



## **Experiment No. 1**

**Title: Case study on User Interface Design**



**Batch: A3****RollNo.:16010421073****ExperimentNo.:1****Aim:** To study case study on User Interface (UI) Design**Resources needed:**Web Resources**Theory:**

User interface (UI) defines interactions of user with information system. The user interface is the part of a computer and its software that people can see, hear, touch, talk to, or otherwise understand or direct.

The user interface has essentially two components: input and output.

Input is how a person communicates his or her needs or desires to the computer. Some common input components are the keyboard, mouse, trackball, one's finger (for touch-sensitive screens), and one's voice (for spoken instructions).

Output is how the computer conveys the results of its computations and requirements to the user. Today, the most common computer output mechanism is the display screen, followed by mechanisms that take advantage of a person's auditory capabilities: voice and sound. The use of the human senses of smell and touch output in interface design still remain largely unexplored.

Proper interface design will provide a mix of well-designed input and output mechanisms that satisfy the user's needs, capabilities, and limitations in the most effective way possible. The best interface is one that is not noticed, one that permits the user to focus on the information and task at hand, not the mechanisms used to present the information and perform the task.

**Results: (Screenshots of hosting steps and web pages)**

**1) Discuss one UI selected for best, average and poor experience and elaborate on strengths and weaknesses of same.**

**To achieve these goals, designers need to consider various criteria throughout the design process. Here are some important criteria for UI/UX design:**

- **User-Centered Design:** The primary focus of UI/UX design is the end user. Designers must understand the target audience, their needs, preferences, and pain points to create a design that caters to their requirements.
- **Clarity and Simplicity:** A good UI/UX design should be clear and easy to understand. Avoid clutter and unnecessary elements that might confuse or overwhelm users. Keep the design simple and intuitive to navigate.
- **Consistency:** Consistency is key to creating a cohesive and unified user experience. Use consistent design patterns, fonts, colors, and interactions throughout the entire interface.
- **Visual Hierarchy:** Establish a clear visual hierarchy to guide users' attention to the most important elements on the screen. Use size, color, and placement to signify importance and relationships between different elements.
- **Responsiveness:** UI/UX designs should be responsive and adaptable to different devices

and screen sizes, ensuring a seamless experience across various platforms (desktop, tablet, mobile, etc.).

- **Accessibility:** Ensure that the design is accessible to all users, including those with disabilities. Consider factors like contrast, font size, and alternative text for images to improve accessibility.
- **Intuitive Navigation:** Design navigation that is easy to understand and use. Users should be able to find what they need quickly and with minimal effort.
- **Feedback and Interactivity:** Provide clear feedback for user actions, such as button clicks or form submissions. Interactive elements should respond promptly to user input.
- **Error Handling:** Design error messages that are helpful and constructive. Clearly communicate any issues and suggest solutions to users when errors occur.
- **Branding:** Reflect the brand identity in the design, including the use of appropriate colors, typography, and imagery, to maintain consistency with the overall brand.
- **Performance:** Optimize the design to ensure fast loading times and smooth interactions, as slow loading or laggy interfaces can lead to a negative user experience.

- **Aesthetics:** While functionality is essential, aesthetics play a significant role in engaging users. A visually pleasing design can enhance user satisfaction and enjoyment.
- **User Testing and Iteration:** Regularly conduct user testing to gather feedback and insights. Use this feedback to make iterative improvements to the design.
- **Context and Content:** Understand the context in which the design will be used and tailor the content accordingly. Ensure that the design supports the content and complements the overall user experience.

### **Examples of Websites :**

#### **Best UI Website:**

[iPad Pro - Apple \(IN\)](#)

#### **Average UI Website :**

[Get Aadhaar - Unique Identification Authority of India | Government of India \(uidai.gov.in\)](#)

#### **Poor UI Website :**

[Somaiya Vidyavihar: Library Online Catalogue](#)

Criteria	Apple Website UI(Best)	Aadhar Card Website(Average)	Library Online catalogue(Worst)
<b>Responsiveness</b>	The website is responsive and looks appealing to users in every device.	It is also responsive but some of the elements after different layout do not look appealing to user.	It is not responsive.
<b>Consistency</b>	The website is consistent meaning he webpages are similar and it is known for its minimalist design.	The website is consistent in terms of webpages but too many features making it difficult for users to understand.	It is not at all consistent
<b>Aesthetics</b>	It is simple and is very appealing to users.	It is more common in layout and users don't find unique	It is not at all appealing to user since there is very

		theme about website	less theme in website.
<b>Performance</b>	It is more smooth and have faster loading time.	Its loading time is faster but gets slower when there is large traffic.	It has slower loading time and lags a lot creating negative User Experience.
<b>Simplicity</b>	Its design is easy and simple to understand for users where the specific elements are present.	It is difficult for users to understand the placements of elements as it has many features.	It is easy to understand for users.
<b>User Centered Design</b>	As the company have bigger brand image they have understood the needs of target audience creating excellent UI/UX design.	Its design is average and has made for target audience .	Its design is simple as it does not require aesthetics and its target audience is less.
<b>Visual Hierarchy</b>	The colour combination of elements is amazing making it easier for user to understand the website.	Only few colours are used and there are more number of elements.	Its visual hierarchy is not good.
<b>Navigation</b>	Navigation is easier for specific elements which are most often used.	There are lot of elements so difficult for user to navigate certain elements.	It is easier to use.
<b>Content</b>	Content is easy to understand with right size, font-family and placement.	Content is lot and not easy to understand for a user.	Content is less.

**Questions:**

1. List down the characteristics of good screen design.

**Ans**

**2) Simplicity :**

1. User Interface design should be simple.

2. Less number of mouse clicks and keystrokes are required to accomplish this task.
3. It is important that new features only add if there is compelling need for them and they add significant values to the application.

**3) Consistency :**

1. The user interface should have a more consistency.
2. Consistency also prevents online designers from creating chaos, ambiguity and instability.
3. We should apply typeface, style and size convention in a consistent manner to all screen components that will add screen learning and improve screen readability. In this we can provide permanent objects as unchanging reference points around which the user can navigate.

**4) Intuitiveness :**

1. The most important quality of good user interface design is intuitive.
2. Intuitive user interface design is one that is easy to learn so that user can pick it up quickly and easily.
3. Icons and labels should be concise and cogent. A clear unambiguous icon can help to make user interface intuitive and a good practice is to make labels conform to the terminology that the application supports.
- 4.

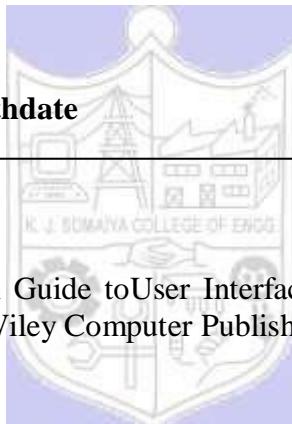
**Outcomes:**

**CO1:** Comprehend the role of user and designer in User Interface Design.

**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)**

**Thus we learned about different case study on User interface design.**

**Grade: AA / AB / BB / BC / CC / CD/DD**



**Signature of faculty in-charge with date**

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**Reference:**

1. Wilbert O. Galitz, The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques, Wiley Computer Publishing, Second Edition, 2002



## **Experiment No. 2**

**Title: Problem definition, Persona and Usecases**



**Batch:A3****Roll No.:16010421073****Experiment No.:2****Aim: To write problem definition, persona and usecase****Resources needed:** Web Resources**Theory:**

Identifying personas and uses case is important step in design of user interface design.

