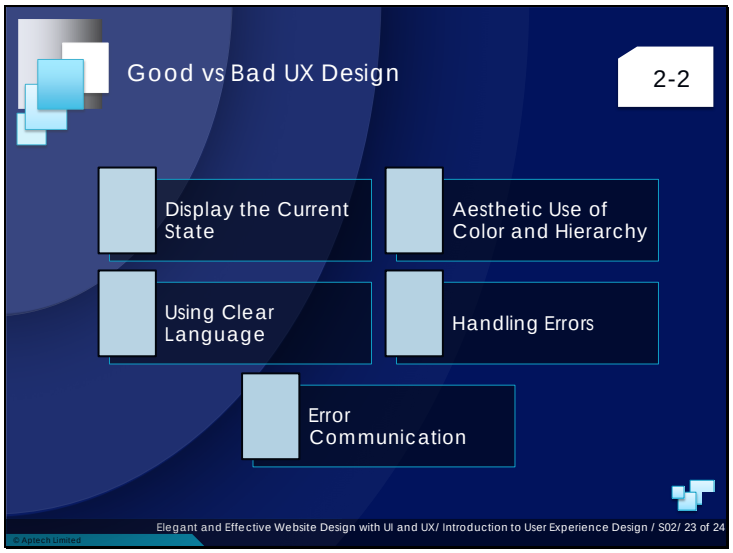
Slide 22



Instructions to the trainer:

- Show students Slide 22 and tell them that they will learn about the difference between a good and bad UX design.
- Begin with a quote: "*Good design is actually a lot harder to notice than poor design, in part because good designs fit our requirements so well that the design is invisible*." – Don Norman
- Then: "*Bad design, on the other hand, screams out its inadequacies, making itself very noticeable*." – Don Norman
- Discuss the traits of a good UX design:
  - Invisible to the user
  - Easy navigation
  - Simple layout
  - Pleasant color scheme
  - Mix of text and visuals
  - Solicits feedback
- Discuss the characteristics of a bad UX design:
  - Cluttered interface
  - Poor navigation
  - Confusing layout
  - Bright color scheme
  - Heavy text content
  - No option for feedback
- For more information about the characteristics of a good and bad UX design, refer to the following link: https://xd.adobe.com/ideas/process/ui-design/good-bad-ux-design-examples/

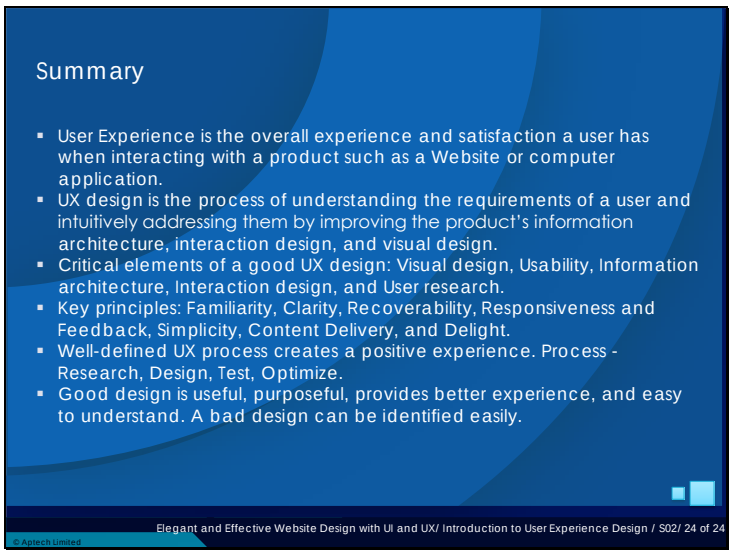
Slide 23



Instructions to the trainer:

- Using Slide 23, mention that there are certain guiding principles that provide an insight into what qualifies for a good user experience.
  - Display the Current State
    - When users are navigating a Website or an application, they should be informed about how the app will respond when they perform an action, within a reasonable response time.
  - Aesthetic Use of Color and Hierarchy
    - Colors should be used in a thoughtful manner along with the right combinations.
  - Using Clear Language
    - Use simple and easy to understand language. Avoid technical jargons
  - Handling Errors
    - Options that are not available or not working must be hidden.
  - Error Communication
    - Inform the user that an error has occurred. Tone, language, and design is important in these communications.

Slide 24



Instructions to the trainer:

- Using Slide 24, summarize the session by reading out each point on the Slide.

Session 3: Understanding Responsive Web Design

3.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

3.1.1 Teaching Skills

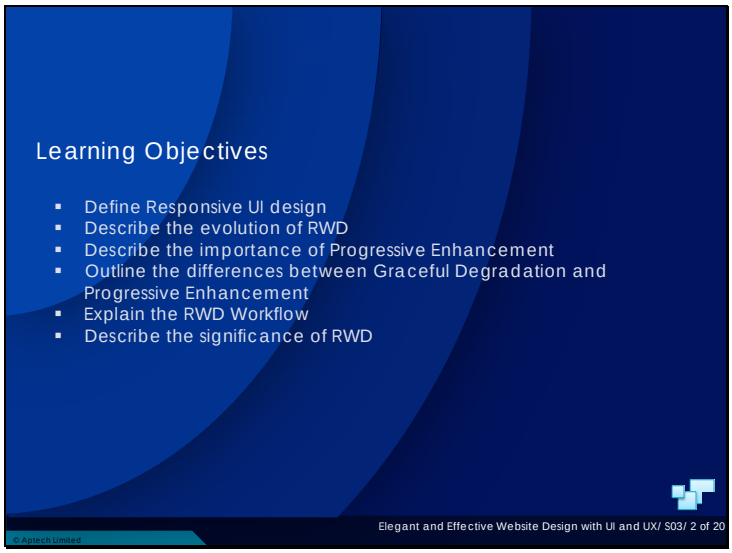
To teach this session, you should be well versed with concepts of Responsive Web Design.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use Slides and LCD projectors.

In-Class Activities

Follow the order given here during In-Class activities.

Slide 2



Instructions to the trainer:

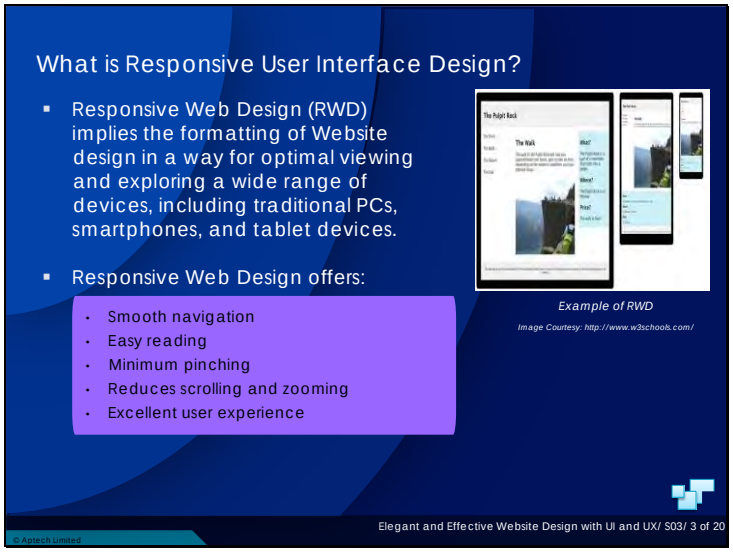
- Begin the session by introducing students to Responsive User Interface Design and its examples.
- Conclude this screen by listing the objectives of the session.

Quick Tips:

Before commencing the session, you could ask students to express their knowledge of the responsive user interfaces.

3.2 In-Class Explanations

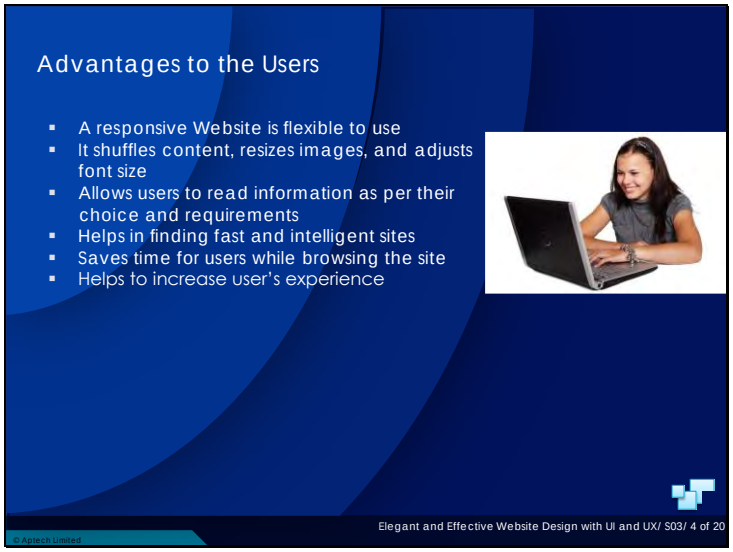
Slide 3



Instructions to the trainer:

- Explain what is Responsive User Interface design, also called Responsive Web Design, (RWD). Provide a few examples of Responsive Web Design to illustrate the concept.
- Mention various features that RWD offers.

Slide 4



Instruction to the trainer:

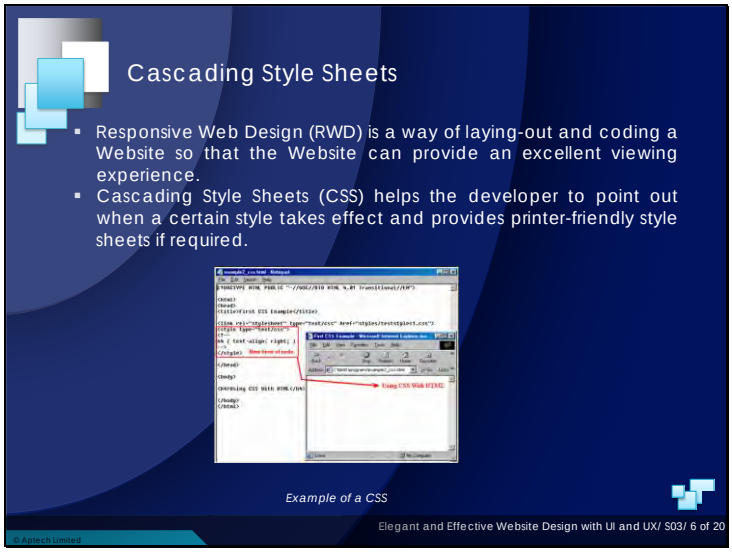
- Explain to the students about the advantages of RWD as per users' perspective.

Slide 5

Instruction to the trainer:

- Explain to the students about the advantages of RWD as per Web Designers' perspective.

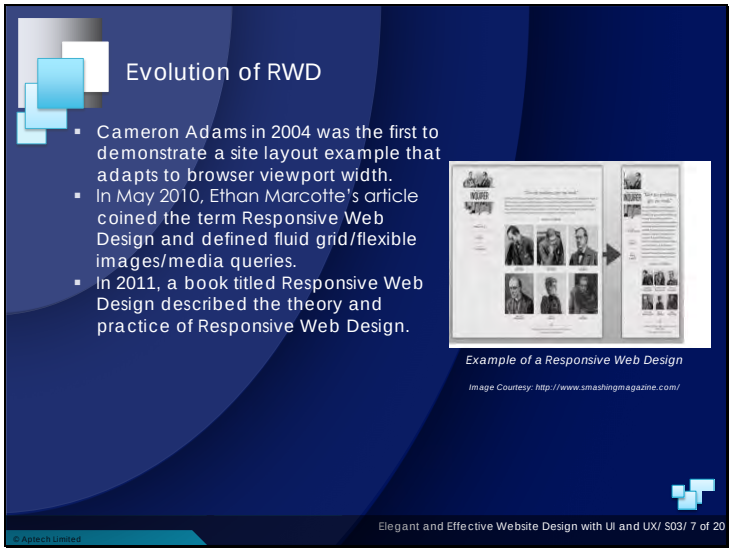
Slide 6



Instructions to the trainer:

- Define RWD. Tell the students that RWD is a way of laying-out and coding a Website so that it can provide an excellent viewing experience.
- Explain how Cascading Style Sheets (CSS) helps in creating responsive Web design.

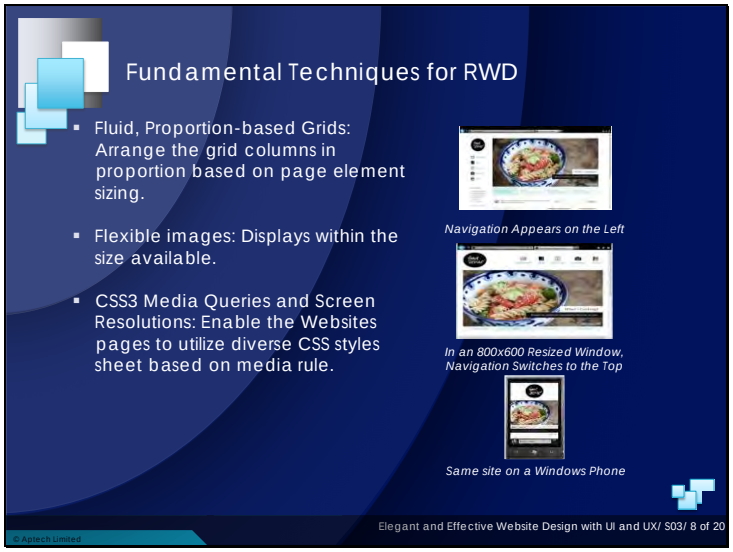
Slide 7



Instruction to the trainer:

- Begin by explaining the evolution of RWD and shows the Websites that implement responsive Web design.

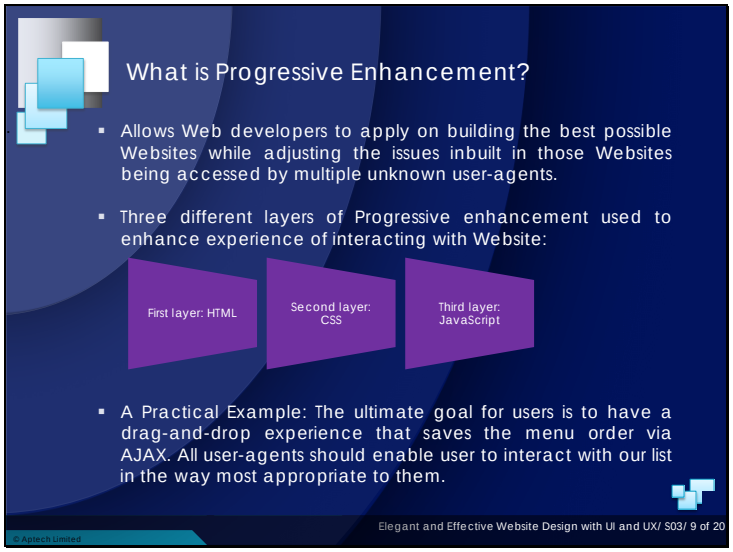
Slide 8



Instructions to the trainer:

- Explain the fundamental techniques for RWD.
- Demonstrate the example of fluid and flexible images with different screen resolutions.

Slide 9



Instruction to the trainer:

- Describe what is meant by progressive enhancement and explain its different layers. Illustrate the use of each layer with an example to enhance the experience of interacting with the Website. Remember to emphasize on the functions of each layer.

In-Class Question:

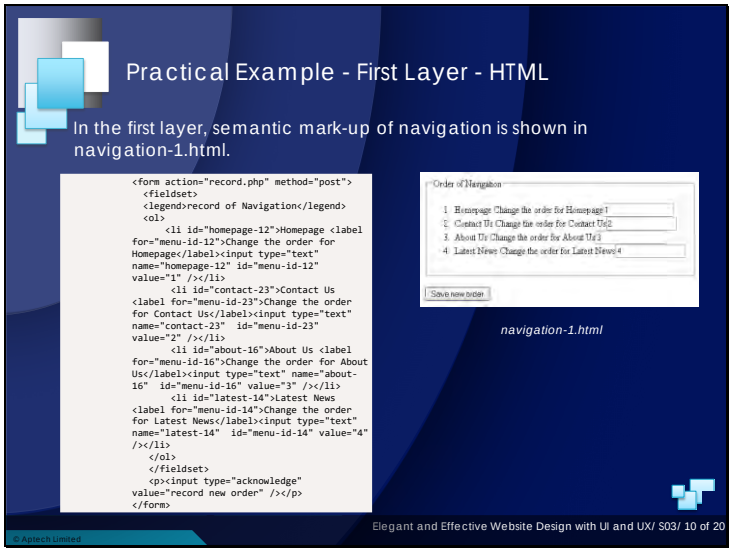
Pose a question to the students to break the monotony. This will help you in reviewing their understanding of the topic.

Question: Which is the primary reason to keep your design responsive?

Answer:

Increase the reach of your application to a larger user base using an array of devices.

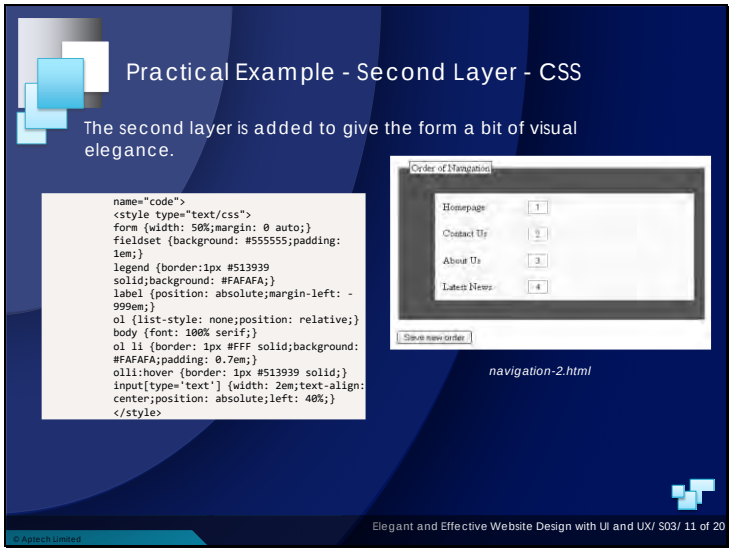
Slide 10



Instructions to the trainer:

- Using a practical example, explain the first layer, that is, the HTML layer for the sematic markup of the navigation.
- Explain to the students the function of each statement of the Navigation-1.html file and highlight its output shown on Slide 10.

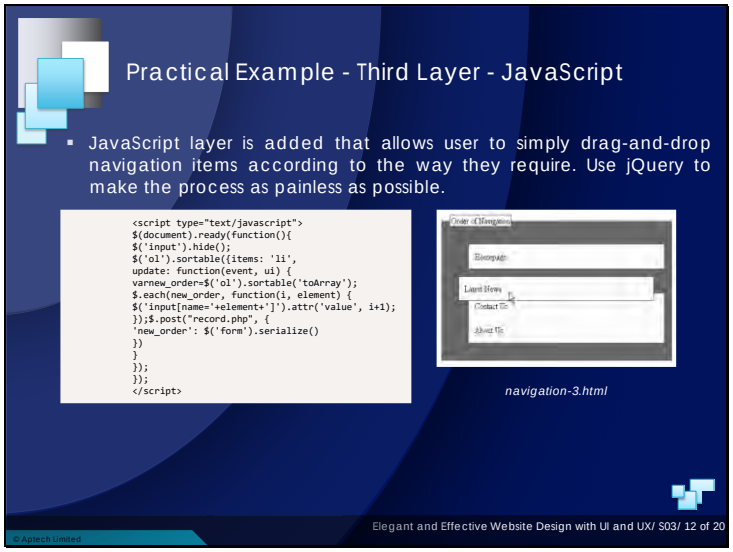
Slide 11



Instructions to the trainer:

- Explain the second layer, that is, CSS layer, used for the visual elegance of the navigation.
- Explain to the students the function of each statement of the Navigation-2.html file and highlight its output as given on Slide 11.

