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Experiment / assignment / tutorial No.__6__

Title: User interface design using UI tools for mini project

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Aim: To enable the students learn different user interface design tools and their aspects

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CO: Study Of User interface design using UI tools for mini project

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Books/ Journals/ Websites referred:

1. Roger Pressman, "Software Engineering", sixth edition, Tata McGraw Hill.
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Pre Lab/ Prior Concepts:

The user interface Need:

System users often judge a system by its interface rather than its functionality. A poorly designed interface can cause a user to make catastrophic errors. Poor user interface design is the reason why so many software systems are never used. Most users of business systems interact with these systems through graphical interfaces although.

GUI characteristics

Windows Multiple windows allow different information to be displayed simultaneously on the user's screen. Icons different types of information. On some systems, icons represent files; on others, icons represent processes. Menus Commands are selected from a menu rather than typed in a command language. A pointing device such as a mouse is used for selecting choices from a menu or indicating items of interest in a window.

GUI advantages

They are easy to learn and use.

• Users without experience can learn to use the system quickly

The user may switch quickly from one task to another and can interact with several different applications.

Information remains visible in its own window when attention is switched.

Fast, full-screen interaction is possible with immediate access to anywhere on the

User Interface Design Models

User model — a profile of all end users of the system

Design model — a design realization of the user model

Mental model (system perception) — the user's mental image of what the interface is

Implementation model — the interface "look and feel" coupled with supporting information that describe interface syntax and semantics
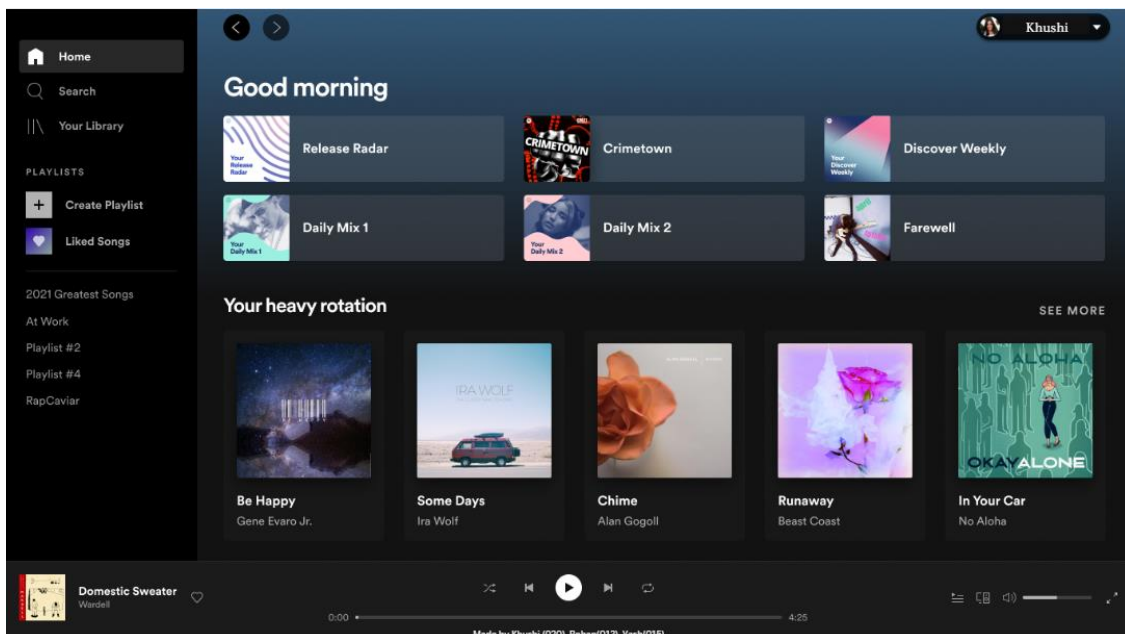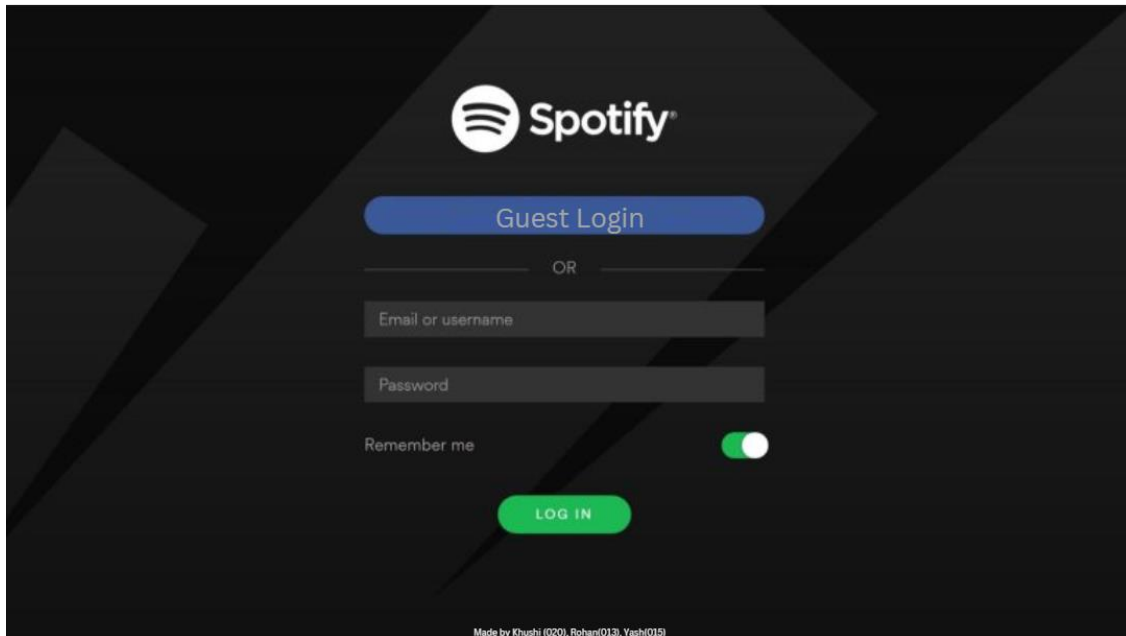
User interface design analysis:

The overall process for analysing and designing a user interface begins with the creation of different models of system function (as perceived from the outside). You begin by delineating the human- and computer-oriented tasks that are required to achieve system function and then considering the design issues that apply to all interface designs. Tools are used to prototype and ultimately implement the design model, and the result is evaluated by end users for quality.

Some interface designs created for Spotify Application:

Study and describe any one user interface tools

Tools used: Adobe XD

Introduction:

Adobe XD is a vector-based user experience design tool for web apps and mobile apps, developed and published by Adobe Inc. It is available for macOS and Windows, although there are versions for iOS and Android to help preview the result of work directly on mobile devices. Adobe XD supports website wireframing and creating click-through prototypes.

Features:

Adobe XD creates user interfaces for mobile and web apps. Many features in XD were previously either hard to use or nonexistent in other Adobe applications like Illustrator or Photoshop.

1. **Repeat grid:** Helps creating a grid of repeating items such as lists, and photo galleries.
2. **Prototype and animation:** Creates animated prototypes through linking artboards. These prototypes can be previewed on supported mobile devices.
3. **Interoperability:** XD supports and can open files from Illustrator, Photoshop, Photoshop Sketch, and After Effects. In addition to the Adobe Creative Cloud, XD can also connect to other tools and services such as Slack and Microsoft Teams to collaborate. XD is also able to auto-adjust and move smoothly from macOS to Windows. For security, prototypes can be sent with password protection to ensure full disclosure.
4. **Voice design:** Apps can be designed using voice commands. Besides, what users create for smart assistants can be previewed as well.
5. **Components:** Users can create components (previously known as symbols) to create logos, buttons, and other assets for reuse. Their appearance can change with the context where they are used.
6. **Responsive resize:** Responsive resize automatically adjusts and sizes pictures and other objects on the artboards. This allows the user to have their content automatically adjusted for different screens for different sized platforms such as mobile phones and PCs.
7. **Plugins:** XD is compatible with custom plugins that add additional features and uses. Plugins range from design to functionality, automation and animation.
8. **Keyboard shortcuts:** Helpful for faster workflows, including moving and resizing objects.
9. **CSS snippets:** CSS snippets in design specs are automatically generated, making it easy to copy and paste from XD to live projects.