**Personas**

Personas are complimentary to a scenario-based approach to requirements engineering. Specific names of the personas are used in the description of the scenario. Personas are defined by their needs and goals. These include their personal goals as well as their goals for the system. A goal-directed design project may, and probably will, have multiple personas because different kinds of users with different goals will use the system. The system may not be designed for all personas. However, each system will have at least one primary persona.

A primary persona is someone who must be satisfied with the system for it to be considered a success and who cannot be satisfied with an interaction designed for another persona. The user interaction designed for each primary persona should be based on the needs and goals of that persona.

**Example of persona:**

Following is example of persona for online song streaming application:

“Being a student, Chirag travels 2 hours daily, and his long commutes are usually very boring. Therefore, he looks for some form of entertainment like movies, songs and TV series. There’s a plethora of new content to consume and it’s not possible to download all the material out there, therefore using an online portal is the best way for Chirag. He is also interested in dance and music and therefore is always in search for new and different music. He owns a laptop and a cell phone. While travelling he uses his cellphone and can use the mobile app to listen songs. He uses his laptop for gaming and for his college studies. Thus, he can use the website too.”

**Use case:**

Use cases are a mechanism to help keep it simple and understandable for all stakeholders. Informally, they are stories of using a system to meet goals. Use cases often need to be more elaborate than this, but the essence is discovering and recording functional requirements by writing stories of using a system to help fulfill various stakeholder goals. A scenario is a specific sequence of actions and interactions between actors and the system under discussion; it is also called a use case instance. It is one particular story of using a system, or one path through the use case; for example, the scenario of successfully purchasing items with cash, or the scenario of failing to purchase items because of a credit card transaction denial.

Informally then, a use case is a collection of related success and failure scenarios that describe actors using a system to support a goal.

Use cases are requirements; primarily they are functional requirements that indicate what the system will do. Use cases are text documents, not diagrams, and use case modeling is primarily an act of writing, not drawing. However, the UML defines a use case diagram to illustrate the names of use cases and actors, and their relationships.

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### **Procedure:**

Write problem definition, personas (minimum two), use cases (minimum five)

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### **Result:**

### **Problem Statement:**

#### **Enhancing Entertainment and Discovery with a Music Player Website**

In today's fast-paced world, individuals like Ravi, who are constantly on the move, seek convenient and engaging forms of entertainment during their daily routines. Long commutes, such as Ravi's two-hour journey, can often become monotonous and tiresome. Therefore, there is a need for an innovative music player website that caters to the diverse entertainment preferences of different personas, including listeners, artists, and podcast enthusiasts.

### **Personas**

#### **❖ Listener - Ravi (Student and Commuter):**

Ravi, a college student, spends considerable time commuting daily. He craves for podcasts and music to make his journeys enjoyable. Ravi's interests range from informational podcast such as finance related , to music, and he's always on the lookout for fresh content. He owns a laptop for academic purposes and a cellphone for his entertainment needs.

#### **❖ Artist - Rashmi (Aspiring Musician):**

Rashmi is a passionate musician striving to share her music with the world. She's seeking a platform where she can upload her tracks, connect with fans, and gather feedback to refine her skills. Rashmi wants a user-friendly interface to manage her artist profile and engage with listeners who appreciate her music.

#### **❖ Podcast Enthusiast - Elena (Working Professional):**

Elena is a busy professional who enjoys podcasts during her daily workout routines and downtime. She's interested in a music player website that not only offers an extensive collection of podcasts but also enables her to curate playlists for various moods and preferences. A seamless experience across devices is essential for her active lifestyle.

#### **❖ Sharandeep - The Fitness Enthusiast**

Sharandeep is a fitness trainer who uses music to energize his workout sessions and motivate his clients. Sharandeep needs an app that offers high-tempo playlists and seamless integration with fitness tracking apps for syncing music with workout routines.

His primary goal is to find suitable music for different types of workouts and have the music tempo align with the intensity of the exercises.

### **Use-Cases:**

Certainly, here are some use cases for a music player application, along with their backgrounds, needs, and goals:

#### **Use Case-1: Creating and Managing Personal Playlists**

- **Background:** Users often have diverse musical preferences and moods. They need a way to organize and curate playlists that suit their specific tastes and occasions.
- **Need:** Users want to easily create, edit, and manage playlists that can be accessed across different devices.
- **Goals:** The primary goal is to provide users with a user-friendly interface to create and manage playlists. Users should be able to add and remove songs, reorder tracks, and save their playlists for future listening.

#### **Use Case-2: Discovering New Music(New recommendations)**

- **Background:** Music enthusiasts are always looking for fresh and exciting music to broaden their musical horizons.
- **Need:** Users need a feature that introduces them to new songs and artists based on their preferences and listening history.
- **Goals:** The goal is to offer personalized music recommendations and discovery features. This can be achieved by analyzing the user's listening habits and suggesting songs, artists, or playlists that align with their tastes.

#### **Use Case-3: Offline Listening**

- **Background:** Internet connectivity is not always available, such as during flights or in areas with poor reception.
- **Need:** Users want the ability to download their favorite songs and playlists for offline listening.
- **Goals:** The primary goal is to allow users to download selected songs or entire playlists for offline access. The application should ensure that the downloaded content remains accessible even when the user is not connected to the internet.

## **Use Case-4: Artist Interaction and Content**

- **Background:** Artists want to engage with their fans directly and share their latest releases, updates, and behind-the-scenes content.
- **Need:** Artists need a platform where they can create profiles, share their music, interact with fans, and promote their work.
- **Goals:** The goal is to provide artists with tools to create profiles, upload their music, share updates, and interact with their audience through comments, likes, and messages. This promotes a sense of community and helps artists build a loyal fan base.

## **Use Case-5: Podcast Streaming and Discovery**

- **Background:** Podcasts have gained immense popularity as a source of information and entertainment.
- **Need:** Users want a platform where they can discover, subscribe to, and listen to their favorite podcasts.
- **Goals:** The goal is to offer a dedicated section for podcasts, where users can search for, subscribe to, and stream episodes. Providing categories, recommendations, and the ability to create podcast playlists can enhance the podcast listening experience.

## **Use Case-6: Cross-Device Synchronization**

- **Background:** Users switch between various devices, such as smartphones, tablets, and computers, throughout the day.
- **Need:** Users need their music and playlists to be seamlessly synchronized across all their devices.
- **Goals:** The primary goal is to ensure that a user's music library, playlists, and preferences remain consistent and up-to-date regardless of the device they are using. This requires robust synchronization mechanisms.

## **Use Case-7: Social Sharing and Collaboration**

- **Background:** Music is often a social experience, and users may want to share their favorite songs or playlists with friends or collaborate on playlists.
- **Need:** Users need the ability to share songs, playlists, or collaborate on playlists with others.
- **Goals:** The goal is to provide sharing options that allow users to send songs or playlists to friends via social media, messaging apps, or email. Additionally, enabling collaborative playlists where multiple users can contribute songs can enhance the social aspect of the application.