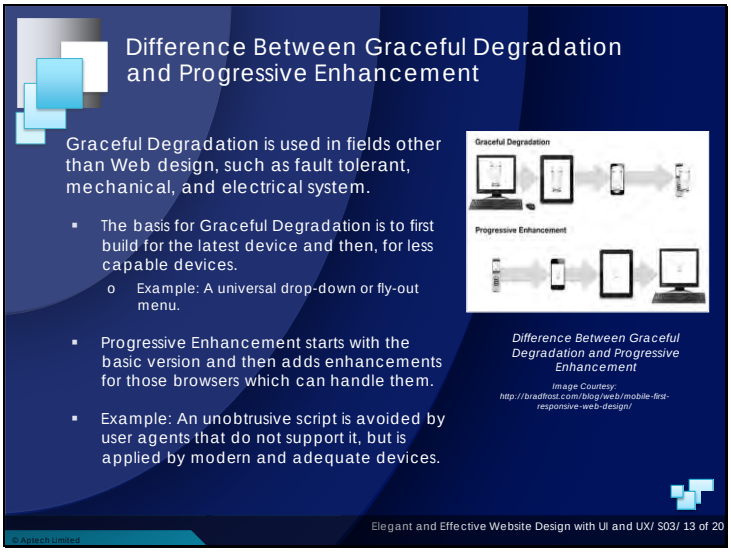
Slide 12



Instruction to the trainer:

- Explain the third layer, that is, JavaScript layer for simply dragging and dropping the navigation items.
- Explain to the students the function of each statement of the Navigation-3.html file and its output as given on Slide 12.

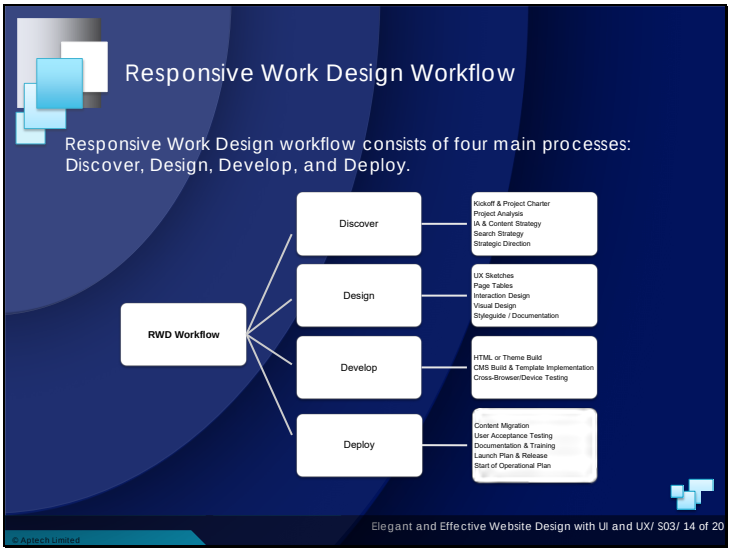
Slide 13



Instruction to the trainer:

- Explain the difference between Graceful Degradation and Progressive Enhancement with examples.

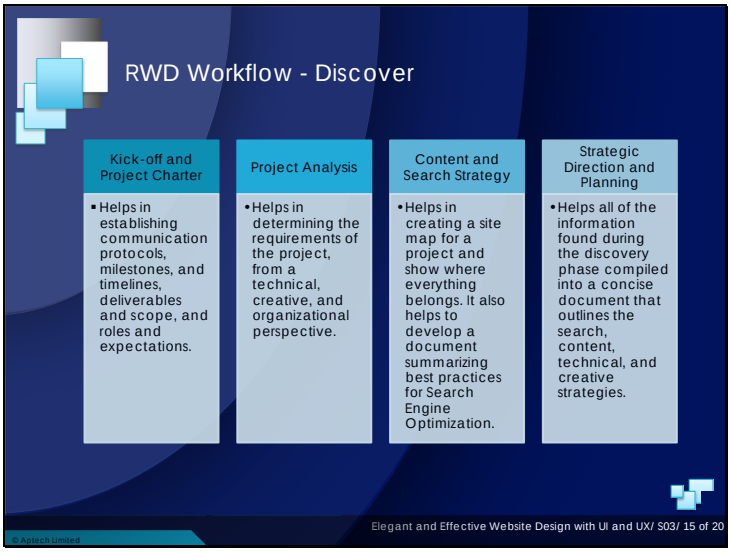
Slide 14



Instruction to the trainer:

- Explain the four main processes of responsive work design workflow namely, Discover, Design, Develop, and Deploy.

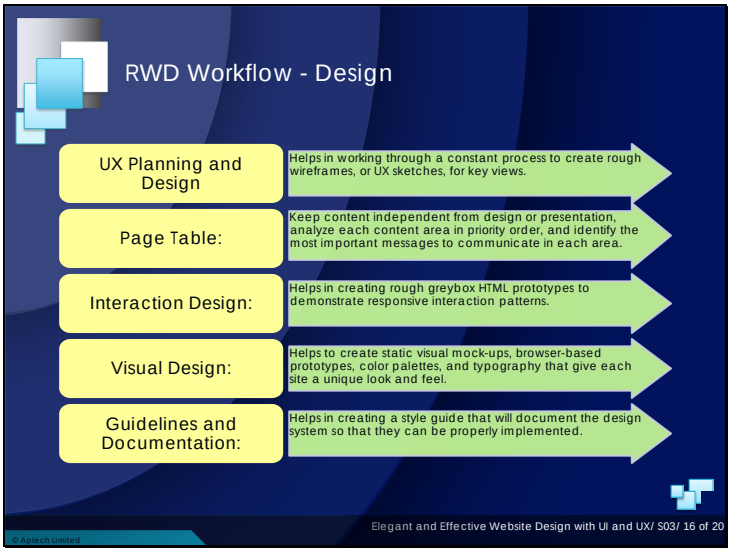
Slide 15



Instruction to the trainer:

- Explain the RWD Workflow-Discover process in detail.

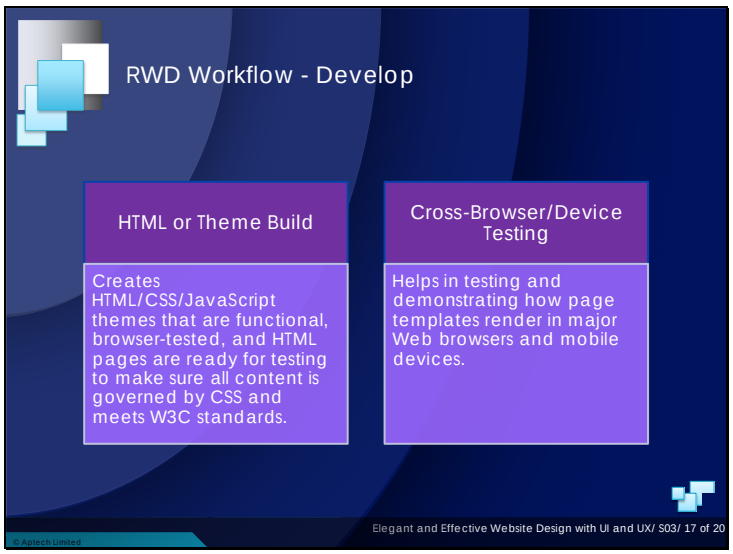
Slide 16



Instruction to the trainer:

- Explain the RWD Workflow-Design process in detail.

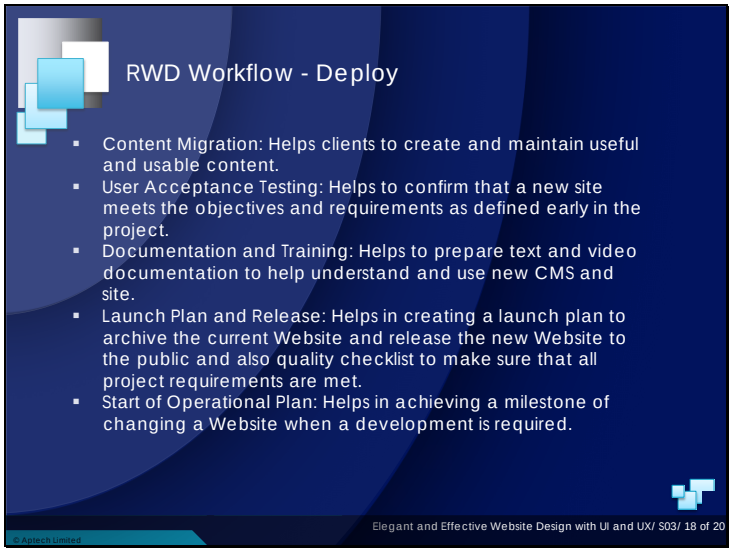
Slide 17



Instruction to the trainer:

- Explain the RWD Workflow-Develop process in detail.

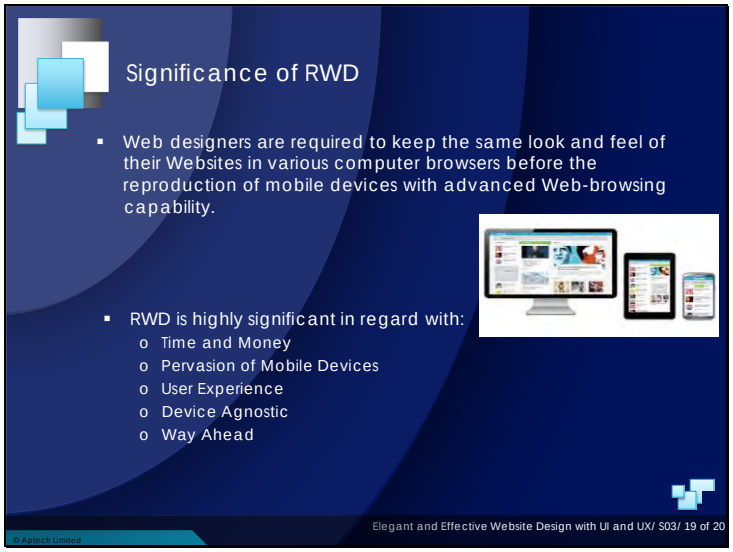
Slide 18



Instruction to the trainer:

- Explain the RWD Workflow-Deploy process in detail.

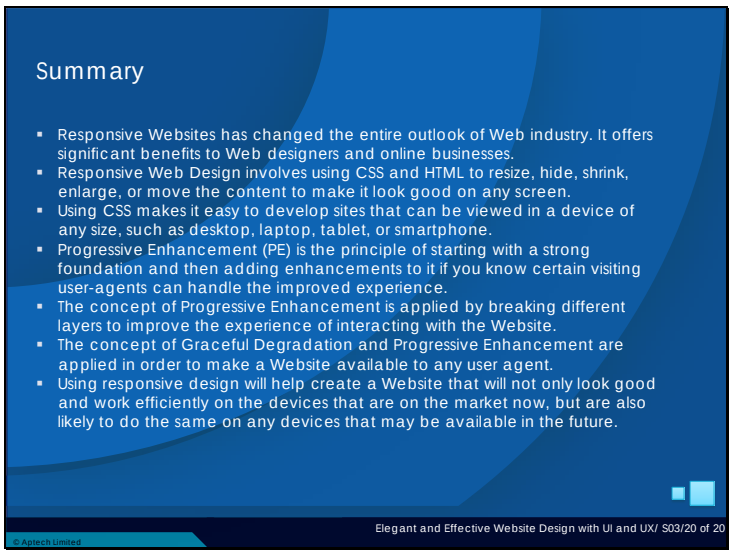
Slide 19



Instruction to the trainer:

- Explain the importance of RWD to students, along with some examples.

Slide 20



Instructions to the trainer:

- Summarize the session.
- Highlight the key points covered in the session and provide an introduction of the next session.
- Facilitate a group discussion; ask open-ended questions, in relation to the session that was conducted.
- Invite responses from the participants.

Session 4: Understanding the Strategies for Responsive Web Design

4.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

4.1.1 Teaching Skills

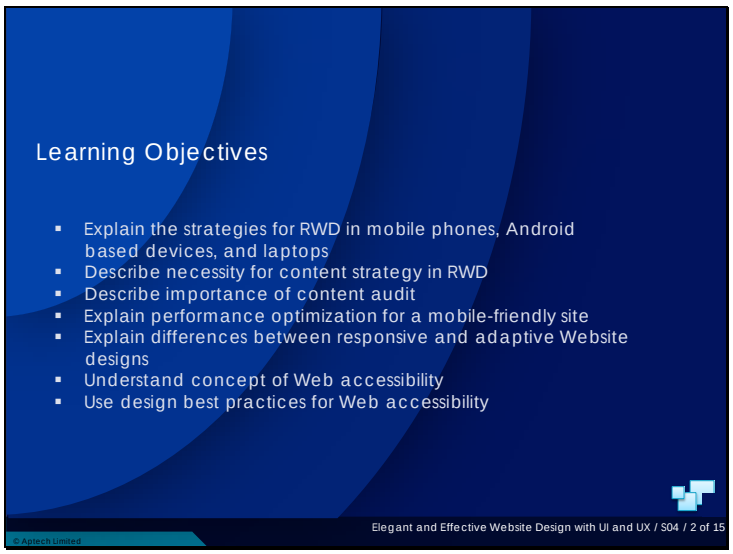
To teach this session, you should be well versed with challenges posed to UI/UX implementation and strategies that can overcome these challenges.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use slides and LCD projectors.

In-Class Activities

Follow the order given here during In-Class activities.

Slide 2

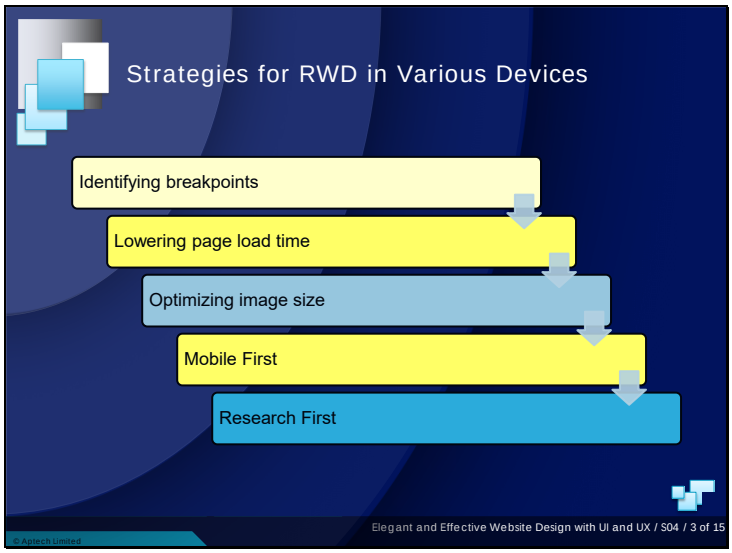


Instructions to the trainer:

- Give students a brief overview of the current session through the session objectives listed in Slide 2.

4.2 In-Class Explanations

Slide 3



Instructions to the trainer:

- Show students Slide 3 and begin the session with an introduction to Responsive Web Design (RWD).
- Ask students the meaning of Responsive Web Design. Wait for some time and then, reply that RWD is a method used in Web development that dynamically changes the appearance of a Website, depending on the screen size and orientation of the device being used. Tell students that this feature is useful because it makes a Website compatible on many devices.
- Why do we require strategies? Responsive design makes a Website mobile-friendly. It can improve the way it appears on devices with both large and small screens. A comfortable visual browsing experience automatically increases the amount of time visitors spend on the Website. Moreover, it can also help improve Website rankings in search engines.
- Explain that there are some strategies to implement RWD in various devices. They are as follows:
  - Identifying the breakpoints: These are the page widths that cause design elements to restructure. In between breakpoints, items usually change their size or flow, but at the breakpoints, there is a rapid change in configurations.
  - Keeping page load times low: CSS slows down the load times of their pages over each sort of gadget and increases the usability.
  - Optimizing image size: This technique requires large images to look good. It creates a problem with the same image with retina and other high-resolution kind of technologies as they become slow to load on lower resolution screen.
  - Mobile First: Minimizes amount of content and navigation to make a design useful. This helps to define the minimal configuration, and works their way back to their maximum case.

- Research First: Utilizes field research, examination, and other study strategies to comprehend which capacities are essential and which are pleasant to-have.