10. **Interactive animations:** Automatically animate changes between artboards to create cool interactive content or micro-interactions.
11. **Photoshop:** Edit Photoshop images and files right in XD.
12. **Real-time Collaborations:** Adobe XD also, gives you the ability to collaborate on projects with others in real-time.
13. **Documentation:** Extensive documentation and tutorials to make learning easy.

Advantages:

1. **All types of artboards**: All types of artboards are present for different formats such as web, mobile, or twitter posts.

2. **Tutorials:** Basic introductory tutorials that they have are available and are a great help to anyone who is new to the software.

3. **Simple and clean interfaces:** As compared to the interface of Photoshop and illustrator, the interface of Adobe XD is simple and clean. It has a perfect for UI designers and has almost everything that one needs.

4. **Repeat Grid feature:** We can just drag one grid with repeat grid command on it and it will automatically place the other dragged grid after that. Hence, this saves time and effort.

5. **Most Explicit Feature of the Software – Prototyping:** Without coding one could know how the elements in their website are going to react to the different events.

Disadvantages:

1. **Repeating objects feature**: This feature does not work as expected. It is like copying something in other vector-based software. It is done using Ctrl + D command in Adobe XD and in other apps such as Illustrator it is done using Ctrl + F.

2. **Prototyping:** Although prototyping is an exceptional feature, it also has a downside of it. To see the live prototyping of smartphones on the real devices it only works with Mac OS and not with others.

3. **No way to design customised shapes:** Shapes are a crucial part of any design. But in Adobe XD, one cannot design shapes other than circles, ovals, squares and rectangles.

Post Lab Descriptive Questions

1. State various types of UI design tools.

Various types of UI design tools are:
- Invision Studio
- Whimsical
- Wireframing
- Balsamiq
- UXPin
- Sketch
- Marvel
- Figma
- Origami Studio

2. Explain the UI design Principles

The principles of user interface design are intended to improve the quality of user interface design. These principles are:

- The Structure Principle
  Design should organize the user interface purposefully in meaningful and useful ways based on clear, consistent models that are apparent and recognizable to users. Putting related things together and separating unrelated things, differentiating dissimilar things and making similar things resemble one another.

- The Simplicity Principle
  The design should make simple common tasks ways, communicating clearly in user's own language.

- The Visibility Principle
  The design should make all needed options and materials for a given task visible without distracting the user.

- The Feedback Principle
  The design should keep users informed of axtions or interpretions, changes of state or condition and errors or exceptions that are relevent.

- The Tolerance Principle
  The design should be flexible and tolerant reducing the cost of mistakes.

- The Reuse Principle
  The design should receive internal and external components and behaviours consistent with its purpose.

3. What do you understand by a good interface and a bad interface

A good interface design is user friendly. This is because it is easy to navigate, easy to understand, interactive and effective. A good design should always be clear and user centric.

Features:
- Clear
- Consistent
- Simple
- User Controlled
- Provide Feedback

A bad interface design is confusing. This is because it is erroneous, difficult to navigate, unresponsive, misleading, etc.

Examples of bad interface desgin are as follows:
- Plagiarized design as well as content
- Too many colors and lack of contrast
- Website is static
- Unecessary animation
- Not having enough tooltips