By addressing these diverse use cases with well-defined backgrounds, needs, and goals, a music player application can cater to a wide range of user preferences and create a more engaging and satisfying experience for its users.

**Solution:**

Developing a music player website that addresses the entertainment needs of personas like Ravi, Rashmi, and Elena requires a user-centric approach. The website must offer an extensive library of music tracks, artist profiles, and podcasts. Features like personalized playlists, seamless synchronization between devices, artist interaction tools, and podcast curation options will be pivotal in enhancing the user experience. By catering to the preferences of different personas, the website aims to revolutionize how individuals consume and engage with music and podcasts, enriching their daily lives.



**Outcomes:**

**CO2 : Apply principles of Web interface design.**

**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)  
Thus we made use case,problem definition and persona.**

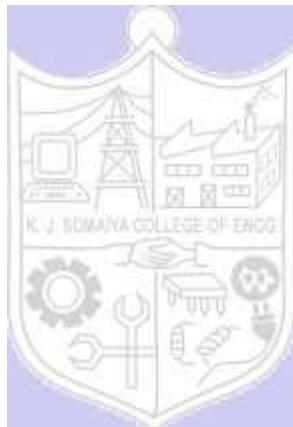
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**Signature of faculty in-charge with date**

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**References:**

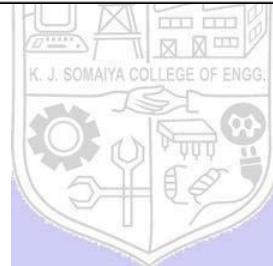
1. Wilbert O. Galitz, "The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques", Wiley Computer Publishing, Second Edition, 2002
2. Bill Scott, Theresa Neil, "Designing Web Interfaces Principles & Patterns for Rich Interaction", O'rielly Media, First Edition, 2009
3. Randolph, Gary. "Use-cases and personas: a case study in light-weight user interaction design for small development projects." *Informing Science: International Journal of an Emerging Transdiscipline* 7 (2004): 105-116.
4. Stein, Ben. "6 Use-Case Model: Writing Requirements In Context."





## **Experiment No. 3**

**Title: Selection of Wireframing/prototype tool**





Batch: A3

Roll No.: 16010421073

Experiment No.: 3

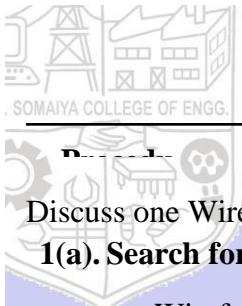
**Aim: To write case study on selection of Wireframing/prototype tool****Resources needed:** Web Resources**Theory:**

Wireframing, in the context of user experience design, is the act of creating user interface wireframes. Originally, the term "wireframe" meant a visual representation of three-dimensional objects, like those used in product design and development. Now it is also used to describe 3D modeling in computer animation and in the design and development of 2D web pages and mobile apps.

In web design, a wireframe or wireframe diagram is a grey-scale visual representation of the structure and functionality of a single web page or a mobile app screen. Wireframes are used early in the development process to establish the basic structure of a page before visual design and content is added, and can be created using paper, straight into HTML/CSS or using software apps. Wireframing sets expectations about how features will be implemented by showing how features will work, where they will be located and how much benefit they'll provide. A feature may be pulled out because it doesn't fit into your site's goals. Wireframing provides an objective look at link names, paths to conversion, ease of use, navigation, and the placement of features. Instead of merging the full functionality, layout and creative elements into a single step, wireframes guarantee that these considerations are taken on separately. This allows stakeholders to provide feedback much sooner in the process.

Wireframes often end up evolving into the requirements for a system. Wireframes can be created using a variety of software applications, for example, Visio, Excel, Word, Illustrator, Photoshop and Power Point.

Wireframes should include all the important elements of a Web page. These include: Navigation, Company logo, Content area sections, Search function, User log in areas if appropriate. This is another type of wireframe that is used in building web applications. It shows not only how each page is structured but information about each widget, button, field, each piece of content, and what page is rendered by an action. It provides a map of the entire page in the Web site, its function and features. Even the message that may be rendered by behaviour can be included on this type of wireframe.



Discuss one Wireframing/Prototyping tool selected and elaborate on the same.

**1(a). Search for Tools available for any one of categories of UI design.**

- a. Wireframing
- b. Mock up
- c. Prototyping
- d. Proof of Concept

**1(b). Explain the tool searched for each techniques in format given below.**

Type of Tool	
Name: Of the Tool (Include Company Name, Website etc.)	
License/ Open Source	
Explanation of Tool	
Procedure	<ol style="list-style-type: none"><li>1. How tool accepts the input?</li><li>2. How tool processes the data?</li><li>3. How tool displays the output/result? (Attach Screen shot whenever required)</li></ol>
Conclusion	Whether tool will be selected for laboratory activities?

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**Results:**

Attached print out about each selected tool in prescribed format.

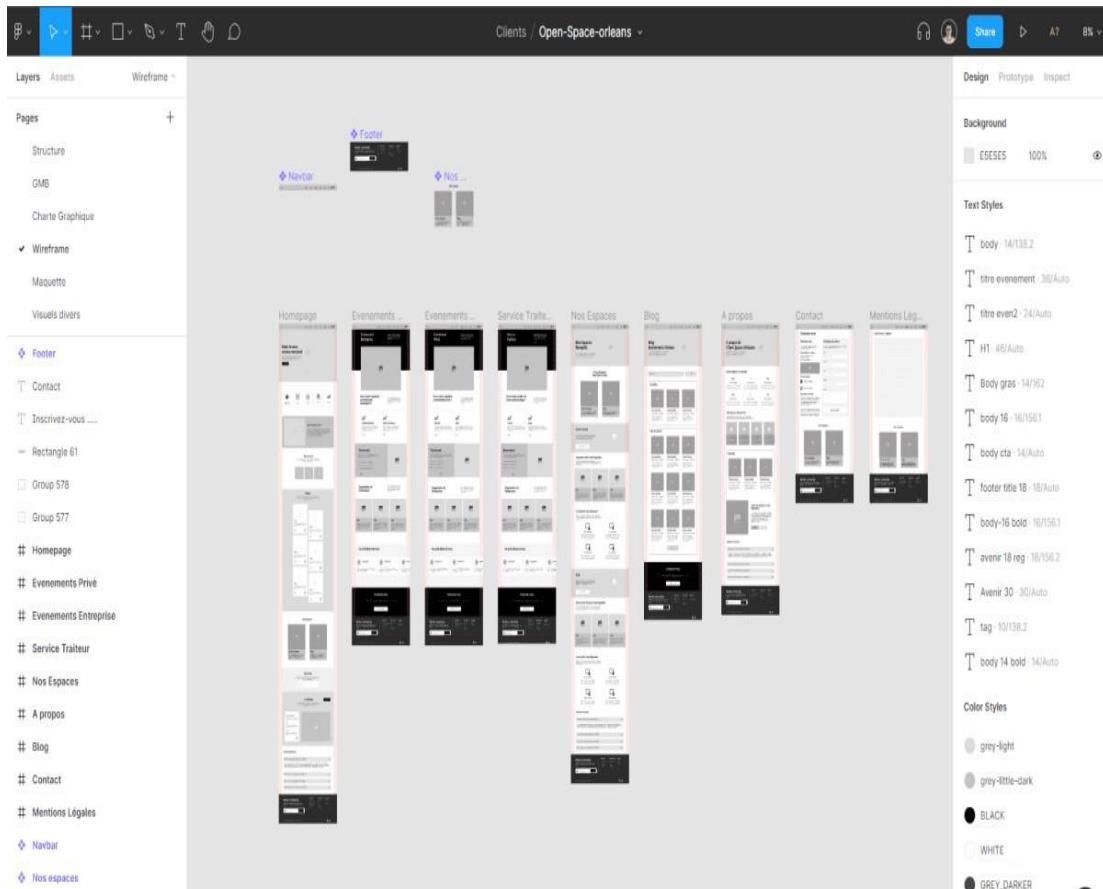
- a. Wireframing - Figma
- b. Mock up - Marvel, Balsamiq