➢ For more information about RWD, refer to the following link: https://www.w3schools.com/html/html_responsive.asp

➢ For more information about why responsive design is important, refer to the following links:

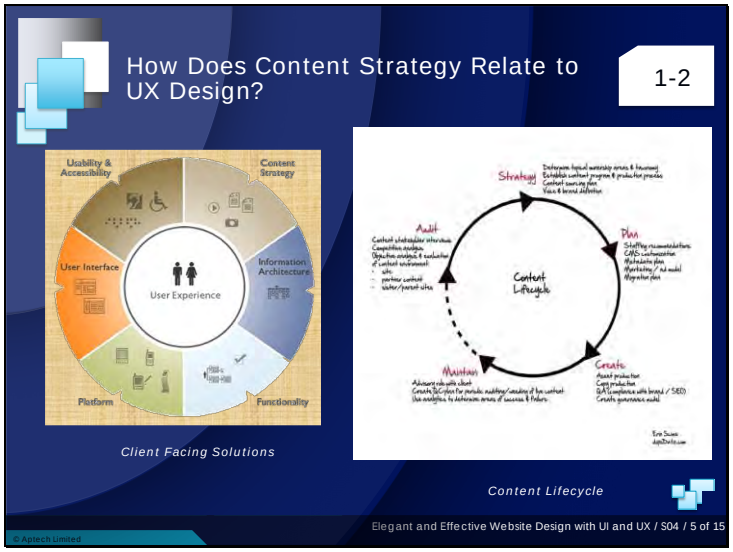
- https://www.webfx.com/web-design/why-responsive-design-important.html
- https://webservices.marketpath.com/digital-marketing-insights/8-reasons-to-have-a-responsive-web-design-infographic

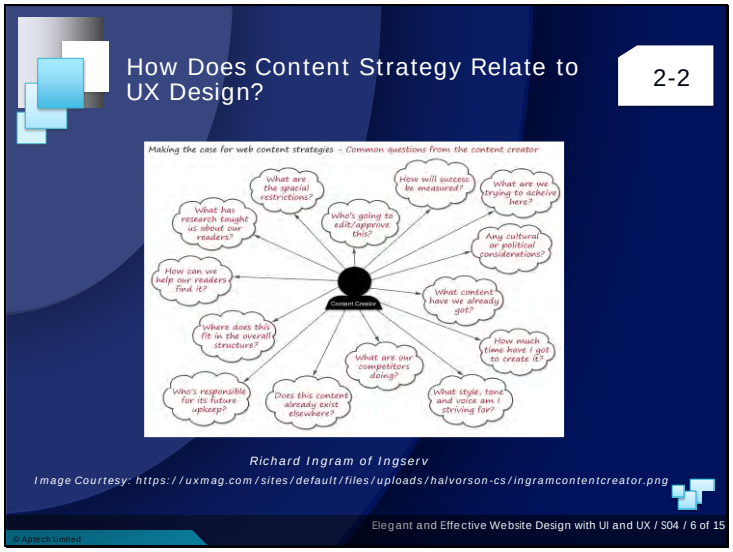
Slide 4

Instructions to the trainer:

- Show students Slide 4 and ask them if they are aware about the Content Strategy concept.
- Explain that Content Strategy is planning for the creation, delivery, and governance of useful content.
- Content is important because it defines and identifies user requirements.
- It comprises a core strategy which has four sub-units and two components:
  - The core technique characterizes how your substance will assist in meeting business objectives.
  - Substance recognizes what substance is obliged to effectively execute your core technique.
  - Structure concentrates on how substance is organized, composed, and accessed.
  - Work process or Workflow clarifies how individuals oversee and keep up substance every day.
  - Administration or Governance depicts the approaches, measures, and rules that apply to content and its lifecycle.
- For more information about Content Strategy in design, refer to the following link: https://www.uxbooth.com/articles/complete-beginners-guide-to-content-strategy/

Slides 5 and 6





Instructions to the trainer:

- Using Slides 5 and 6 explain how content strategy is related to UX design.
- There are a couple of diverse approaches to take a better look how the content strategy relates to UX design.
- IBM's 'Client Facing Solutions' infographic is distributed to exhibit the consultancy's UX system approach.
- Erin Scime of HUGE made a representation to show the content lifecycle. Erin is a content design director at Facebook, where she drives product UX for Portal and Portal TV. She founded HUGE's content strategy practice, which provided brands with smarter digital strategies to organize and manage their content.

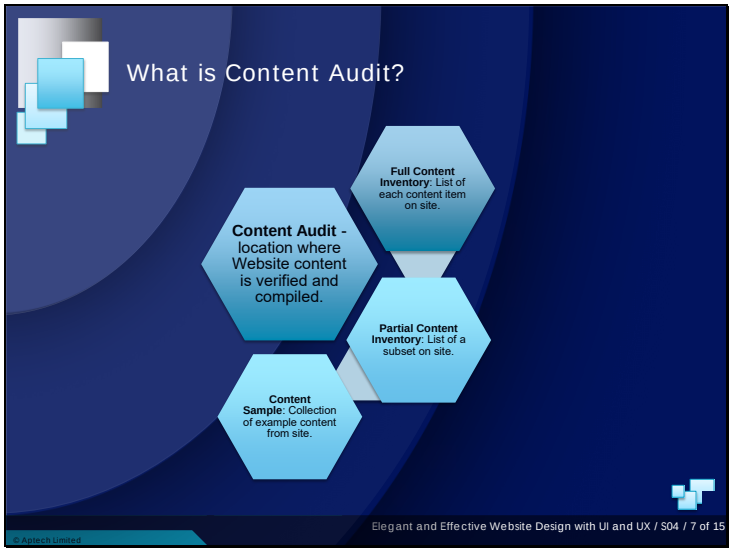
- The goal of content strategy is to create meaningful, cohesive, engaging, and sustainable content; all of which is achieved by planning, creation, delivery, and governance of content.
- Erin Scime identifies that there are five stages in the lifecycle: Audit, Strategy, Plan, Create, and Maintain.
- For more information about the relationship between content strategy and design, refer to the following links:
    - https://www.usability.gov/what-and-why/content-strategy.html
    - https://uxdesign.cc/content-strategy-in-ux-design-c2e41d19d447
    - https://uxmag.com/articles/content-strategy-and-ux-a-modern-love-story

    In-Class Question
    Ask students following question. Wait for a response before you give the answer.

    Question: What does the core technique characterize?
    Answer: The core technique characterizes how your substance will assist in meeting business objectives.

- Show students Slide 6 and tell them that Richard Ingram of Ingserv made this representation to show routes in which a UX group may work together with a substance strategist.
- Read out the questions on the image and explain the importance of each question.

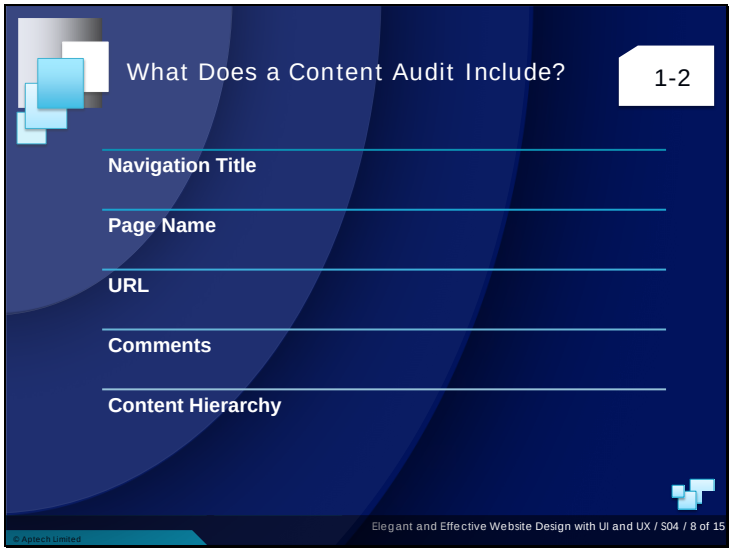
Slide 7

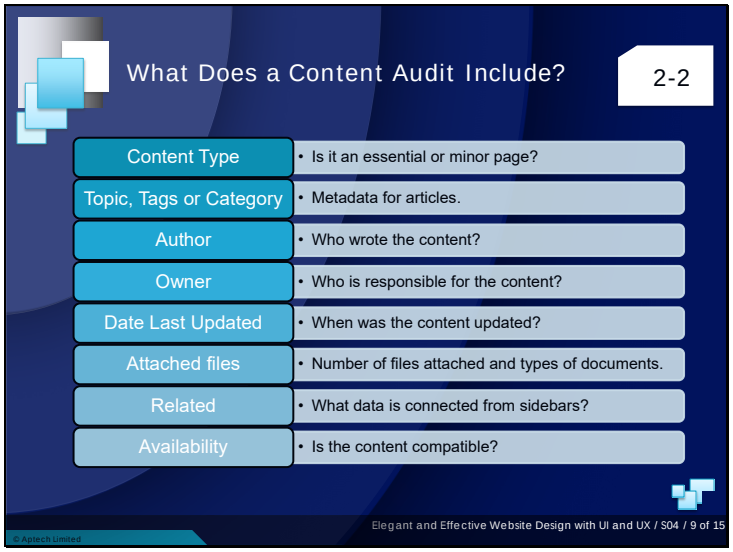


Instructions to the trainer:

- Show students Slide 7 and ask students if they have heard of the term ‘Content Audit’.
- Wait for their responses and then, tell students that a Content Audit is the action where all the content on a Website is checked and compiled into a big list.
- Generally, when we talk about ‘audit’, it means a verification of items or transactions. Similarly, in case of a Website, the content on a Website is audited to understand whether user requirements are being met and that all design processes are adhered to.
- There are three main types that can be performed in an audit:
- Full content inventory: A complete listing of each content item on the site. This may incorporate all pages with all advantages. For example, downloadable records and features.
- Partial content inventory: A complete listing of a subset on the site. A partial inventory includes the main few levels of a progressive site or the previous six months of articles. All areas of the site will be secured.
- Content sample: A fewer comprehensive collection of example content from the site.
- Content audit is usually recorded in spreadsheets so that individual points can be verified till completion.
- For more information about Content Audit, refer to the following link: https://uxmastery.com/how-to-conduct-a-content-audit/

Slides 8 and 9





Instructions to the trainer:

- Using Slides 8 and 9, tell students about the items that a content audit includes.
- Explain that content audit should be recorded in a spreadsheet, mainly because they are flexible.
- They are additionally remarkable at holding a lot of data in a genuinely reasonable manner.
- It is recommended that following information is collected for each page of the Website:
  - Navigation title: The principle's name route connection to the substance. For example, the connection title in the primary route.
  - Page name: The displayed page title.
  - URL: Display the URL or simply interface from the page name.
  - Comments: Notes and things to recall.

- Content hierarchy: Some method for demonstrating the essential relationship of the substance things.

➢ For more information about content audit, refer to the following links:
  - https://www.semrush.com/blog/content-audit-for-content-marketing-strategy/
  - https://uxmastery.com/how-to-conduct-a-content-audit/
  - https://uxplanet.org/ux-content-audit-step-by-step-guide-8e955cb35d1a

➢ Show students Slide 9 and tell them that there are other things that a content audit includes.

➢ Following data can also be included:

- Content Type: Is this an essential page, distribution, news story, article, method, FAQ, or something else?
- Topic, tags or category: Metadata for products, articles, news, blog posts.
- Author: Who wrote this content?
- Owner: Who is responsible for the content?
- Date last updated: At what point was the content last overhauled?
- Attached files: Number of files attached and what sort of documents would they say they are?
- Related: What data is connected from sidebars or Related Links boxes on this page?
- Availability: Is the content accessible to desktop, versatile, and/or application clients? Is the substance syndicated to different destinations?

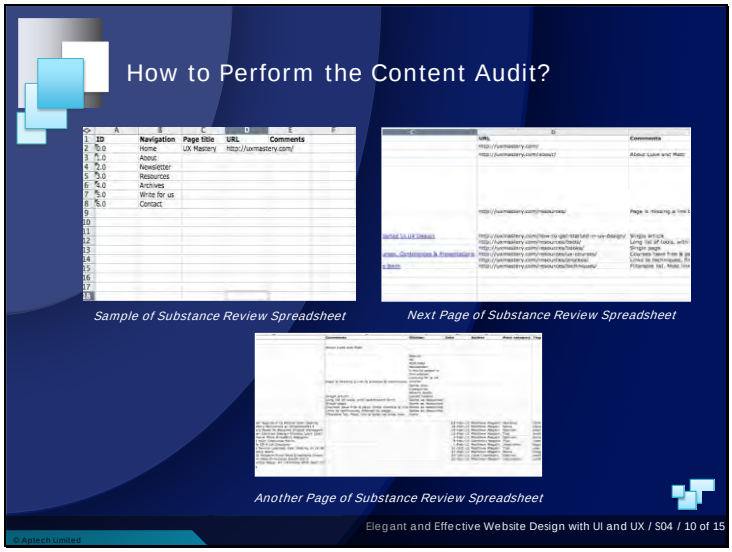
➢ For more information about content audit, refer to the following link: https://uxplanet.org/ux-content-audit-step-by-step-guide-8e955cb35d1a

In-Class Question

Ask students following question. Wait for a response before you give the answer.

Question: In which type of data are metadata for articles classified?
Answer: Category, topic, or tags.

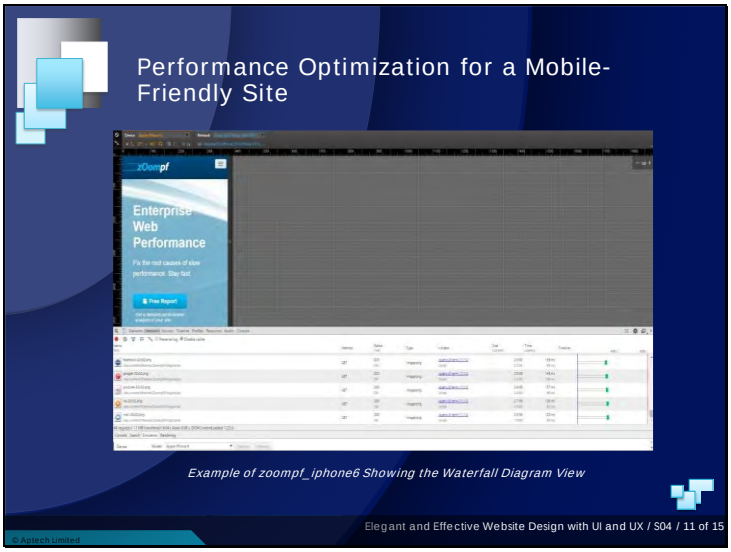
Slide 10



Instructions to the trainer:

- Show students Slide 10 and tell them that they will learn the steps to perform a content audit.
  - The first step is to list the main pages or segments of the site in the first section of a spreadsheet.
  - Start the content audit by creating a list of the top-level items—this will often match the primary navigation.
  - Choose one page to begin with and jump into it, capturing the information decided upon for that page.
  - Make a list of each page if it has sub-pages and repeat the process for each of these in turn.
  - Jump into any list of sub-pages and complete that section before moving on.
  - Simply keep going until everything is explored and required information is noted.
- Capturing the content of a site in a spreadsheet will help make informed design decisions.

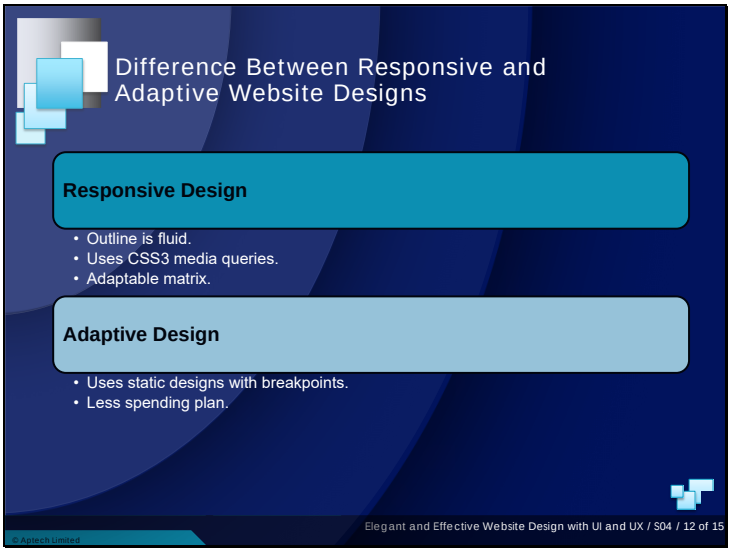
Slide 11



Instructions to the trainer:

- Show students Slide 11 and tell them that there are steps to conduct performance optimization for a mobile-friendly site.
- Explain that measuring mobile site performance includes following steps:
  - The first step to improving mobile performance is to measure the start.
  - Use Google Chrome's built-in Developer Tools.
  - Select a device; for example, Apple iPhone 6.
  - Enter a site address in the Address bar. A site rendered as iPhone 6 appears.
  - View the performance stats, such as total page load time, size of the page, and the total number of requests.
  - Click the Network tab to view the waterfall diagram. Point to the image on the slide.
- To optimize images for mobile devices:
  - Specify the viewport meta tag in the header section of the Web page. This informs the mobile browser if the site is responsive. If the site is responsive, it should not auto-scale a desktop site to mobile resolution.
  - Use the CSS media queries and the background-image style wherever possible to render mobile images.
- Future HTTP/2: Provides server support to build a responsive and adaptive well-disposed site to satisfy the Google crawler.

Slide 12



Instructions to the trainer:

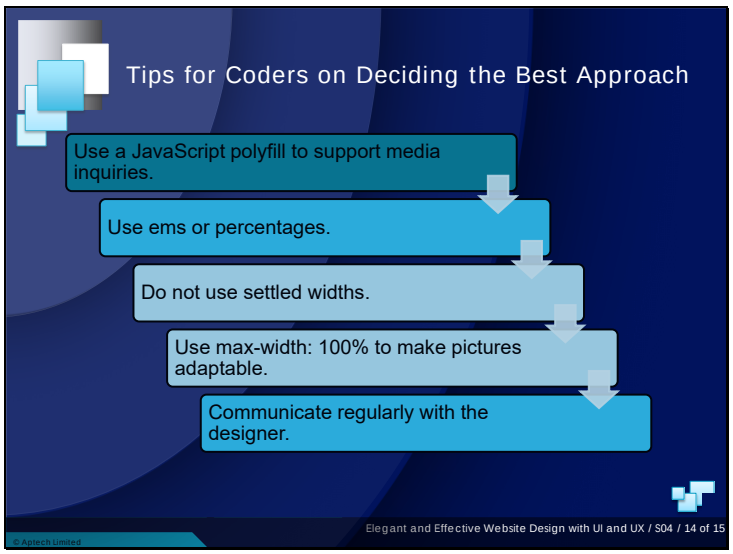
- Show students Slide 12 and tell them that we will learn about the difference between responsive and adaptive Website designs.
- Ask students if they know what an adaptive Website design is. Wait for an answer and then, reply that a responsive design is dynamic and adapts to the screen size irrespective of the device. This is because it uses CSS media queries to change styles based on the target device. Adaptive design, on the other hand, uses static layouts based on breakpoints that do not respond after they are loaded.
- Genuine responsive outline is fluid; utilizing CSS3 media queries to react to any screen sizes. With the utilization of this CSS3 module, an adaptable matrix can be made where content can wrap and pictures can fit to conform alongside your browser.
- With responsive configuration, the utilization of media questions additionally opens up a scope of alternatives that take into consideration designs to change depending on screen size. Adaptive design utilizes a progression of static designs taking into account breakpoints.
- Responsive fluid outline may give users an ideal experience regardless of which device they may use to view the configuration. The adaptive design methodology may work better for clients with a less spending plan as it would require formats for a few screen sizes as opposed to make arrangements for an ideal affair for all.
- For more information about responsive and adaptive designs, refer to the following link: https://www.uxpin.com/studio/blog/responsive-vs-adaptive-design-whats-best-choice-designers/.