- c. Prototyping – Adobe XD, Figma
- d. Proof of Concept – Ux Pin

**1(b) Wire Framing:**

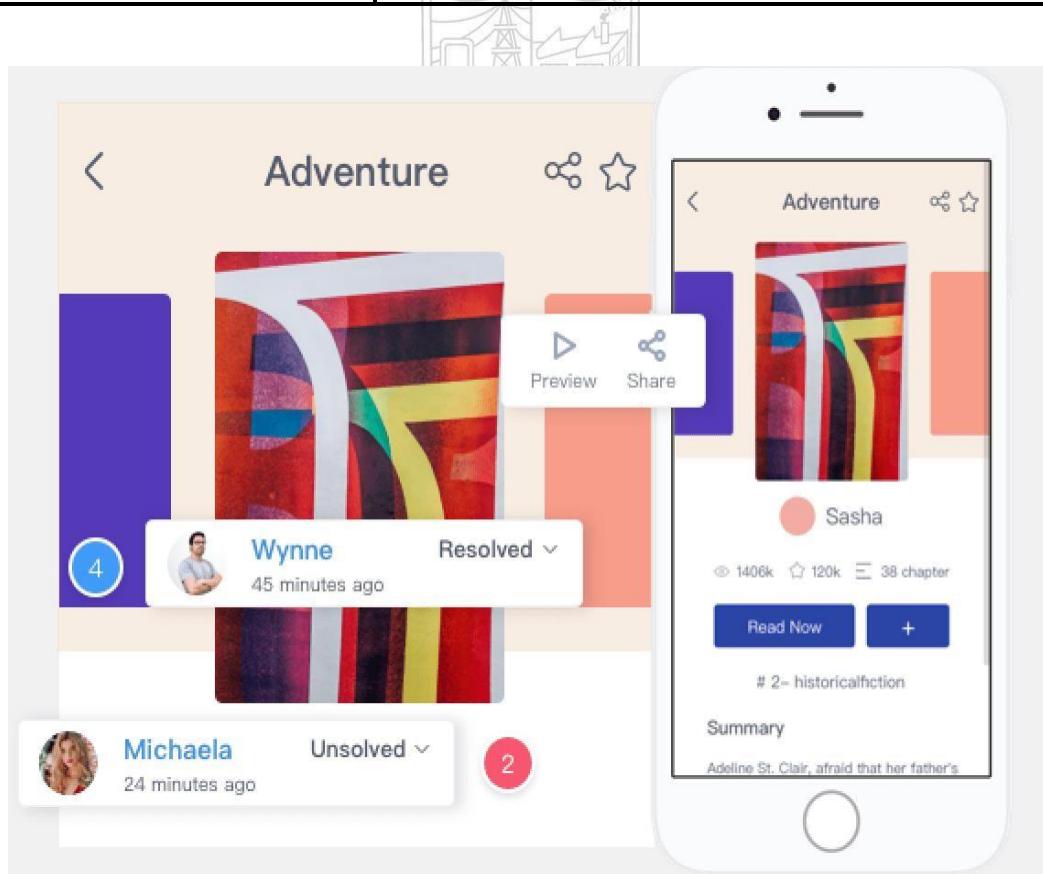
Type of Tool	Wire framing
Name: Of the Tool (Include Company Name, Website etc.)	Figma Company Name: Figma Inc. Website : <a href="http://www.figma.com">www.figma.com</a>
License/ Open Source	Open Source
Explanation of Tool	<ul style="list-style-type: none"><li>• Figma is a web-based graphics editing and user interface design app. We can use it to do all kinds of graphic design work from wire framing websites, designing mobile app interfaces, prototyping designs, crafting social media posts, and everything in between. Figma is different from other graphics editing tools.</li><li>• Mainly because it works directly on our browser. This means we get to access your projects and start designing from any computer or platform without having to buy multiple licenses or install software. Another reason why designers love this app is that Figma offers a generous free plan where we can create and store 3 active projects at a time.</li><li>• It's more than enough for us to learn, experiment, and work on small projects.</li></ul>
Procedure	<p>1. How tool accepts the input? Ans) Figma offers users a variety of options. They can import and export frames, as well as choose a frame depending on its size and kind. Additionally, it offers the ability to draw shapes, scribble, and fill in colors using a color picker or hex code. The user can import SVGs and pictures as well. All kinds of drawing and designing tools are provided on a sizable canvas.</p> <p>2. How tool processes the data? Ans) Figma is a collaborative tool which stores data in the cloud and auto saves our work. Data is processed in real time.</p> <p>3. How tool displays the output/result? A) We can view the produced wire frame with actual device screen size by running a particular frame, many frames, or all the frames in the canvas on a screen. Frames can be exported in a variety of formats as well.</p>
Conclusion	Whether tool will be selected for laboratory activities? Yes