Slide 13

Instructions to the trainer:

- Show students Slide 13 and tell them that we will discuss some tips for designers on deciding the best approach for designing Websites.
- Further, mention about coding confinements and streamlining that can help developers.
- Determine distinctions and similarities between page components and create normal examples for page layouts. This methodology will spare time and give a predictable vibe to the site.
- When planning versatile, outline for these six normal screen widths: 320, 480, 760, 960, 1200, and 1600.
- Be accessible for QA or a starting walk-through of the coded documents to guarantee that every page renders.
- For more information, refer to the following links:
  https://99designs.com/blog/trends/ux-design-trends/
  https://userguiding.com/blog/ux-ui-trends/
  https://trends.uxdesign.cc/

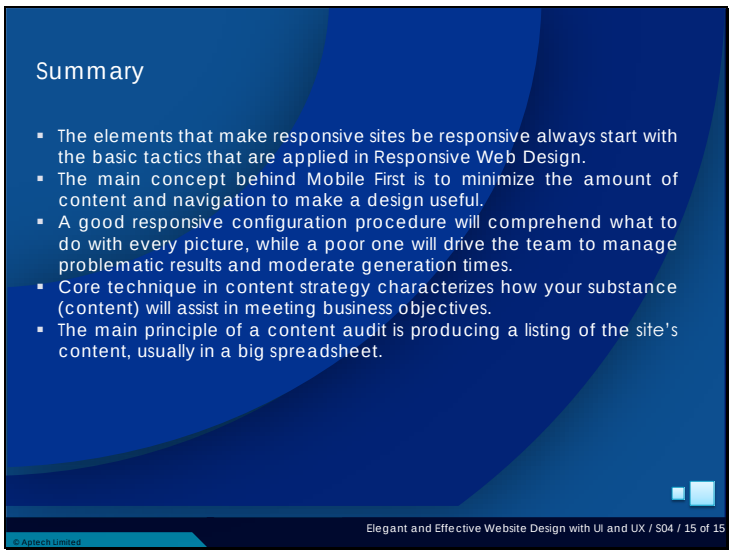
Slide 14



Instructions to the trainer:

- Show students Slide 14 and tell them that we will discuss some tips for coders on deciding the best approach for designing Websites.
- Media inquiries do not work in Internet Explorer 8 and lower versions. Utilize a JavaScript polyfill such as CSS3-MediaQueries.js to support media inquiries in old legacy programs. However, polyfills can add to the record size and that JavaScript code can be shut by clients.
- For adaptable grid layouts in Responsive Design use ems or percentages. Keep away from settled widths.
- In responsive outline, utilize max-width: 100% to make pictures, features and HTML5 canvas adaptable. When the viewpoint gets smaller any media will scale down as indicated by its compartment width. In any case, max-width does not work with implanted media.
- Keep in steady correspondence with the designer. Clarify any queries in case of confusion to avoid fixes later.

Slide 15



Instructions to the trainer:

- Using Slide 15, summarize the session by reading out each point on the Slide.

Session 5: Using Common RWD Patterns in Mobile Designs

5.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

5.1.1 Teaching Skills

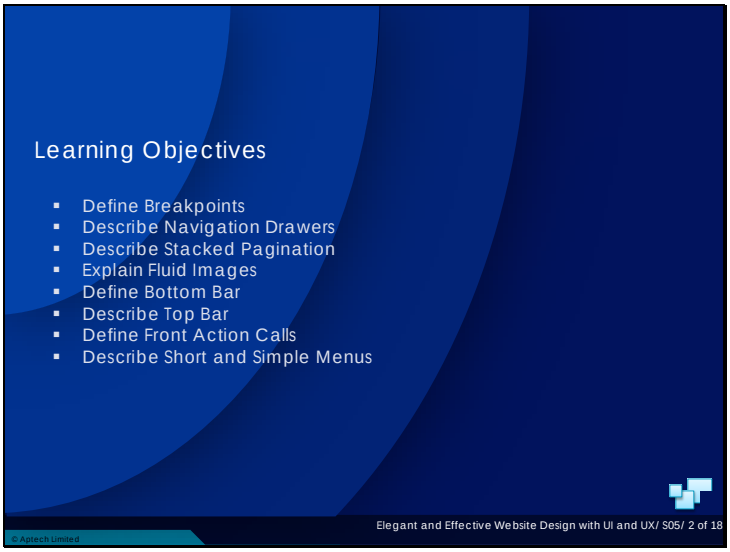
To teach this session, you should be well versed with User Interface and User Experience concepts and design. You should be familiar with challenges that are posed to UI/UX implementation.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use Slides and LCD projectors.

In-Class Activities

Follow the order given here during In-Class activities.

Slide 2



Instructions to the trainer:

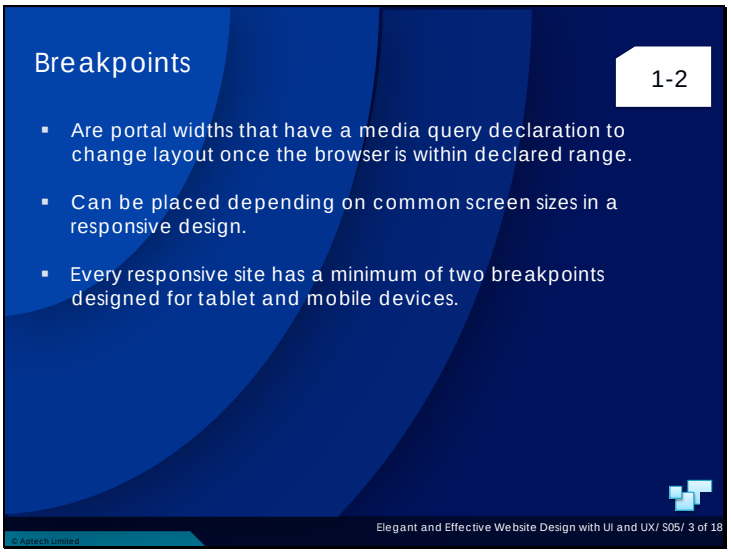
- Begin the session by introducing the RWD patterns.
- Conclude this screen by listing the objectives of the session.

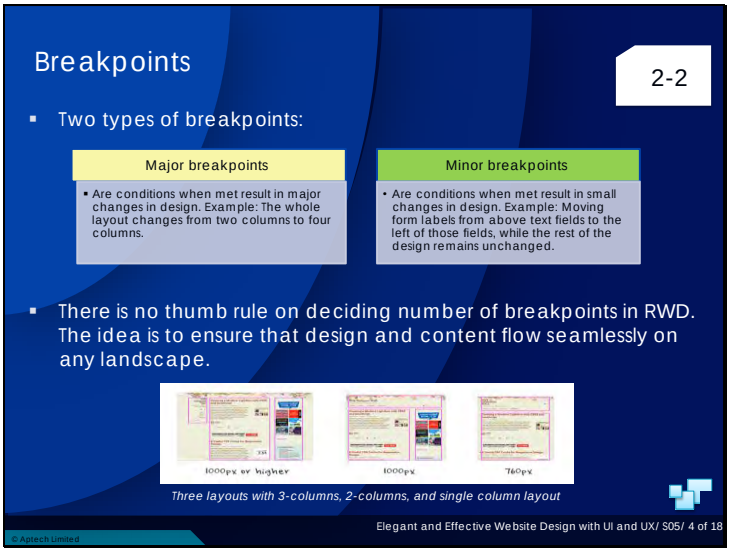
Quick Tips:

Before commencing the session, you could ask students to express their knowledge of the user interfaces.

5.2 In-Class Explanations

Slides 3 and 4

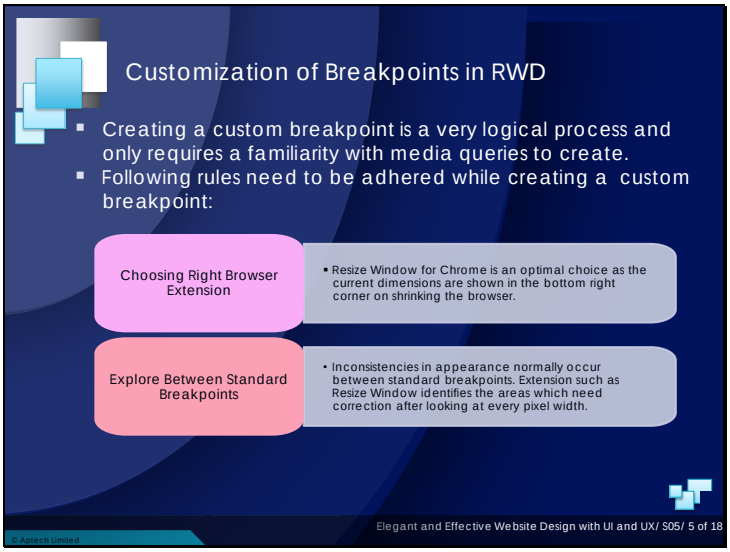




Instructions to the trainer:

- Show Slides 3 and 4. Explain what is meant by breakpoints and describe its types.
- Explain major and minor breakpoints with suitable examples.

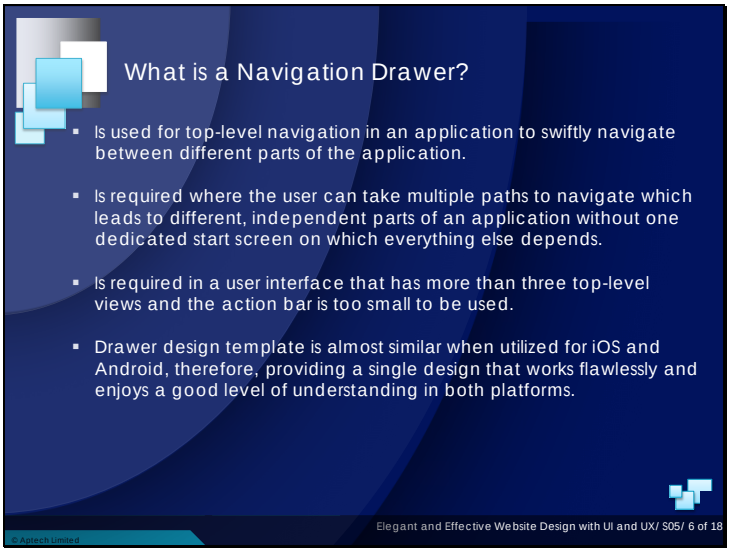
Slide 5



Instruction to the trainer:

- Explain the rules to create a customized breakpoint.

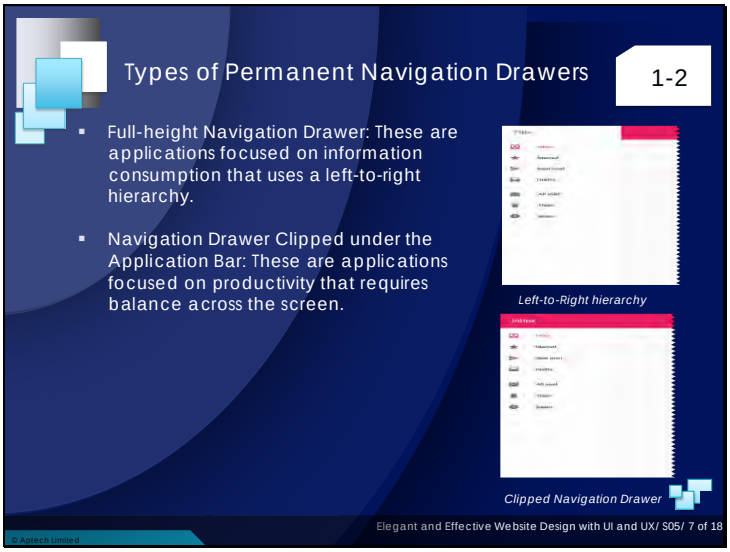
Slide 6



Instruction to the trainer:

- Explain to the students what a navigation drawer is and why it is required.

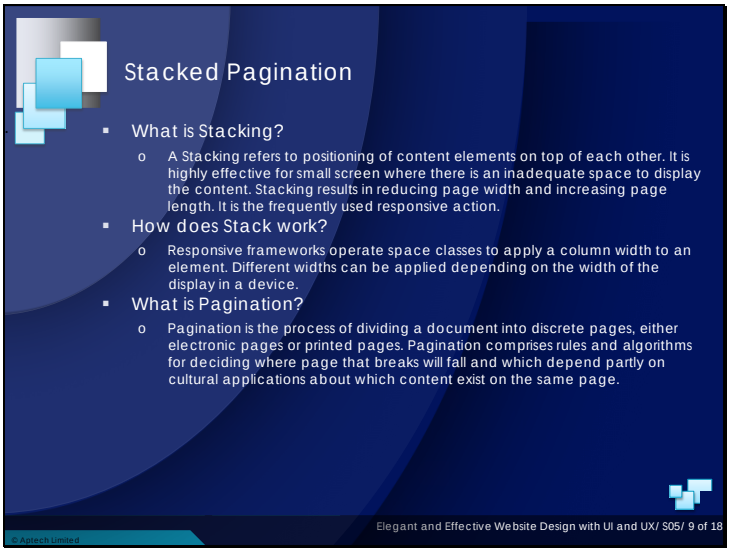
Slides 7 and 8



Instruction to the trainer:

- Explain using slides 7 and 8 different types of permanent navigation drawers with examples.

Slide 9



Instructions to the trainer:

- Proceed to explain stacked pagination. Explain what is meant by stacking and how a stack works.
- Then, explain to the students what is meant by pagination.

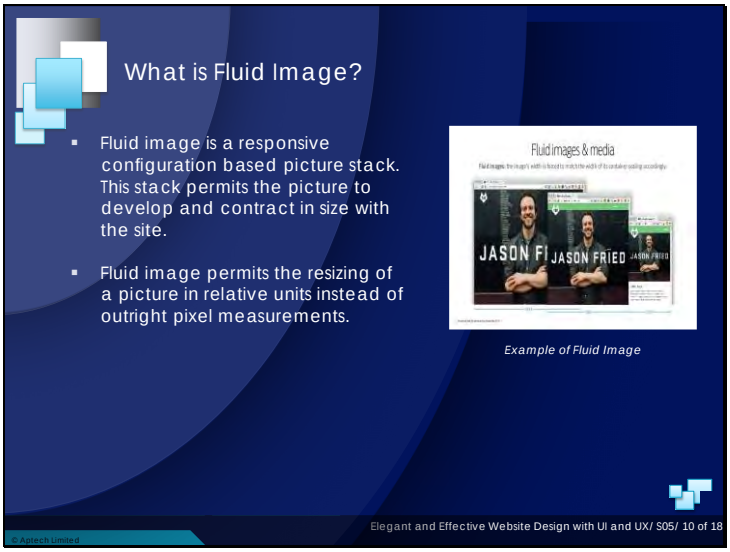
In-Class Question:

Pose a question to the students to break the monotony. This will help you in reviewing their understanding of the topic. When is a navigation drawer used in an application?

Answer:

A navigation drawer finds a usage when a user interface has more than three top-level views.

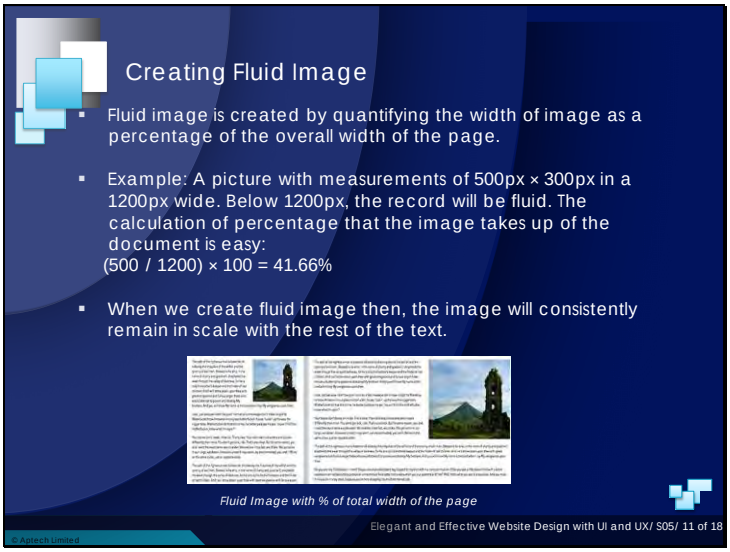
Slide 10



Instruction to the trainer:

- Explain about fluid images with a few examples for better understanding.

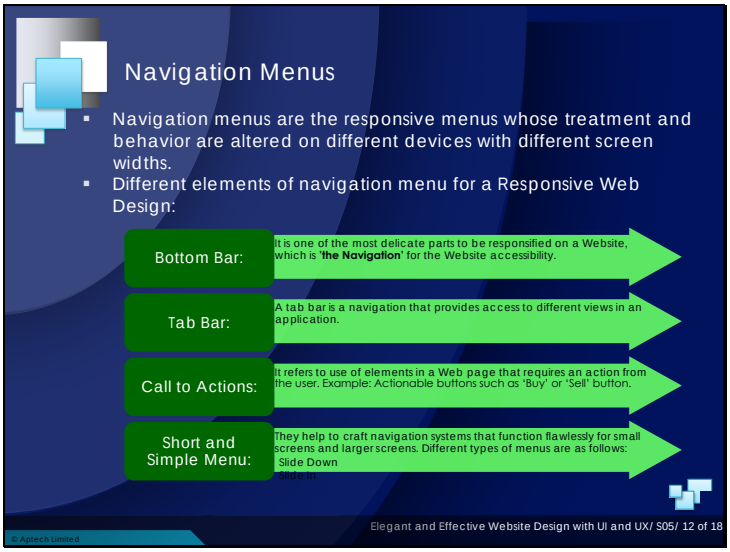
Slide 11



Instruction to the trainer:

- Explain to the students how to create fluid images. Describe the given example.

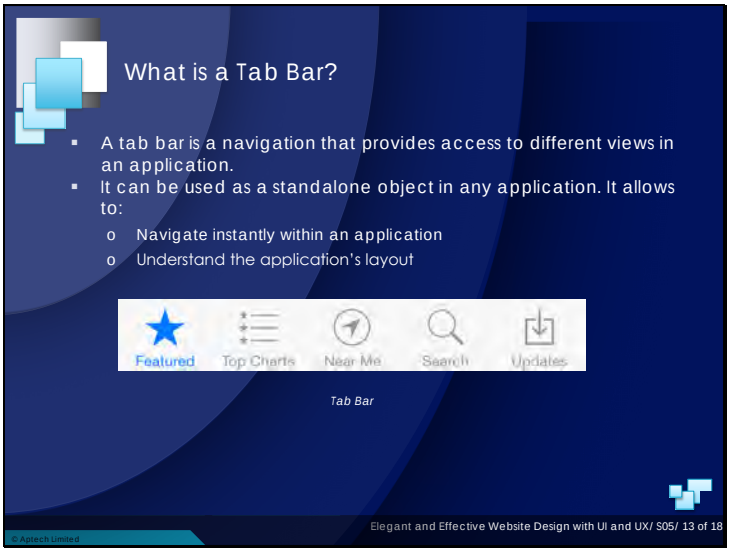
Slide 12



Instructions to the trainer:

- Explain to the students what a navigation menu is.
- Describe different elements of navigation menu for responsive Web design.

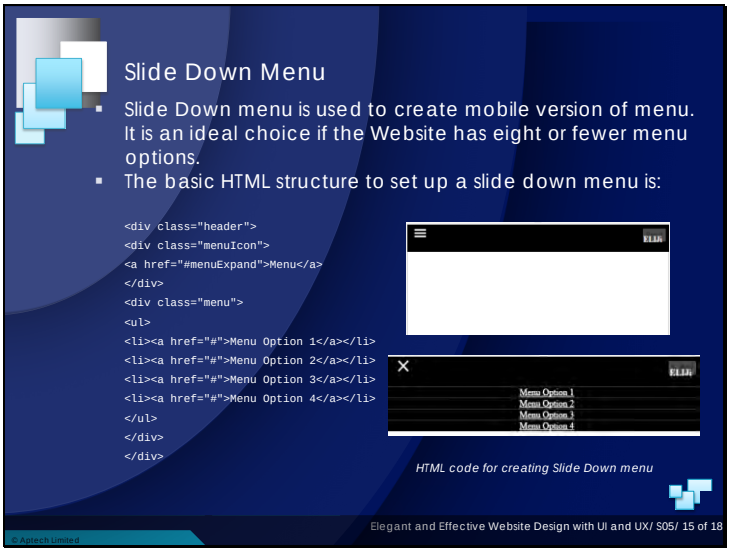
Slides 13 and 14



Instructions to the trainer:

- Explain tab bar to the students by telling that it is a navigation menu that provides access to different views of the application. Provide some examples to illustrate usage of tab bar.
- Then, proceed to explaining the tab bar in RWD.