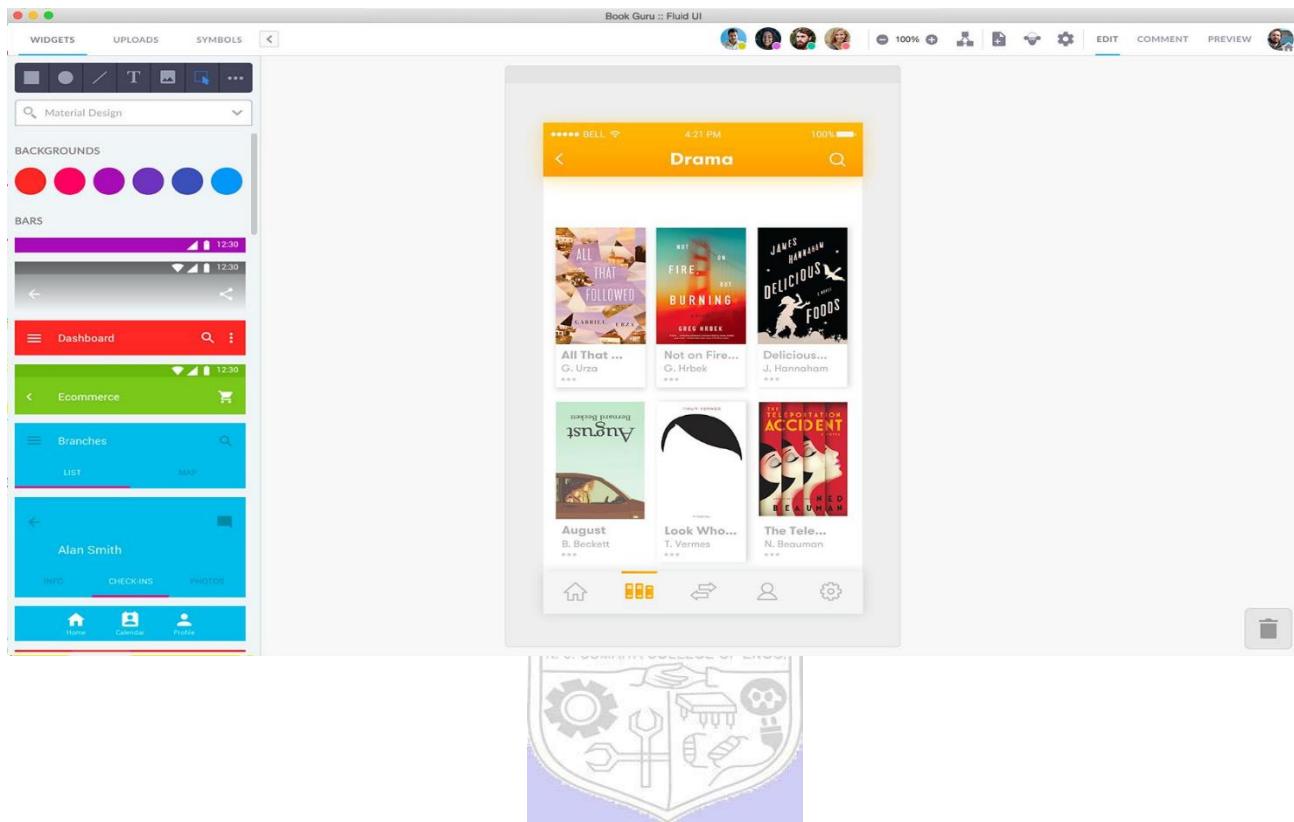
## Mock Up:

Type of Tool	Mock Up
Name: Of the Tool (Include Company Name, Website etc.)	Mockplus Company Name : MockPlus Software Co. Ltd Website : <a href="https://www.mockplus.com/">https://www.mockplus.com/</a>
License/ Open Source	Open Source
Explanation of Tool	<ul style="list-style-type: none"> <li>Mockplus is one of the most common and powerful website mockup free tools that allow you to create website designs and build mobile and desktop app mockups.</li> <li>If you are a web designer and want to create scalable sites that look good on different sites, then this tool is for you.</li> <li>By using this tool, you can create web design mockups in a few minutes with a drag and drop editor. This tool is perfect for you, especially if you are a solo designer or running a small team. You can utilize the free version of this website design</li> </ul>

	mock up tool to create five projects.
Procedure	<p>1. How tool accepts the input?          Ans) Add buttons, labels, textboxes, checkboxes, tabs, combo boxes, hyperlinks, scroll bars, splitters, and more to your mockup using the design surface and a list of standard UI</p>
	<p>components. Additionally, there are built-in controls for video players, dialogue boxes, and browser windows.</p> <p>2. How tool processes the data?          Ans) A mockup can be exported as an XML file, a.PNG image, or to storage after it has been created.</p> <p>3. How tool displays the output/result?          Ans) We can view the result by opening the saved mockup icon.</p>
Conclusion	Whether tool will be selected for laboratory activities? No



Type of Tool	Mock Up
Name: Of the Tool (Include Company Name, Website etc.)	Fluidui Company Name : Fluidui Website : <a href="https://www.fluidui.com/">https://www.fluidui.com/</a>
License/ Open Source	Open Source MIT License
Explanation of Tool	With Fluid UI, ideas can be prototyped in minutes and shared instantly. Sharing, feedback and collaboration are all built in. Fluid UI focuses on fast, easy and fun. Prototype in high or low fidelity. Fluid UI supports whatever style you need. Test your prototypes on any mobile or tablet with the free player apps. Visually linking your prototype together makes adding interactions fast, fun and productive.
Procedure	<p>1. How tool accepts the input?</p> <p>Ans) Add buttons, labels, textboxes, checkboxes, tabs, combo boxes, hyperlinks, scroll bars, splitters, and more to your mockup using the design surface and a list of standard UI</p> <p>components. Additionally, there are built-in controls for video players, dialogue boxes, and browser windows.</p> <p>2. How tool processes the data?</p> <p>Ans) A mockup can be exported as an XML file, a.PNG image, or to storage after it has been created.</p> <p>3. How tool displays the output/result?</p> <p>Ans) We can view the result by opening the saved mockup icon.</p>
Conclusion	Whether tool will be selected for laboratory activities? No

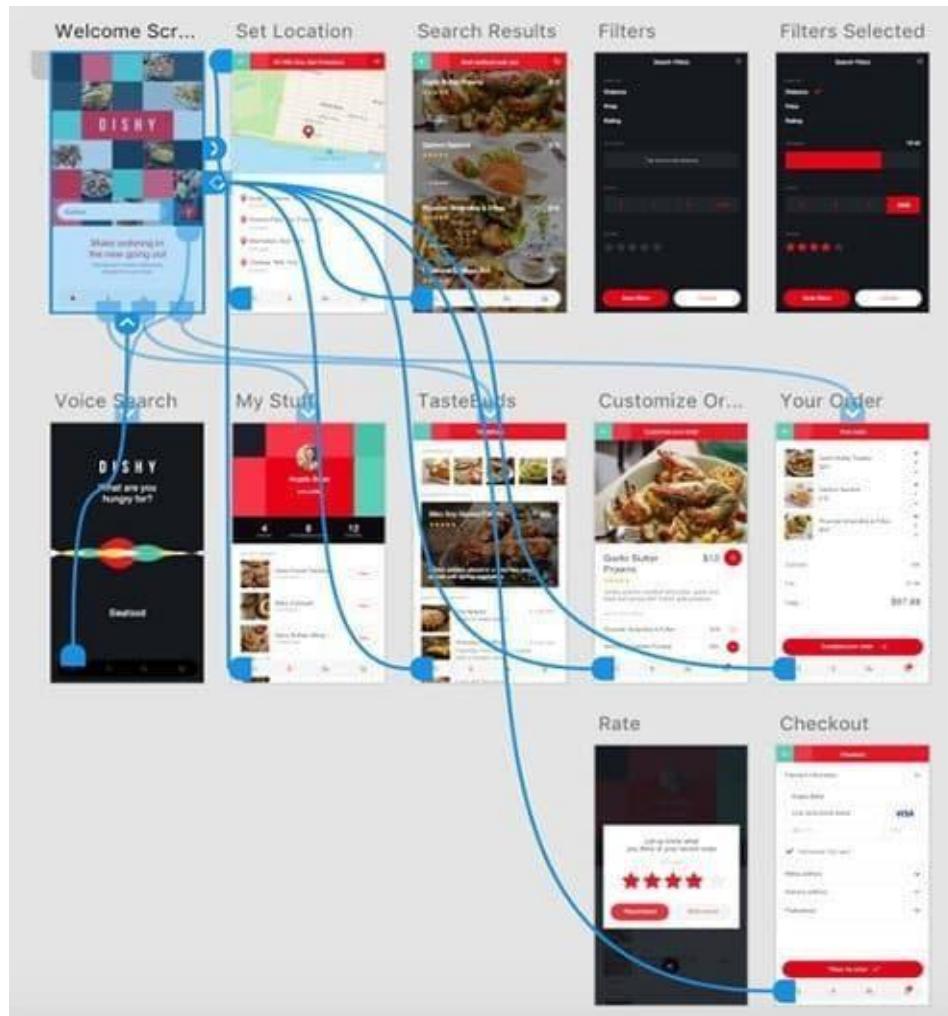


## Prototyping:

Type of Tool	Prototyping
Name: Of the Tool (Include Company Name, Website etc.)	Adobe XD Company Name: Adobe Experience Design Website : <a href="http://www.adobe.com/products/xd.html">www.adobe.com/products/xd.html</a>
License/ Open Source	Open Source