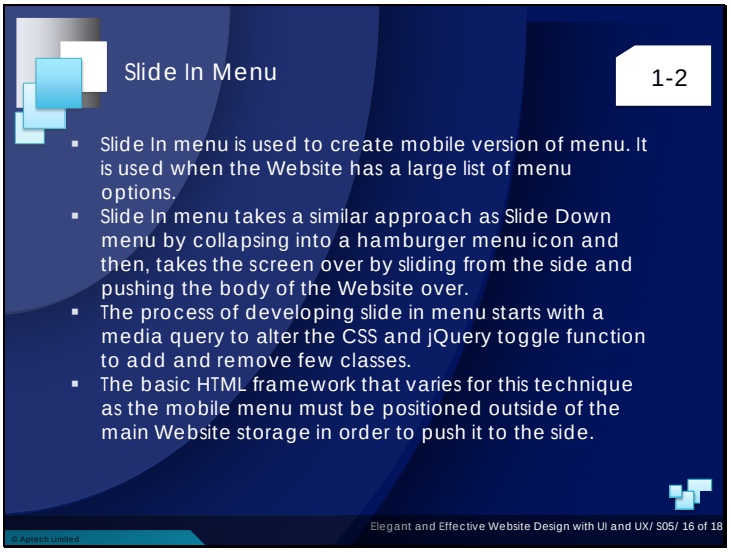
Slide 15

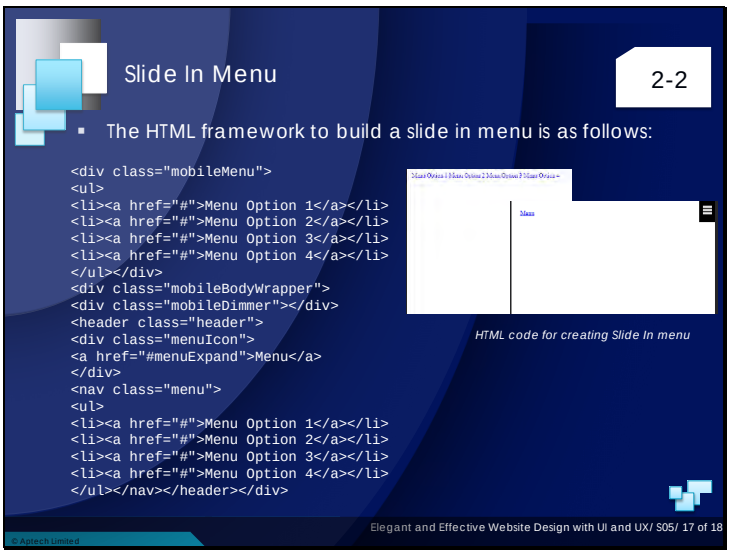


Instructions to the trainer:

- Explain slide down menu to the students with examples.
- Explain the basic HTML structure to set up a slide down menu.

Slides 16 and 17

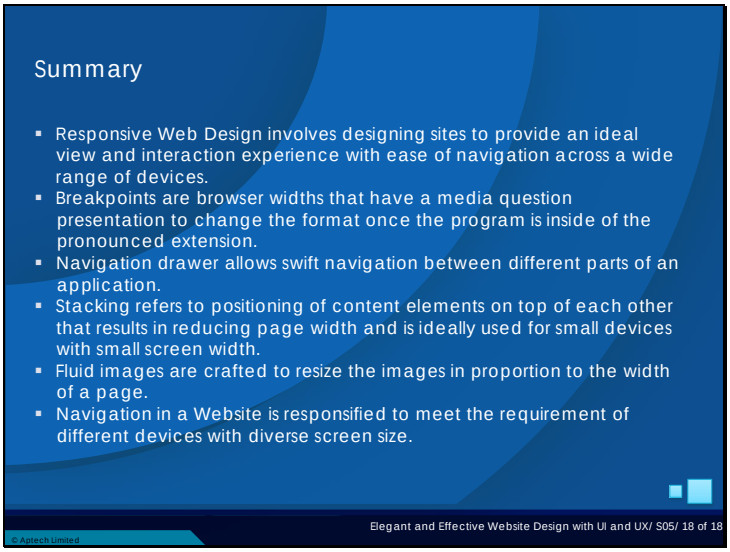




Instructions to the trainer:

- Explain using slides 16 and 17 the slide in menu with examples and describe the procedure to create this type of menu.
- Explain the basic HTML framework to build a slide in menu.

Slide 18



Instructions to the trainer:

- Summarize the session.
- Highlight the key points covered in the session and provide an introduction of the next session.
- Facilitate a group discussion; ask open-ended questions, in relation to the session that was conducted.
- Invite responses from the participants.

Session 6: Usability Studies in Responsive Web Design

6.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

6.1.1 Teaching Skills

To teach this session, you should be well versed with usability studies related to RWD.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use Slides and LCD projectors.

In-Class Activities

Follow the order given here during In-Class activities.

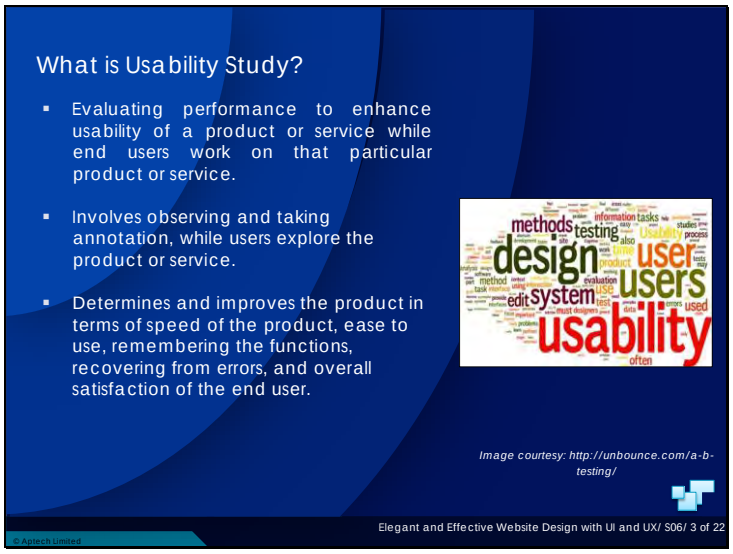
Slide 2

Instructions to the trainer:

- Give students a brief overview of the current session through the session objectives listed in Slide 2.

6.2 In-Class Explanations

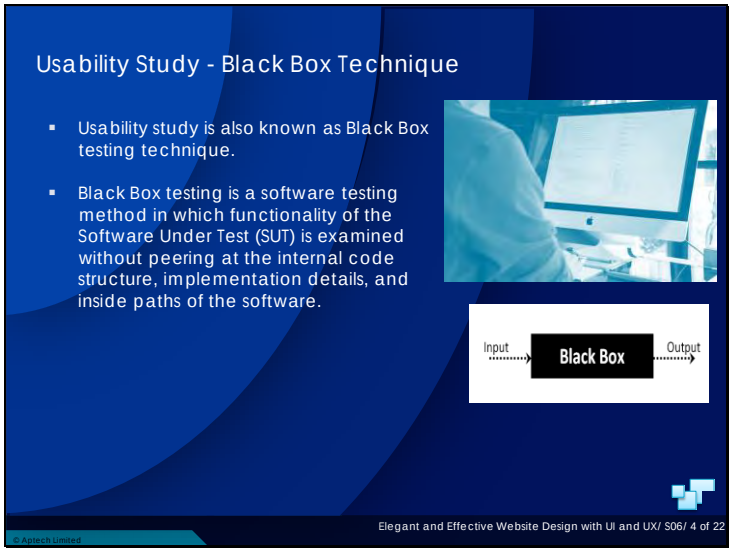
Slide 3



Instructions to the trainer:

- Explain what a usability study is. Provide some examples where a usability study can be used.

Slide 4

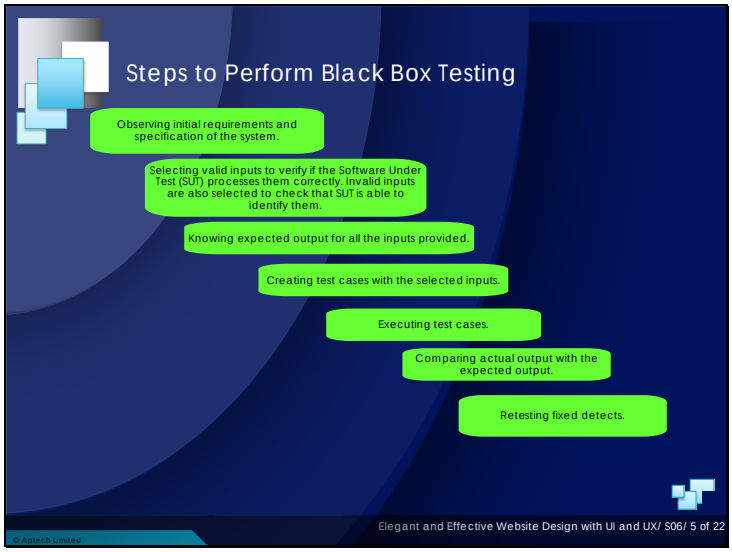


Instructions to the trainer:

- Mention to the students that usability study is also known as black box testing and then, define it.
- Explain the goal of usability study.
- Refer to following links for more information:

https://www.nngroup.com/articles/usability-testing-101/
https://www.interaction-design.org/literature/topics/usability-testing
https://www.sciencedirect.com/topics/computer-science/usability-study

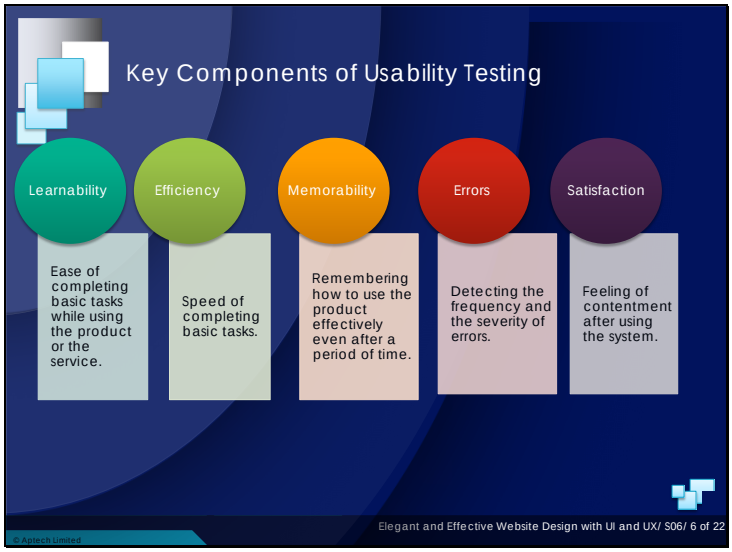
Slide 5



Instructions to the trainer:

- Show Slide 5 and explain the steps to perform black box testing.

Slide 6



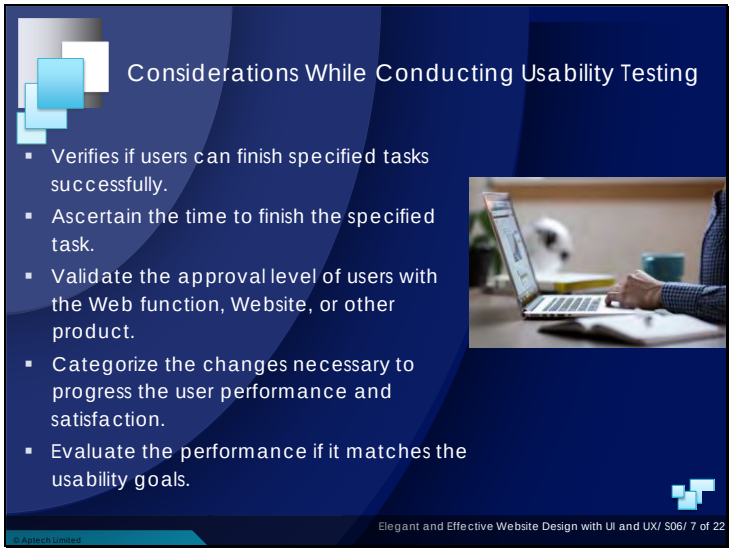
Instructions to the trainer

- Using Slide 6, describe the key components of usability testing so that students know the importance of performing testing of an application or Website.

- Refer to following links for more information:

  https://www.nngroup.com/articles/usability-testing-101/
  https://www.interaction-design.org/literature/topics/usability-testing
  https://www.sciencedirect.com/topics/computer-science/usability-study

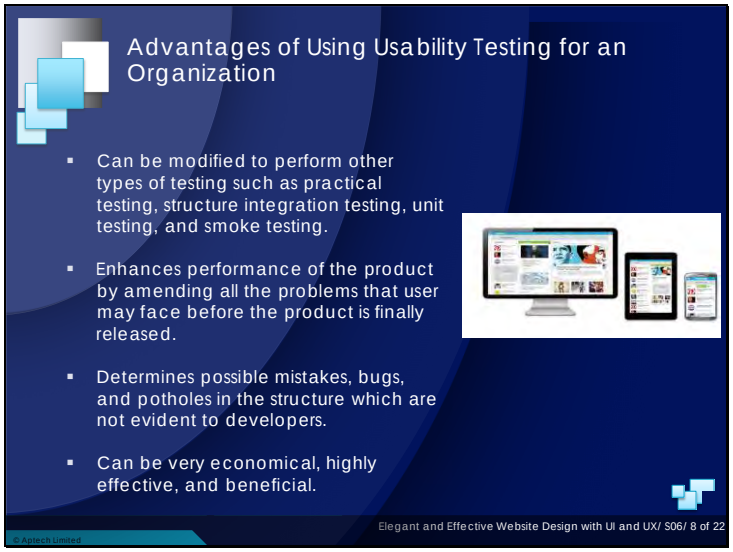
Slide 7



Instructions to the trainer:

- Show Slide 7 and explain different considerations that should be kept in mind while conducting usability testing.

Slide 8



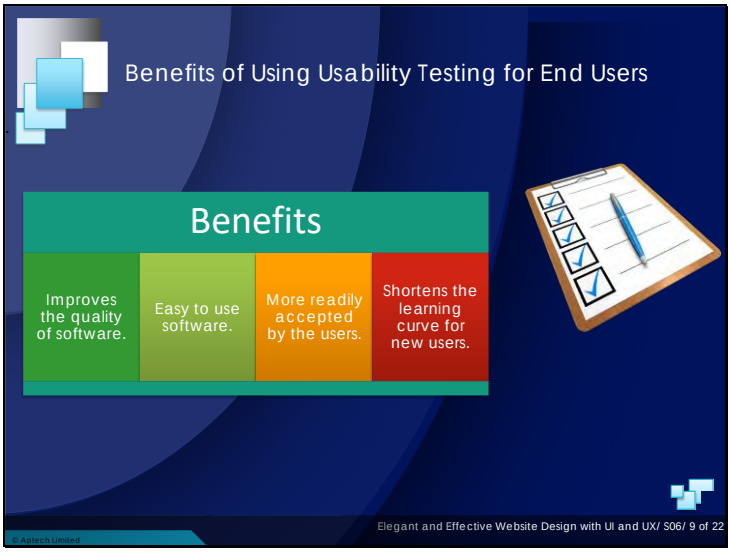
Instructions to the trainer:

- Proceed to explain the advantages of using usability testing for an organization.

In-Class Question:
Pose a question to the students to break the monotony. This will help you in reviewing their understanding of the topic.

Question: Which software testing method is used to examine the Software Under Test (SUT) without peering at the internal code structure, implementation details, and internal paths of the software?
Answer:
Black Box testing.

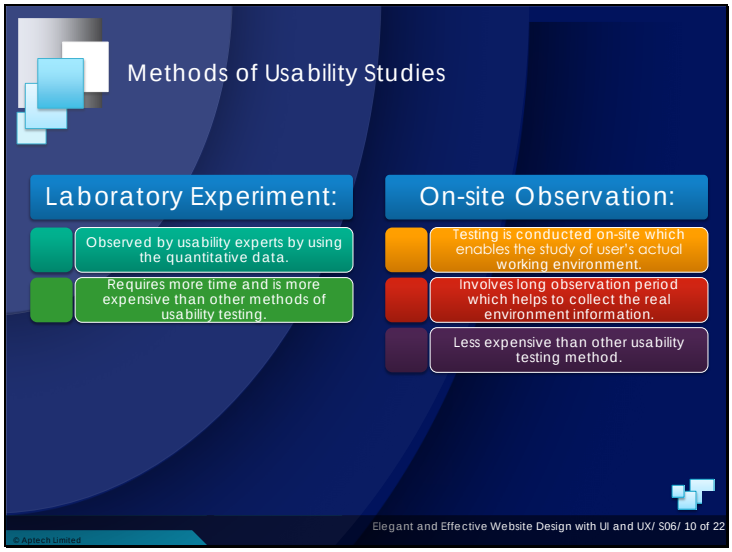
Slide 9



Instructions to the trainer:

- Explain benefits of using usability testing for end users.

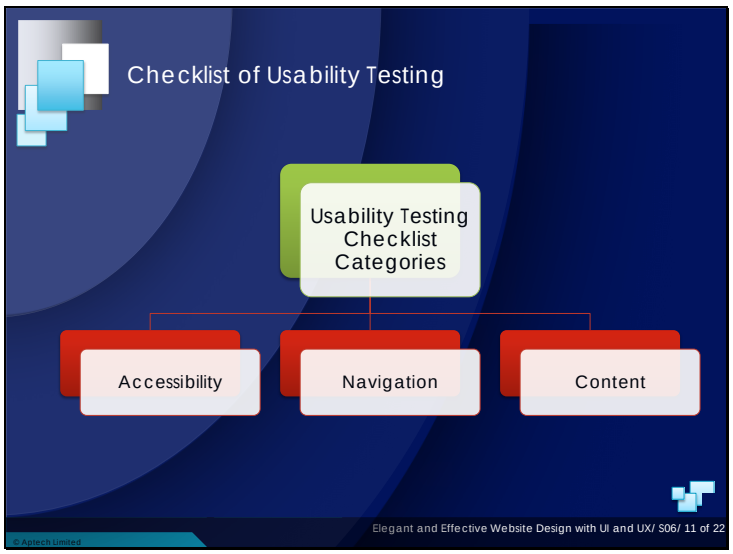
Slide 10



Instructions to the trainer:

- Explain different methods of performing usability studies and advantages of each method.
- Divide the students into two groups, say 'A' and 'B' for group discussion, 'A' group will support the laboratory experiment method and the 'B' group will support the on-site observation method.
- Ask them to convince the other group that the method you are supporting is the right choice for the usability study.