Explanation of Tool	<p><u>Adobe XD</u> offers a vector-based system for putting together prototypes, including tools for creating interactions, transitions, and other types of dynamic functionality. Because it's vector based, scaling and resizing elements is no problem. Adobe XD works well alongside other Adobe family apps like Illustrator and Photoshop. It's nice to be able to edit Adobe images, like a .psd file, right in the application. From UI design to UX design, Adobe XD covers all the tools a designer needs from conceptualization through high-resolution prototypes. And they're continually adding to this product with monthly updates that expand its functionality.</p>
Procedure	<p>1. How tool accepts the input?  Ans) When introducing actions to a prototype, any element or set of elements can be used as a trigger. One element may have multiple triggers or actions chosen for it. You can also copy and paste previous interactions to avoid having to recreate them.</p> <p>2. How tool processes the data?  Ans) Adobe XD is a collaborative tool which stores data in the cloud and auto saves our work. Data is processed in real time.</p> <p>3. How tool displays the output/result?  Ans) We can view the produced wire frame with actual device screen size by running a particular frame, many</p>

	frames, or all the frames in the canvas on a screen. Frames can be exported in a variety of formats as well.
Conclusion	Whether tool will be selected for laboratory activities? No



### Proof of Concept:

Type of Tool	Proof of Concept
Name: Of the Tool (Include Company Name, Website etc.)	UX Pin Company Name: UXPin Inc. Website : <a href="http://uxpin.com/">http://uxpin.com/</a>

License/ Open Source	Open Source
Explanation of Tool	UX Pin is a product design platform used by the designers. Let us easily design, collaborate, and present from low-fidelity wireframes to fully-interactive prototypes.
Procedure	<p>1. How tool accepts the input?            Ans) With only one click in UXPin, elements can be filled with actual data from Google Sheets, JSON, or CSV.            Additionally, you can use a variety of example data, including names, addresses, and avatars            .</p>
	<p>2. How tool processes the data?            Ans) UXPin uses the layer names to link the elements with the relevant columns in the Google Sheet. Each CSV file has rows and columns. This structure makes each CSV file resemble a table.</p> <p>3. How tool displays the output/result?            Ans) Every time a user draws something on the canvas using the code-based design tooling paradigm (UXPin), the tool generates the HTML, CSS, and JSON code and uses the browser rendering engine to represent it visually.</p>
Conclusion	Whether tool will be selected for laboratory activities? No

The image shows a screenshot of a mobile application builder interface. At the top, there is a logo for "K. J. SOMAIYA COLLEGE OF ENGG." featuring a shield with various symbols like gears, hands, and industrial structures. Below the logo, the interface has a header bar with a title "Homepage" and various icons. The main workspace features a grid-based layout with a white smartphone-shaped card centered. This card contains a 4x3 grid of twelve light blue rounded squares. To the right of the card, there is a sidebar with several icons: a gear, a water droplet, a letter 'A', a grid, a gear with a lightning bolt, and a lightning bolt. A modal window is open on the right side, titled "ACTION". It contains a "TRIGGER" section with a dropdown menu set to "Click (Tap)" and an "ACTION" section with a dropdown menu set to "Open new screen". There are "ADD ADVANCED ANIMATION", "ADD", and "CANCEL" buttons at the bottom of the modal. On the left side of the workspace, there is a sidebar with a library of widgets. The categories shown are "Homepage" (selected), "Libraries" (set to "Featured"), and "Type to search widgets library". The "Homepage" category lists items such as "Arrow", "Box", "Button", "Calendar", "Centered Pagination", "Checkbox", "Image", and "Line".

**Outcomes:**

**CO1: Understand concepts related to User Interface Design.**

---

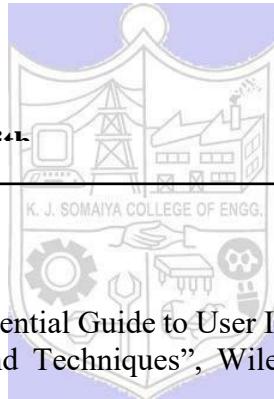
**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)**

From the experiment, various mock ups, wireframing, proof of concept designing tools were explored and a few choices were made for selection of the tools for the project.

---

**Grade: AA / AB / BB / BC / CC / CD /DD**

~~Signature of Faculty in charge with~~



**References:**

Wilbert O. Galitz, “The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques”, Wiley Computer Publishing, Second Edition, 2002

Interaction”, O’rielly Media, First Edition, 2009



## **Experiment No. 4**

**Title: In Page Editing Web UI Principle**



Batch: A3

Roll No.: 16010421073

Experiment No.:4

**Aim: To create wireframe for Web UI – In Page Editing principle****Resources needed:** Wireframing tool**Theory:**

Content on web pages has traditionally been display-only. If something needs editing, a separate form is presented with a series of input fields and a button to submit the change.

**In –Page Editing:**

There are six patterns that define the most common in-page editing techniques:

Single-Field Inline Edit:	Editing a single line of text
Multi-Field Inline Edit:	Editing more complex information
Overlay Edit:	Editing in an overlay panel
Table Edit:	Editing items in a grid
Group Edit:	Changing a group of items directly
Module Configuration:	Configuring settings on a page directly

The most direct form of In-Page Editing is to edit within the context of the page. First, it means don't leave the page. Second, do the editing directly in the page.



Figure 1 shows principle of Single-Field Inline Edit

Challenges associated with Single- Field Inline Edit

- Discoverability
- Accessibility

**Multi-Field Inline Edit**

The pattern Multi-Field Inline Edit describes: editing multiple values inline. The simplest example of the same is form.

Main Category > Sub Category				
	Name	Type	Date	Status
	This_is_a_long_name	Basic Type	Mar 17, 2016	Enabled
	This_is_a_long_name	Basic Type	Mar 17, 2016	
	This_is_a_long_name	Some Type	Mar 17, 2016	Enabled
	This_is_a_long_name	Basic Type	Mar 17, 2016	Enabled
	This_is_a_long_name	Basic Type	Mar 17, 2016	Enabled
	This_is_a_long_name	Some Type	Mar 17, 2016	Enabled

Figure 2 shows principle of Multi-Field Inline Edit

### Overlay Edit

Overlay Edit patterns bring the editing form just a layer above the page. While still not leaving the page for editing, it does not attempt to do the editing directly in the flow of the page. Instead a lightweight pop-up layer (e.g., dialog) is used for the editing pane.

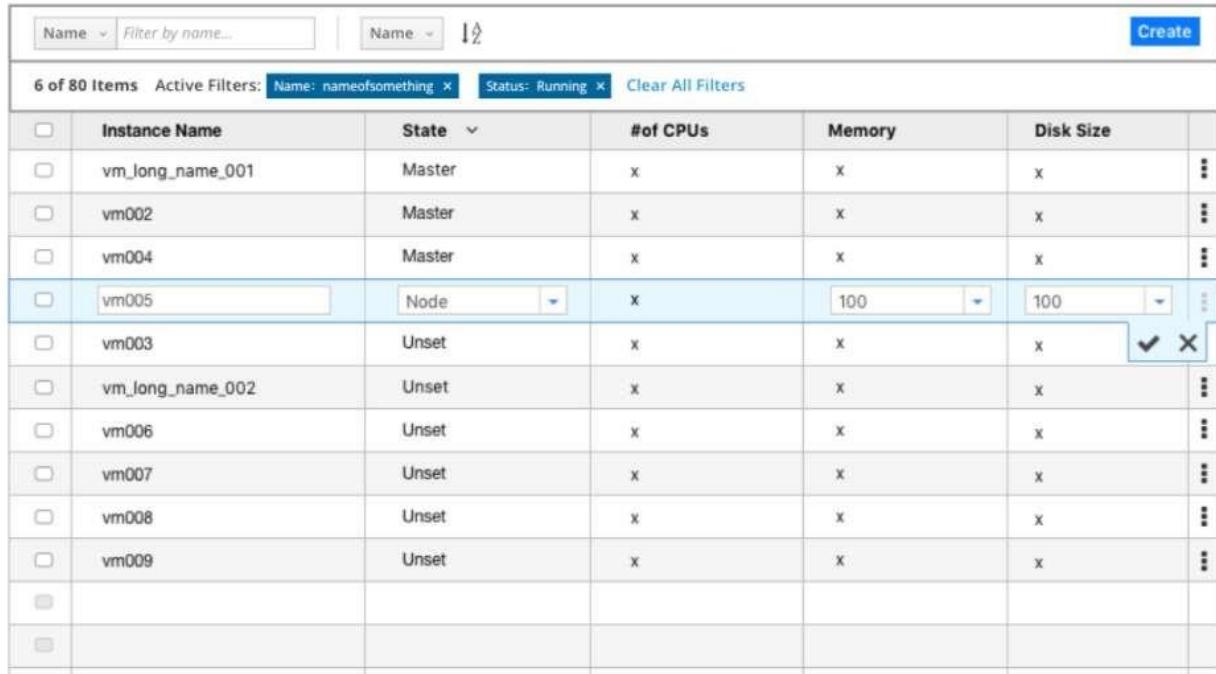


Figure 3 shows principle of Overlay Edit

In LinkedIn page, rather than the usual design pattern of bringing up an overlay to allow users to edit a field a user can click on the field to edit it within the page.

### Table Edit

Editing tables of data is less common in consumer web applications but in enterprise web applications, however, tables reign supreme. The most common request is for the table editing to work like Microsoft Excel, which long ago set the standard for editing data in a grid. A good example of Table Edit is a Google Docs Spreadsheet.



<input type="checkbox"/>	Instance Name	State	#of CPUs	Memory	Disk Size	
<input type="checkbox"/>	vm_long_name_001	Master	x	x	x	...
<input type="checkbox"/>	vm002	Master	x	x	x	...
<input type="checkbox"/>	vm004	Master	x	x	x	...
<input type="checkbox"/>	vm005	Node	x	100	100	...
<input type="checkbox"/>	vm003	Unset	x	x	x	✓ ✕
<input type="checkbox"/>	vm_long_name_002	Unset	x	x	x	...
<input type="checkbox"/>	vm006	Unset	x	x	x	...
<input type="checkbox"/>	vm007	Unset	x	x	x	...
<input type="checkbox"/>	vm008	Unset	x	x	x	...
<input type="checkbox"/>	vm009	Unset	x	x	x	...
<input type="checkbox"/>						
<input type="checkbox"/>						

Figure 4 shows principle of Table Edit

### Group Edit

To keep the display of items on the page as uncluttered as possible while still supporting editing, consider using a single mechanism to enter a special editing mode: Group Edit.

### Module Configuration

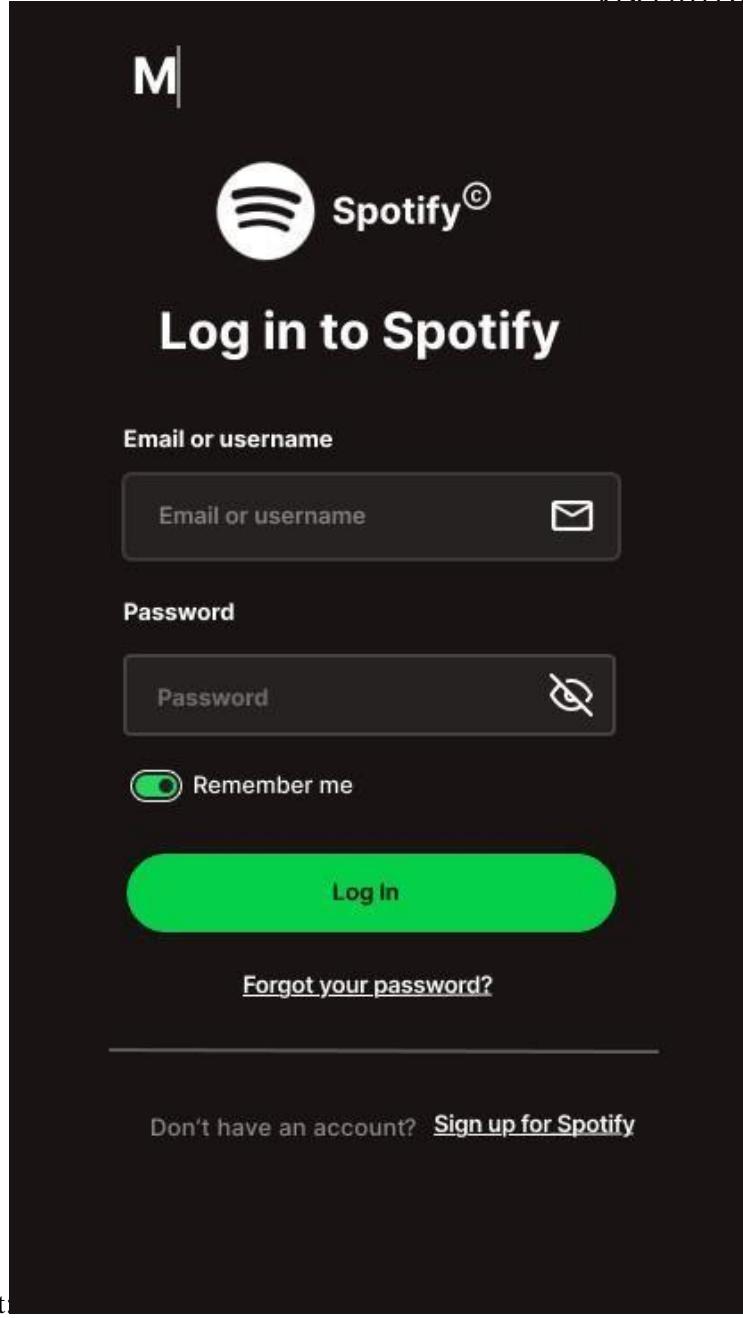
Module Configuration is a common pattern on these types of sites. Instead of modifying modules on a separate page, the sites provide ways to directly configure the amount and type of content that shows in each module.