Slide 11



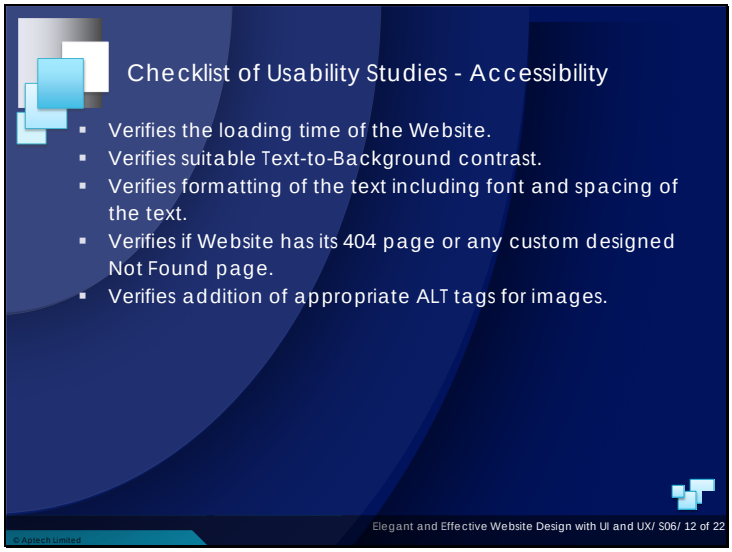
Instructions to the trainer:

- Explain to the students that one should adhere to a checklist while performing usability testing.
- Also, mention that the checklist is categorized into three parts, namely, accessibility, navigation, and content.

- Refer to the following links for more information:

https://www.d.umn.edu/itss/training/online/usability/checklist.html
https://www.socialmediatoday.com/news/is-your-website-user-friendly-a-25-point-website-usability-checklist-info/528678/
https://www.researchgate.net/publication/308339165_Responsive_Web_Design_Testing_Usability_of_Mobile_Web_Applications

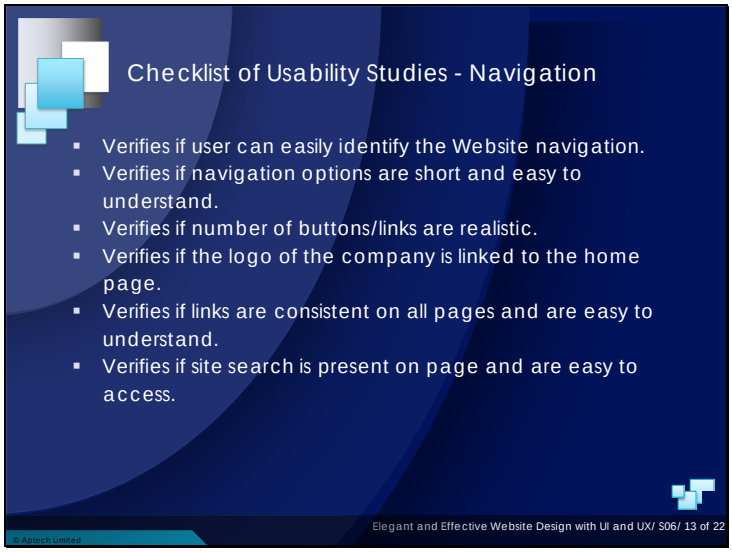
Slide 12



Instructions to the trainer:

- Explain to the students how to verify if an application or Website is accessible by using the accessibility checklist parameters.

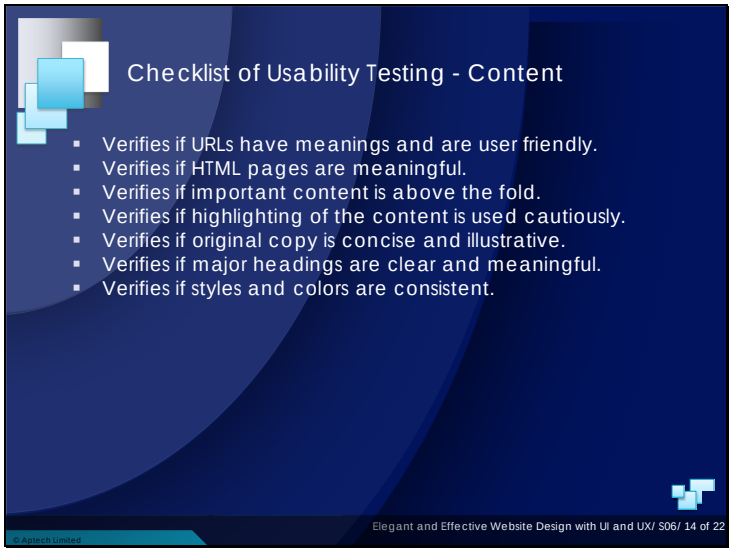
Slide 13



Instructions to the trainer:

- Explain to the students how to verify if an application or Website has appropriate navigation by using the navigation checklist parameters.

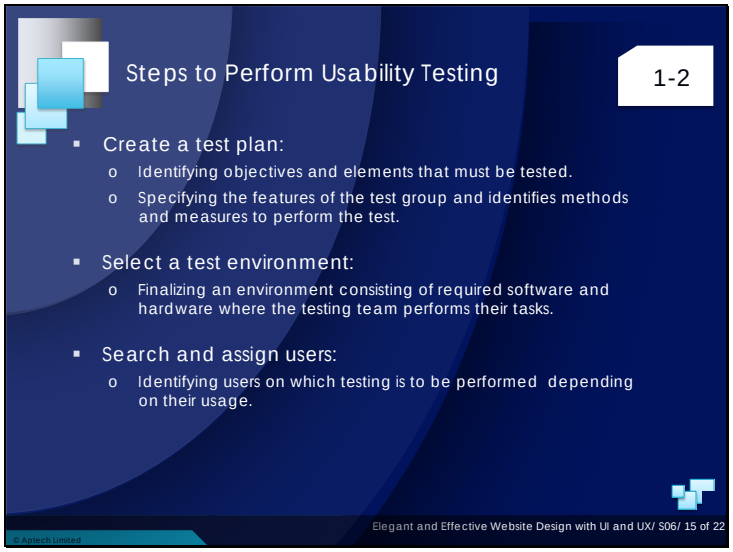
Slide 14

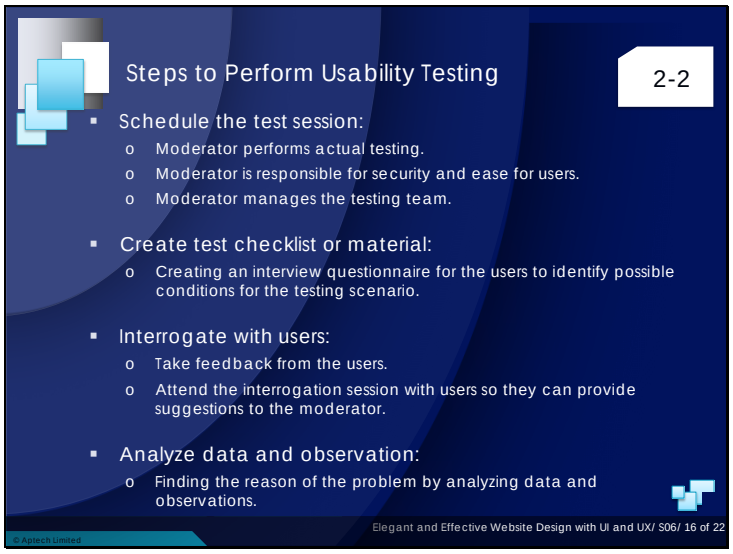


Instructions to the trainer:

- Explain to the students how to verify the if an application or Website has appropriate content by using the content checklist parameters.

Slides 15 and 16

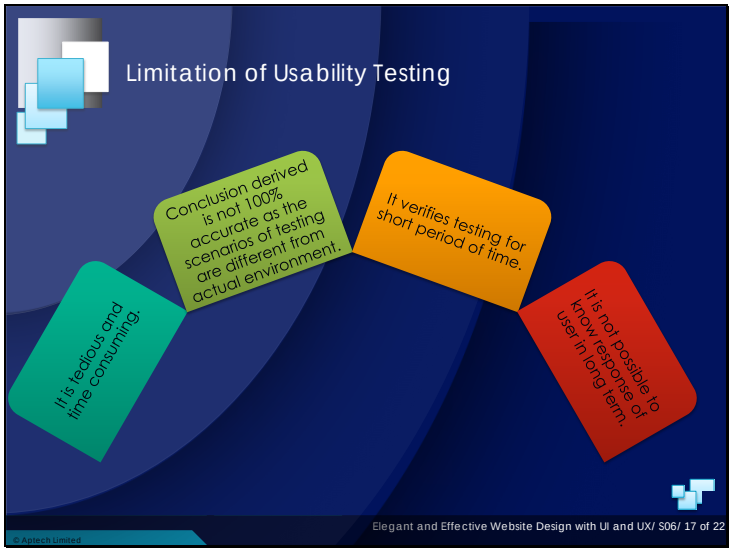




Instructions to the trainer:

- Show Slides 15 and 16. Explain the steps to perform the usability testing. Elaborate using a few examples for each step.

Slide 17



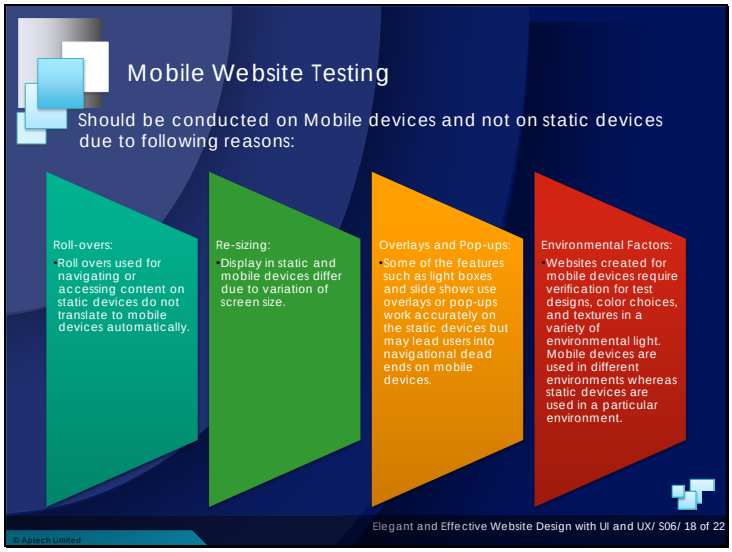
Instructions to the trainer:

- Explain to the students about the limitations of usability testing.

- Refer to following links for more information:

http://www.peri.net.ni/eValued/tutorial/usability_studies.htm
https://u-tor.com/topic/advantages-of-usability-testing
https://uxdesign.cc/10-pros-and-cons-of-user-testing-for-ux-ui-designers-571e56836778?gi=103cb4a05df2

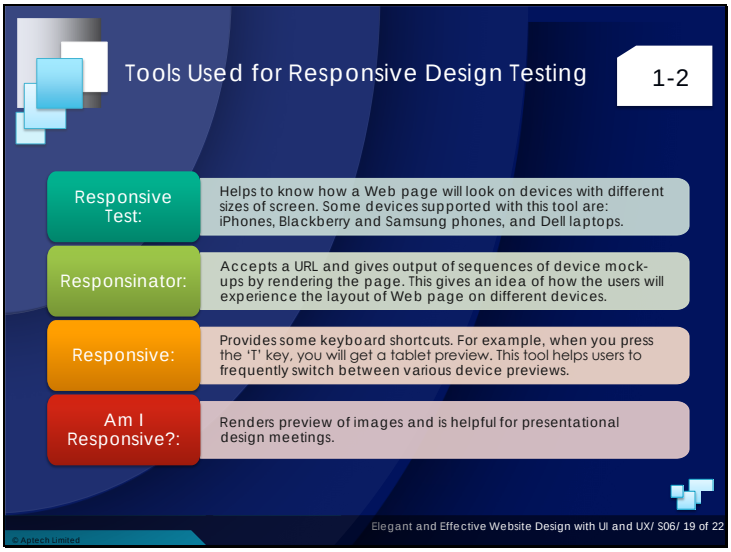
Slide 18

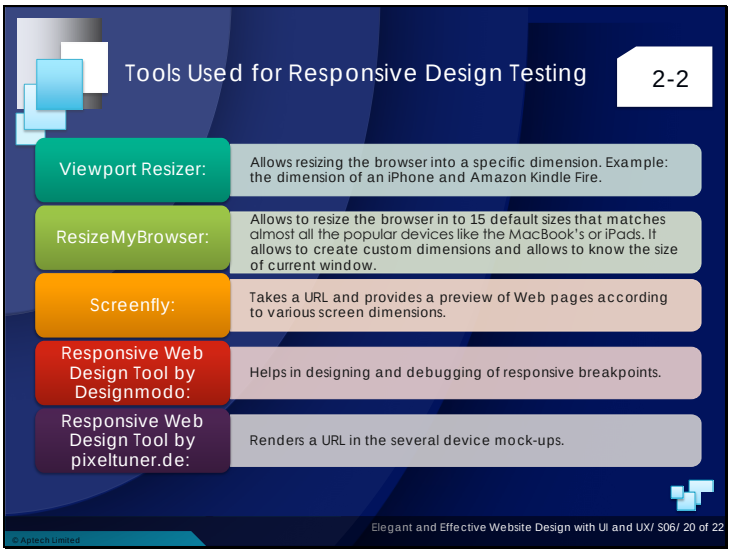


Instructions to the trainer:

- Explain to the students about mobile Website testing and why it is not conducted on the static devices.

Slides 19 and 20

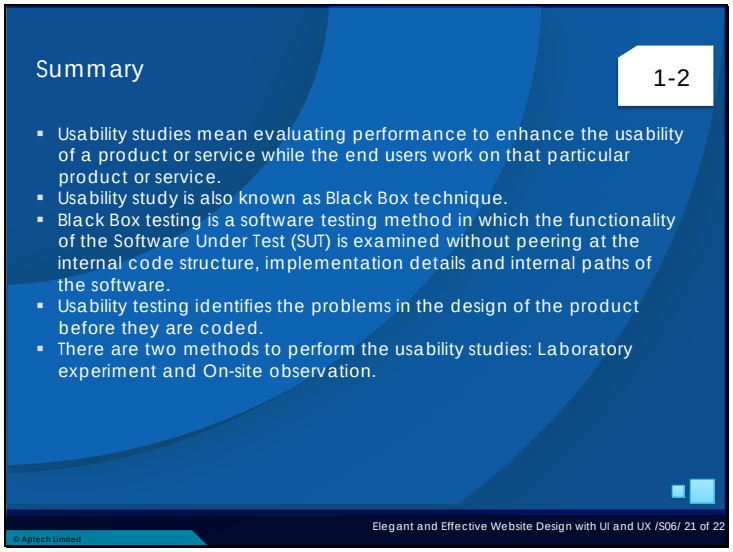


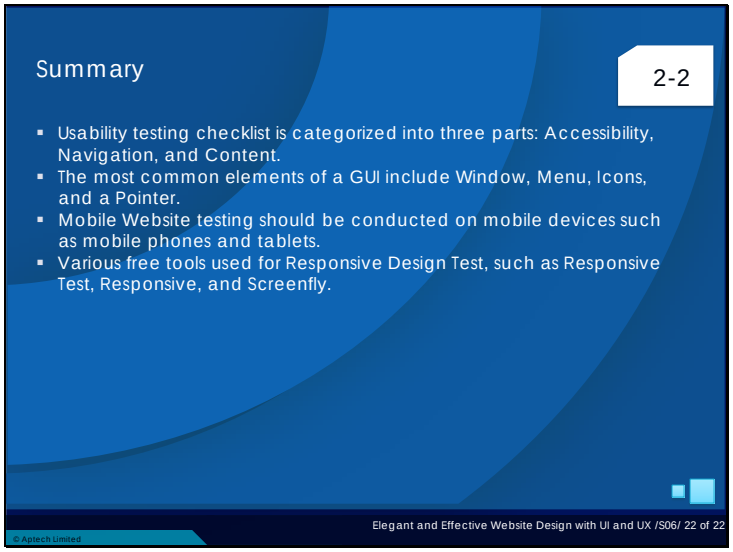


Instructions to the trainer:

- Show Slides 19 and 20 and explain the tools listed on these slides.

Slides 21 and 22





Instructions to the trainer:

- Show Slides 21 and 22. Summarize the session.
- Highlight the key points covered in the session.
- Facilitate a group discussion; ask open-ended questions, in relation to the session that was conducted.
- Invite responses from the participants.

Session 7: Understanding Figma Tool

7.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

7.1.1 Teaching Skills

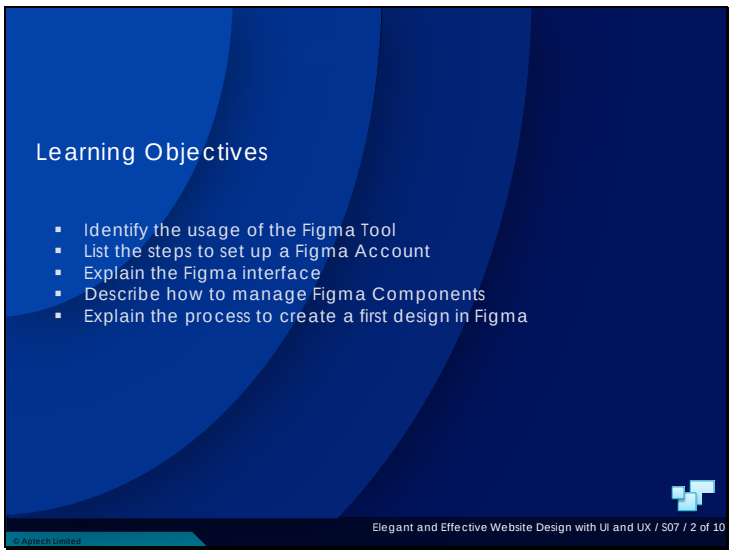
To teach this session, you should be well versed with Figma tool and its features.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use slides and LCD projectors.

In-Class Activities

Follow the order given here during In-Class activities.

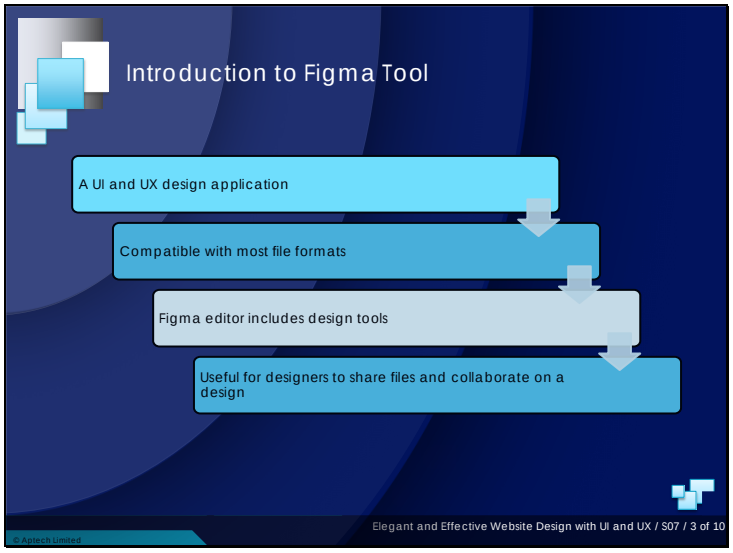
Slide 2



Instructions to the trainer:

- Give students a brief overview of the current session through the session objectives listed in Slide 2.

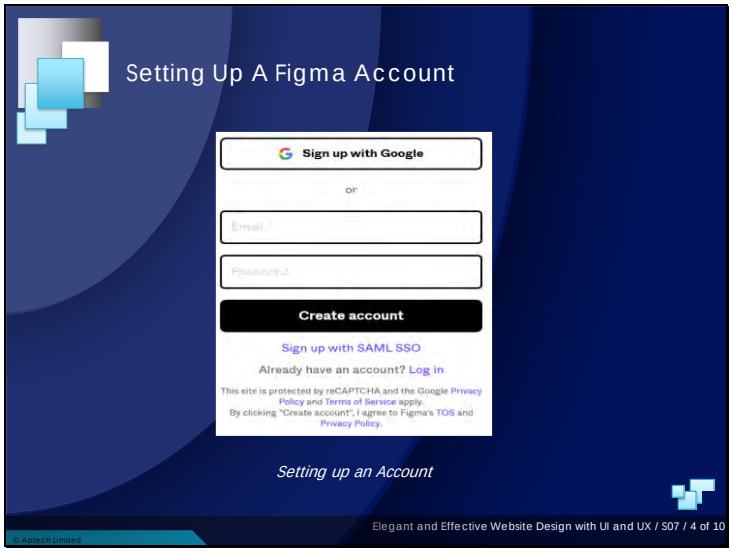
7.2 In-Class Explanations
Slide 3



Instructions to the trainer:

- Show students Slide 3 and begin the session with an introduction to the Figma Tool.
- Tell students that Figma is a Web-based tool used to edit graphics, design applications for mobile phones, and Websites. Multiple users can collaborate real-time on a single project because it is cloud-based. It also works on a variety of devices and operating systems.
- Figma is compatible with many file formats; for example, static image files (.png, .jpg), animated files (.gif), vectors, and Sketch (.sketch). These files can be imported and exported easily by drag-and-drop, and copy-paste methods.
- The Figma editor is an important part of the tool that includes a variety of design tools, such as framing and slicing tools, text tools, contextual tools, and so on.
- Another important feature of Figma is that designers can share files and invite viewers and editors to collaborate on a design. During collaboration or review, the design can be opened in presentation mode to preview designs and modify it in real time as the review takes place.
- For more information about the Figma tool, refer to following links:
  https://www.figma.com/
  https://www.youtube.com/watch?v=dXQ7IHkTiMM
  https://www.youtube.com/watch?v=Cx2dkpBxst8

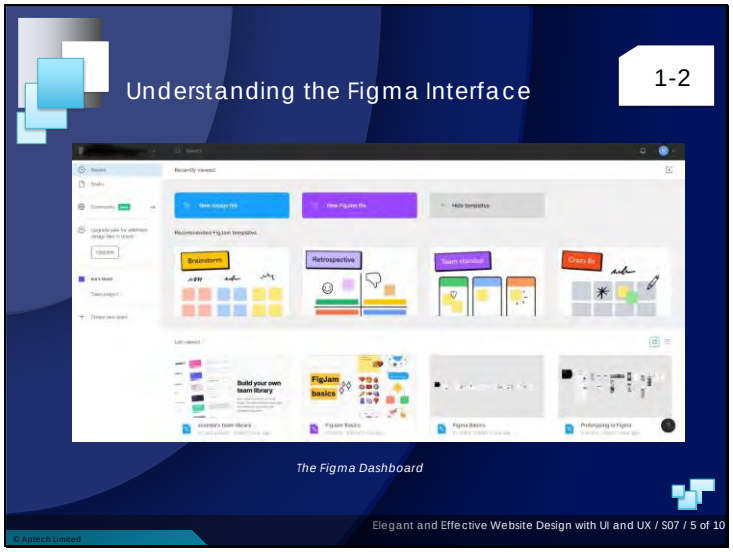
Slide 4

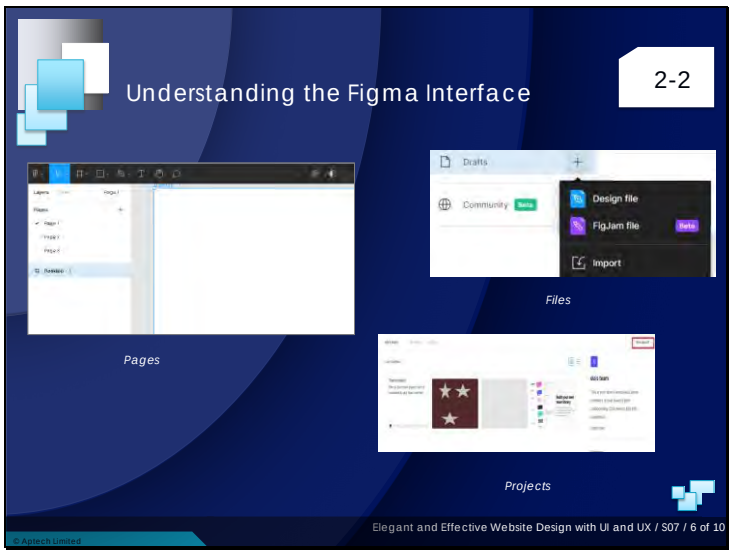


Instructions to the trainer:

- Show students Slide 4 and ask them if they have set up a Google mail account.
- Tell them that setting up an account in Figma is similar, and can be done using Google ID as well. Users can either sign up with Google or use an email address to sign up.
- In addition to individual accounts, teams can also be created. User permissions can be added to provide a team member access to files. Permissions can be revoked too. There are no restrictions on the number of teams that can be created. Teams can be structured based on their function; for example, the operations team, marketing team, communications team, and so on. This makes it easy for members to collaborate on a single project.

Slides 5 and 6





Instructions to the trainer:

- Using Slides 5 and 6, explain students that the Figma interface appears after creating the account. The interface is minimalistic but includes many features and options.
- Only the necessary labels, such as menu, tools, layers, options, and inspector, are visible on the main screen.
- There are three parts to the interface:
    - **File Browser:** The browser part can be considered as the home screen of Figma. It appears when we visit figma.com. The center of the screen is the main body, which displays the teams, projects, and files the user is working on. From here, one can access draft files, create files, import files, plugins, create and join teams. The browser can be used to explore the design workspace and navigate between accounts. The

navigation bar at the top of the workspace allows the designer to access any account and workspace-level actions. On the left side of the page is the sidebar.

In-Class Question

Question: Which part of the Figma interface must be used to access workspace-level actions?
Answer: The file browser

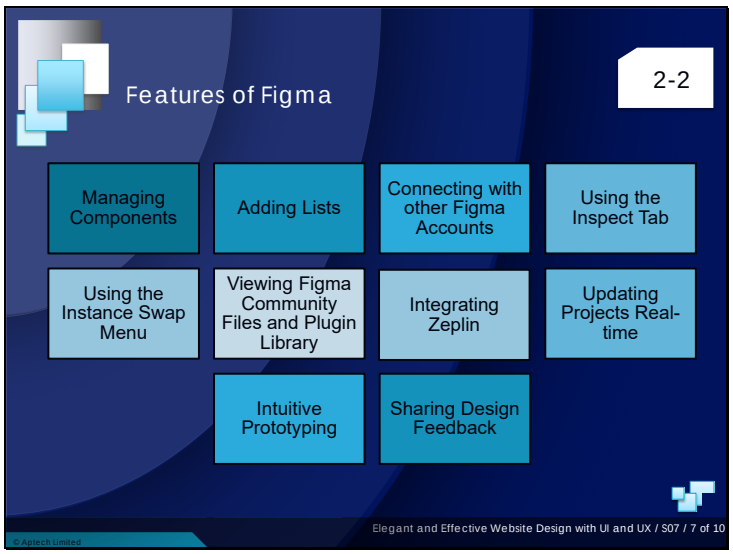
- **File Structure:** Figma follows a four-level file structure that helps in managing files better. The four levels are: Pages, Files, Projects, and Teams.
    - **Files:** There are two ways to organize files: either merge entire design processes within individual files, or split designs into separate files. This would depend on the size of the file; how heavy the files become when they are merged. Generally, it is recommended that if there are image-heavy files, maintain them as separate files with the same naming convention as the main file, and appended with specific names. If there are many individual components, such as shapes and text, keep them in one file.
    - **Projects:** Splitting designs into separate workflows ensures that designers work on smaller chunks that ensures value, and can be merged into the larger picture. Designers can perform user testing and contribute to smaller components of work rather than working on a single big piece of work each time. Moreover, the file size is reduced and the team can focus on solving the relevant problems without the distractions that a bigger document could bring. In cross- functional projects, splitting work into manageable chunks allows for better focus on particular aspects.
    - **Teams:** Figma Teams is a convenient way to separate individual disciplines within an organization. for example, Marketing, Branding, Operations, and so on. This helps individual teams to work independently within their own Figma space. Creating teams is also useful for larger teams that work on larger and complex projects.
- **File Editor:** This is the main aspect of Figma. The editor in Figma is vector-based and helps in prototyping. It appears when a new file is created. It has four sections: toolbar, layers panel, canvas, and properties panel.

- It is important to know that Figma files are in the .fig file extension, which is specific to Figma. This means that Figma files cannot be opened using any other application.
- Moreover, a designer can open three files in the space to collaborate with reviewers and editors. Also, each file has a limit of three pages only.

In-Class Question

Question: How many design files can a designer open in the Figma interface?
Answer: Three

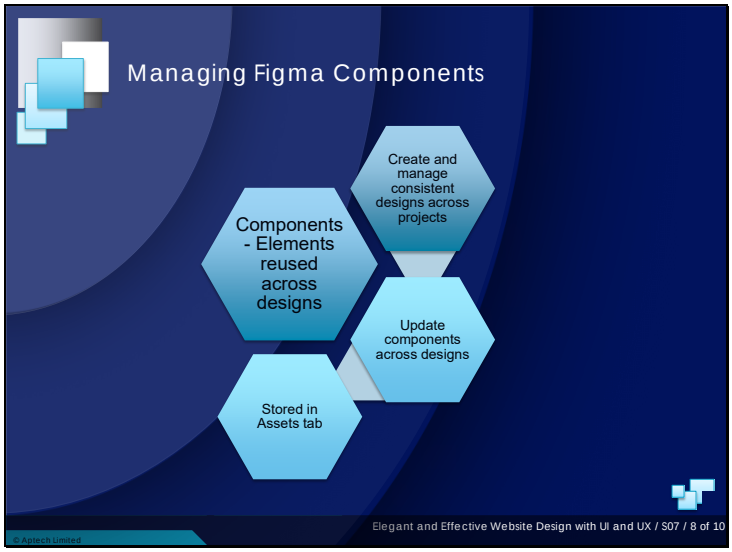
Slide 7



Instructions to the trainer:

- Show students Slide 7 and tell them that features in Figma have made it a popular design tool today.
- Figma is popular because it is browser-based, unlike other design tools. Thus, Figma can work on any operating system, Windows, Linux, or Mac.
- Figma enables real-time sharing of designs. Instead of exporting or mailing static images, the designer shares a link to the file with reviewers, editors, clients, and other stakeholders. This way, the file opens on their browsers for collaboration. This not only saves time, but also enables faster interaction among all those who are involved in the design process.
- Interactive or intuitive prototyping is a key feature of Figma. When a Figma file is open with editing rights, it is possible to switch between design and prototyping mode. Once in prototype mode, it is possible to click on an element to make it interactive, whether from the stage or the layers sidebar.
- The Inspect tab allows designers and collaborators to view and copy existing codes of the designs, which makes the development process easier. Editors can access both the Design and Prototype tabs in the right sidebar. Viewers only have access to the Inspect and Export tabs.
- The Instance swap menu allows designers to preview, search, and swap one component for another. Components are used to create or reuse elements of designs to minimize the time spent in recreating components. They also help in keeping elements consistent. Thus, the Instance menu helps in switching between components when building interfaces; for example, buttons and icons.

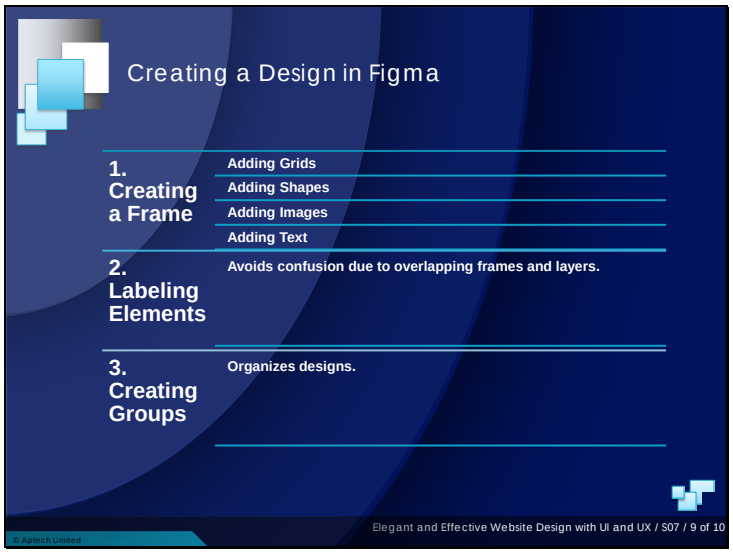
Slide 8



Instructions to the trainer:

- Show students Slide 8 and tell them that components can be created from many aspects, such as layers, objects, layouts, buttons, and icons.
- There are two parts of a component: Main and Instance. The main component defines the properties of the component. The Instance is a replica of the component that can be reused in designs. Instances are linked to the main component and receive any updates made to the component. Components can be created for use within a single file. Team Libraries can also be used to share components and styles across files and projects.
    - **Creating Reusable Components:** Features and access to functions are based on the subscribed user plan. For example, users can create components in the basic plan. Users who have subscribed to the Professional plan can publish components to a library. Also, users who have permission to edit files can create and edit components as well. Likewise, users with view access to a file can use components from a library. Components can be created from a collection of objects or layers. These can be buttons, fields, icons, or shapes.
    - **Creating Components:** Single components can be created from a selection of layers. Individual components can be created in bulk from a selection of objects.
- For more information on managing Figma components, refer to the following link: https://help.figma.com/hc/en-us/articles/360038662654-Guide-to-Components-in-Figma.

Slide 9



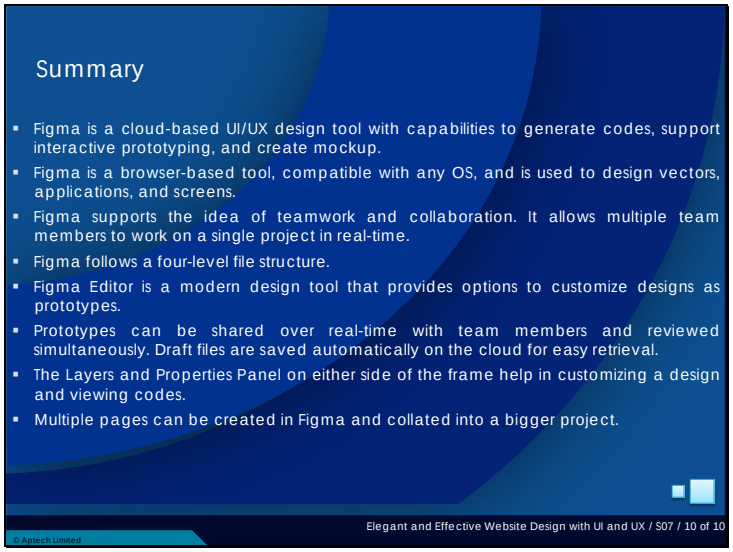
Instructions to the trainer:

- Show students Slide 9 and tell them that we will learn about creating a design in Figma.
- Before creating a design, draft pages must be built first.
- Steps for creating a design are:

- **Creating a Frame:** Frames must be designed depending on where the design will appear. They can be customized for mobiles as well. Grids help in aligning the content on the page. Shapes and elements add value to designs. Squares, lines, and circles are the fundamentals for creating a design on a page. Images make Websites attractive and interactive. They can be added from an online source or locally. The default font in Figma is Roboto. This can be modified and added to a design by selecting the text tool and placing it on the page. The font family, size, and color can be modified at any stage.
- **Labeling Elements:** Working with multiple layers can cause confusion due to the overlapping of multiple frames and layers. Hence, it is a good idea to label all elements as soon as they are created.
- **Creating Groups:** Grouping shapes and sections helps in organizing designs.

- For more information about creating designs in Figma, refer to the following link: https://www.figma.com/resources/learn-design/.

Slide 10



Instructions to the trainer:

- Using Slide 10, summarize the session by reading out each point on the Slide.

Session 8: Designing Website with Figma Tool

8.1 Pre-Class Activities

Before you commence the session, you should familiarize yourself with the topics of this session in-depth. Prepare a question or two that will be a key point to relate the current session objectives.

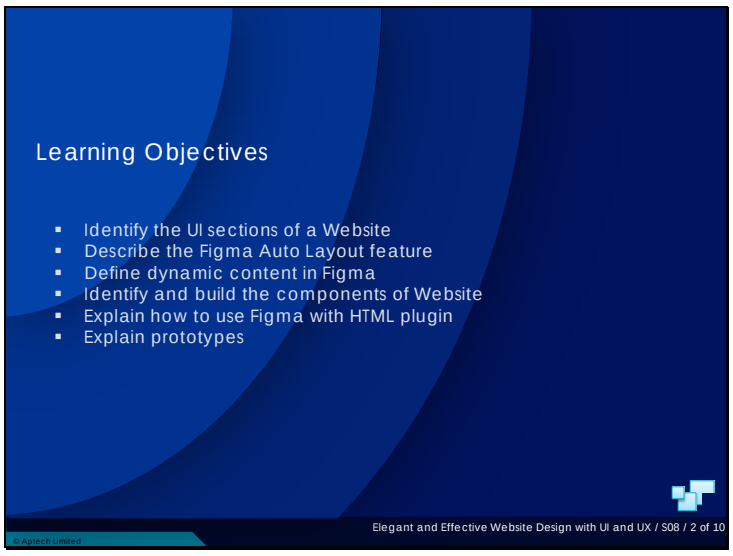
8.1.1 Teaching Skills

To teach this session, you should be well versed with working of Figma tool. You should know about dynamic content in Figma, how to create components of a Website using Figma, and also be familiar with HTML plugins and prototypes.

You should teach the concepts in the theory class using the images provided. For teaching in the class, you are expected to use slides and LCD projectors.

In-Class Activities

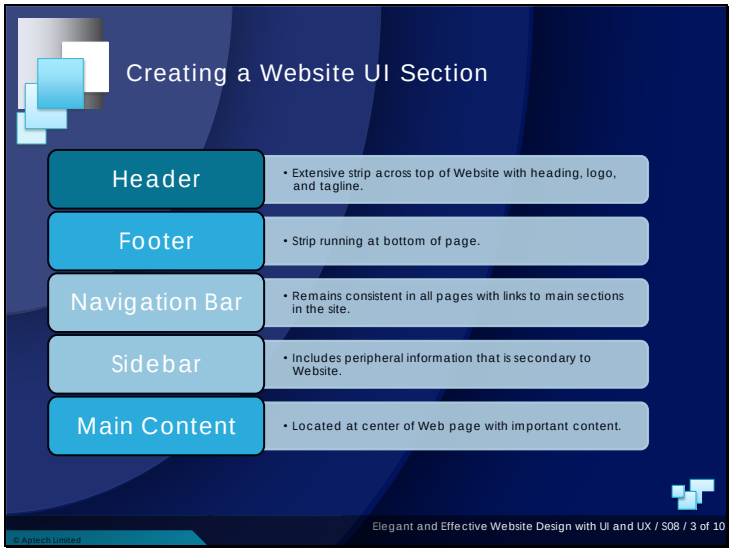
Follow the order given here during In-Class activities.
Slide 2



Instructions to the trainer:

- Give students a brief overview of the current session through the session objectives listed in Slide 2.

8.2 In-Class Explanations
Slide 3



Instructions to the trainer:

- Show students Slide 3 and begin the session with an introduction to Website user interface.
- Tell students that a Website is much more than a group of pages connected by links. A Website is an interface, a space where interaction creates an experience for the visitor. Thus, as a Web designer, it is important to ensure that the experience is the best.
- In order to do so, it is important to know user category and expectations. The interface must be easy to learn and understand. This is one of the reasons why a Website has some common sections so that the look and feel is standardized across pages.
- Most commonly, there are five parts to a Website:

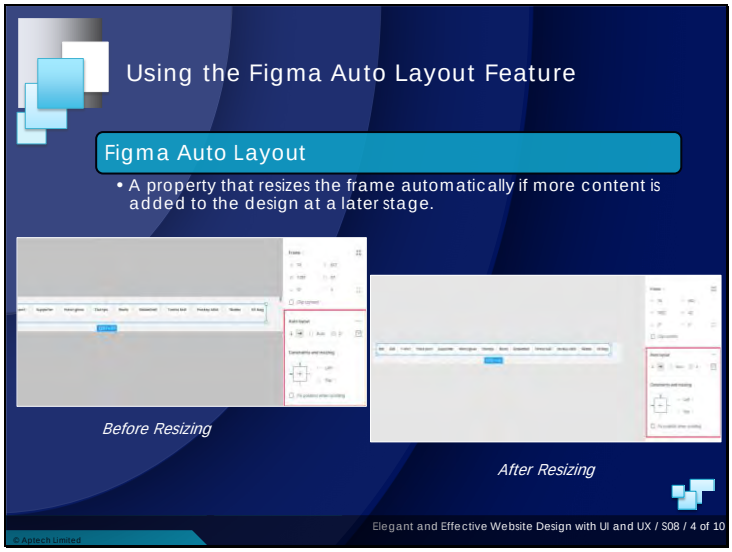
- **Header:** The header of a Website is the consistent area at the top of the site that includes the logo and navigation menu. It usually reflects the branding of the organization, product, or service.
- **Footer:** The Website footer is the consistent content area at the bottom of every page of the Website. It includes information, such as copyright information, contact information, site map, links, social media icons, and search field.
- **Navigation Bar:** Navigation is part of the header and includes links that take visitors to other parts of the Website. The primary menu includes the main links to the important sections, such as Services and Contact page. The secondary menu includes other links that may not be as important, such as My Account or Login page.
- **Sidebar:** A sidebar is an area of the Website that is used to display information that is not part of the main content. A sidebar includes links to other parts of the Website, links to blog posts and articles, advertisements, or quotations.

- **Main Content:** The quality of a Website's content is what dictates the value of the Website. Content in a Website can be in the form of text, image, audio, video, or a combination of these.

➢ For more information on Website UI sections, refer to the following links:

https://www.website.com/website-builder-and-web-design/designing-your-website-header-body-and-footer
https://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html
https://www.thecreativemomentum.com/blog/essential-elements-of-website-ui-design
https://uxplanet.org/ui-ux-design-glossary-navigation-elements-b552130711c8?gi=f856f491c423

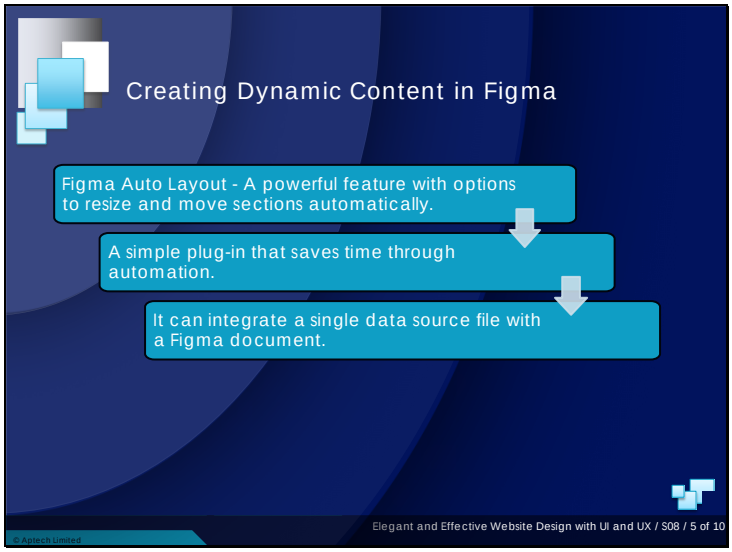
Slide 4



Instructions to the trainer:

- Show students Slide 4 and tell them that the Figma Auto Layout is a property that can be added to frames and components.
- It resizes the frame automatically if more content is added to the design at a later stage.
- Tell them that the Auto Layout feature saves a lot of time for UI designers because the frames become dynamic and adjustable, rather than resizing them manually.
- These are especially useful for Web interfaces because they are modified regularly and updated with the latest information. Hence, buttons and frames must be resized for the content to adjust within them each time information is updated. Since the frames are dynamic, it saves a lot of time and effort for the designer so that such work is not done manually.
- Figma components are design elements that can be reused in designs. For example, a dustbin signifying a delete option. The Access panel includes all the components. The first component is the Main component. Further copies of the Main component are called Instances. Whenever the Main component is updated, the Instances are also updated.
- Thus, content is dynamically updated. There are many advantages of using the Auto Layout feature, primary being that it is easy to create and manage lengthy content lists. It is easy to test different sort and view options. Adding, editing, and moving new content can be done quickly without much effort. Moreover, it is easy to maintain realistic content data.
- For more information on Figma Auto layout, refer to the following links:
  https://uxdesign.cc/quick-tips-for-auto-layout-in-figma-411c639a51b0?gi=ea1d5e5ddc57
  https://designcode.io/figma-handbook-auto-layout

Slide 5



Instructions to the trainer:

- Show students Slide 5 and tell them that the Figma Auto Layout function is a powerful feature that has options to resize and move sections automatically.
- Auto Layout is a plug-in feature that can save a lot of time and effort by automating repetitive tasks. Thus, it enhances productivity for the designer as well the organization by reducing effort and saving time.
- The Auto Layout feature has the capability to create variations of a single design. Moreover, it can also integrate single data source files with Figma documents; for example, an Excel sheet or a .csv file. This is immensely helpful in avoiding errors while copying data from one file to another.
- The primary purpose of the Auto Layout feature is to create dynamic frames that can expand or compress whenever the content within the frame changes.
- As a result, buttons can be resized according to the text size. Lists can be arranged automatically by moving elements inside the frame by simple click-and-drag action. Frames can also be nested so that complex designs can be edited easily by adjusting the padding between elements or adjusting the corner radius.
- Next, to use the dynamic content, we require the Google Sheets Plugin. This plugin helps populate the repeated component instances with unique dynamic content. To use Google Sheets, download the Google Sheets plugin from the Figma Community Page and install it. Open Google Sheets and create a new document with column and text to populate the row of buttons. Click the Share button and copy the link. Return to the Figma design and select the Google Sheets Sync option. Paste the link and click Fetch & Sync option. This will instantly populate the row of buttons with the new text. This way a lot of time and effort is saved.

- For more information about creating dynamic content in Figma, refer to the following link: https://webdesign.tutsplus.com/tutorials/figma-auto-layouts-components-and-dynamic-content--cms-35961

In-Class Question

Ask students following question. Wait for a response before you give the answer.

Question: From where can the Google Sheets Plugin be downloaded?
Answer: The Figma Community Page.

Slide 6

Instructions to the trainer:

- Show students Slide 6 and tell them that an effective Website is one that has been created by following guidelines and principles.
- Earlier, we learnt about different parts of a Website. Now, we will understand a little more about the specific aspects, such as Logo, Content, Testimonials, and Footer.
    - **Logo:** The logo in a Website identifies the organization or product brand. This is the first point that establishes a brand on the Website. It may be an image or in text form, and is consistent throughout the Website.
    - **Content:** Content forms the crux of the home page. It guides visitors to parts of the Website that will convert into Website goals, which are actions on the Website that fulfils the purpose of the Website. For example, booking a flight, or buying grocery online. Thus, this section must be as informative and attractive as possible. For example, it can inform visitors about discounts and other offers, or new arrivals or services.
- **Testimonials:** A testimonial is an endorsement, recommendation, or statement by someone who is sharing a positive experience with a business or product. Many businesses choose to publish customer testimonials on their Website because it helps to provide social proof to others who may be visiting the site. Thus, it may indirectly influence a visitor in making a decision.
- **Footer:** The footer is the concluding part of the Website. Typically, it contains important links on the Website. A copyright and date stamp is required to protect the information on the

Website and to inform visitors about the date when the Website was last updated. Any other miscellaneous information is included in the footer.

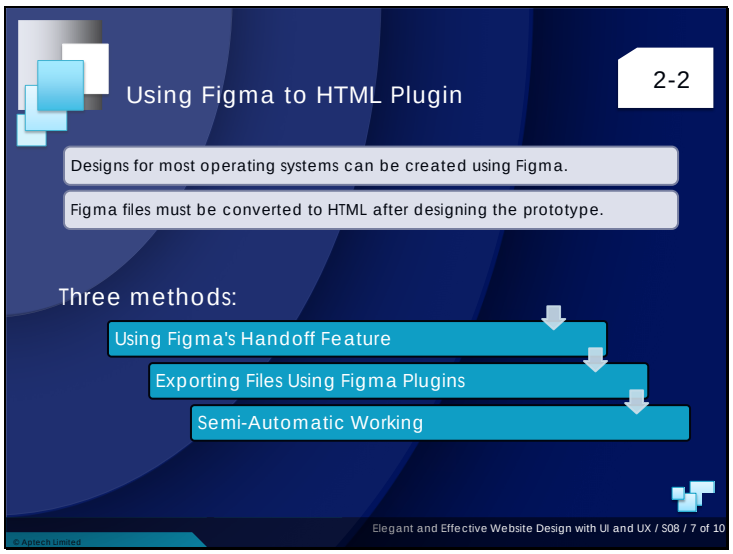
- For more information about creating Websites, refer to the following link: https://www.seoptimer.com/blog/parts-of-a-website/

In-Class Question

Ask students following question. Wait for a response before you give the answer.

Question: Which part of the Website is considered as the concluding part?
Answer: The footer.

Slide 7



Instructions to the trainer:

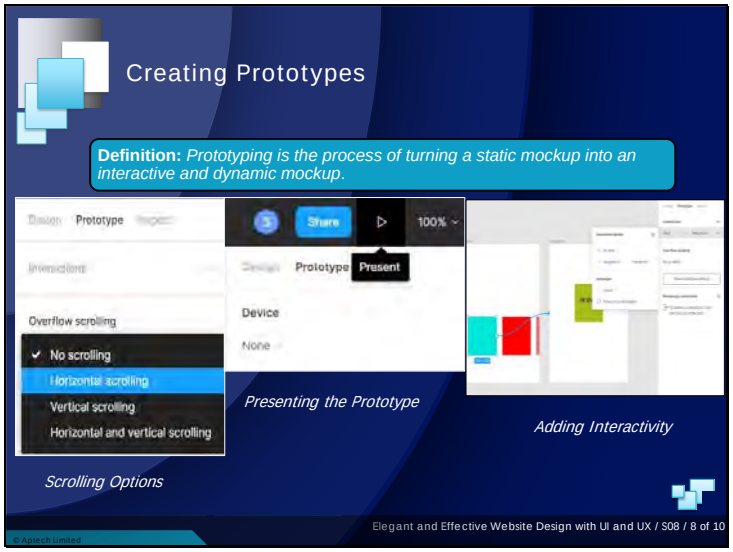
- Show students Slide 7 and tell them that Figma to HTML is a process that helps convert Figma designs to code format easily without losing colors, font, or any part of the design.
- However, this is possible only if the principles of good design and guidelines have been followed to get an exact replica of the design in code form.
- Designs and prototypes for Windows, iOS, Android, and most operating systems can be created using Figma. However, Figma files must be converted to HTML after the prototype is designed. For this purpose, Figma includes the HTML CSS plugin, which converts files in the CSS and HTML directly.
- There are three ways to export designs from Figma into codes.

- **Using Figma's Handoff Feature:** Most designers find HTML codes easy to work with. However, CSS is the best way to convert designs into code although it is time-consuming and requires manual update with every change. For example, if the color or font size changes, it is tedious to modify CSS codes manually. Thus, the Figma handoff feature is a convenient option. It is available in the Inspect tab on the right-side panel in the Figma application.
- **Exporting Files Using Figma Plugins:** Export Plugins help in exporting design files into HTML, CSS, and Flutter code. Some popular plugins are as follows:
    - HTML Generator: Exports HTML and CSS files directly from Figma. Select the element inside the frame and run the plugin. The HTML and CSS font code is displayed. Copy and paste the code in the Web development software. Other tools for developing code are Visual studio and Atom.

    - Figma to HTML: Also converts design into code. It works in a similar manner to the HTML Generator.
- **Semi-Automatic Working:** This form uses, both, Figma's handoff feature and Figma plugins (HTML Generator and Figma to HTML). In this case, all the code must be verified and edited, especially when copy-pasting from Figma.

➢ For more information on converting Figma to HTML, refer to the following link: https://uxplanet.org/figma-to-code-d6db0aa4e88c

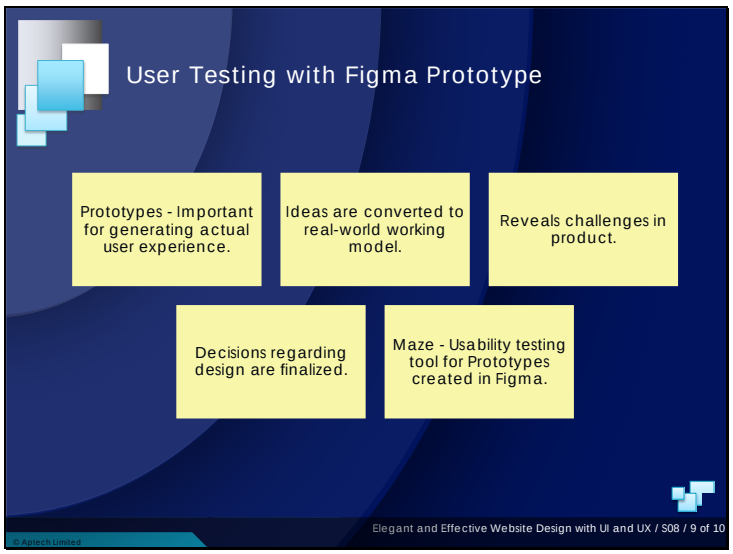
Slide 8



Instructions to the trainer:

- Show students Slide 8 and tell them that Prototyping is the process of turning a static mockup into a dynamic mockup.
- Prototyping in Figma works by creating links between frames and elements within the frames.
- The Prototyping feature in Figma allows to create interactive flows between users. It also explores the way users interact with the shared design.
- It is quite easy to create interactive prototypes with Figma. When a Figma file is open with editing rights, it is possible to switch between design and prototyping mode. Once in prototype mode, it is possible to click an element to make it interactive, whether from the stage or the layers sidebar.
- The advantages of creating Prototypes are that stakeholders can preview interactions and user flows. By doing so, they can also share and iterate their ideas on designs. Designers can receive feedback from collaborators, editors, and reviewers. They can test the interactions with users, and present their designs to stakeholders.
- For more information on creating Prototypes, refer to the following link: https://www.sitepoint.com/figma-prototyping/

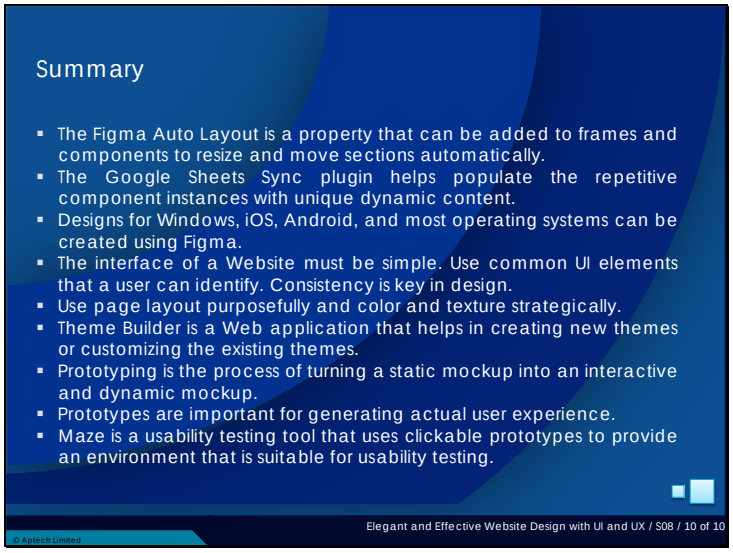
Slide 9



Instructions to the trainer:

- Show students Slide 9 and tell them that Prototypes are important for generating actual user experience. Prototyping is a phase where ideas are converted to a real-world working model. A working prototype can be tested with users that will reveal challenges in the prototype. It benefits designers immensely because decisions regarding design can be finalized. It focuses on user experience.
- Maze is a popular usability testing tool that is used to test prototypes created in Figma. Testing in Maze requires an account to be created in Maze.
- To enable access to a design created in Figma, click the play icon to enter presentation mode. Click the Share Prototype button in the menu bar. This opens the Sharing modal for the Prototype. Adjust the Link Sharing Discovery settings to Anyone with the link. Click Copy link to copy the prototype's URL to your clipboard.
- Then, log in to the Maze application and open the Projects dashboard. Paste the link here and click New Project. After importing the Figma prototype to Maze, create a maze with blocks of missions and questions; and click Start testing. Copy and share the maze URL with users to get results. Access the results and report.
- After completing testing, access to the design can be revoked.
- For more information about using Maze for testing Figma Prototypes, refer to the following link:
  https://help.figma.com/hc/en-us/articles/360041246514-Test-your-Figma-prototypes-with-Maze

Slide 10



Instructions to the trainer:

- Using Slide 10, summarize the session by reading out each point on the slide.