### Procedure:

- 
- Create wireframes incorporating In Page Editing for chosen topic
- 

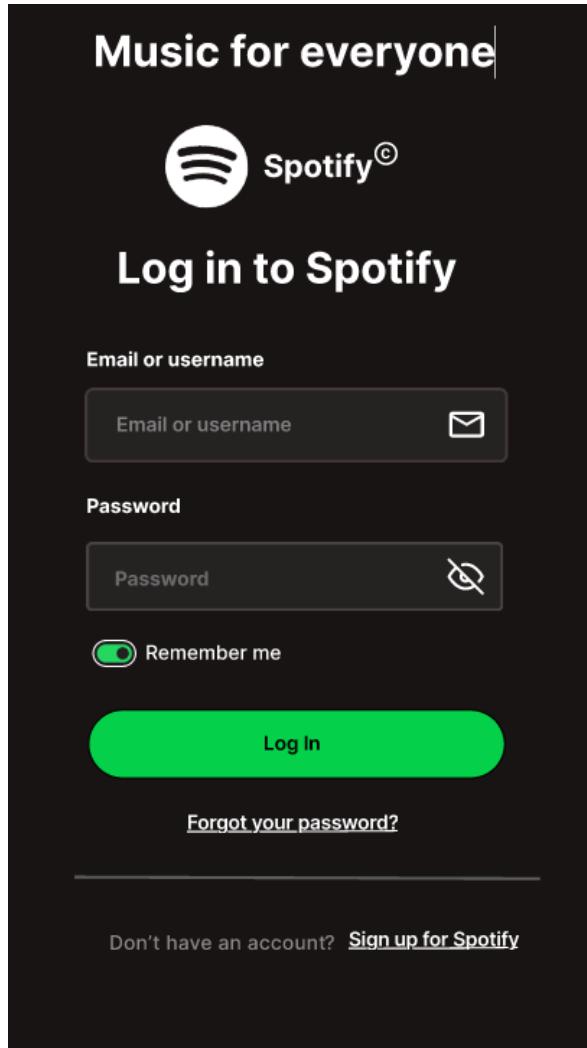
### Result:

Spotify Log In(Text editing)-Music Player App

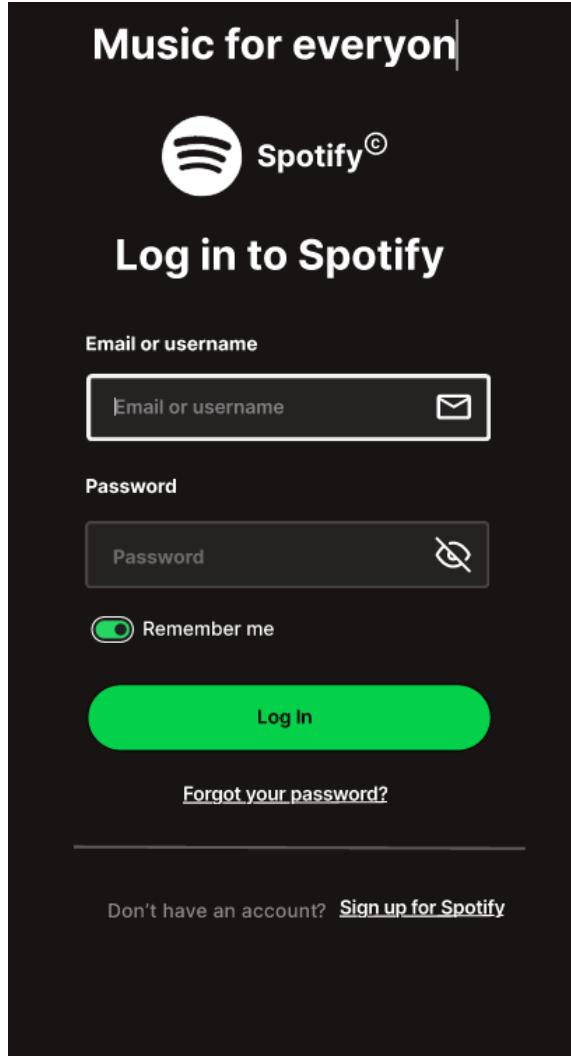


Single field edit

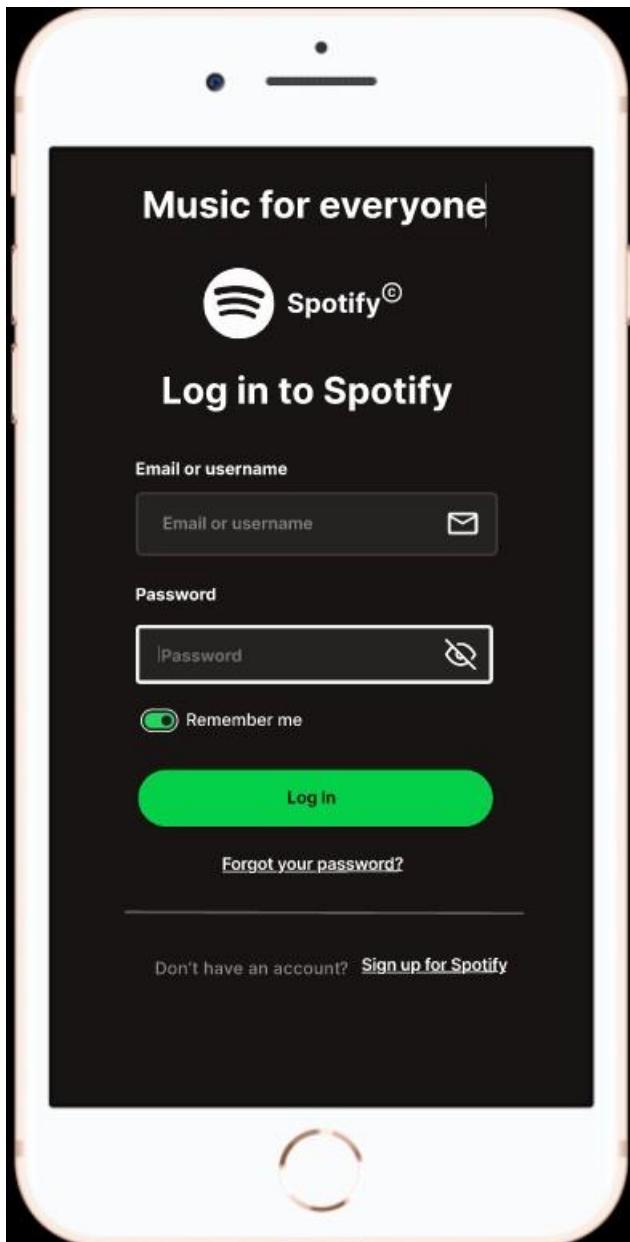
Music for everyone (Text animation)



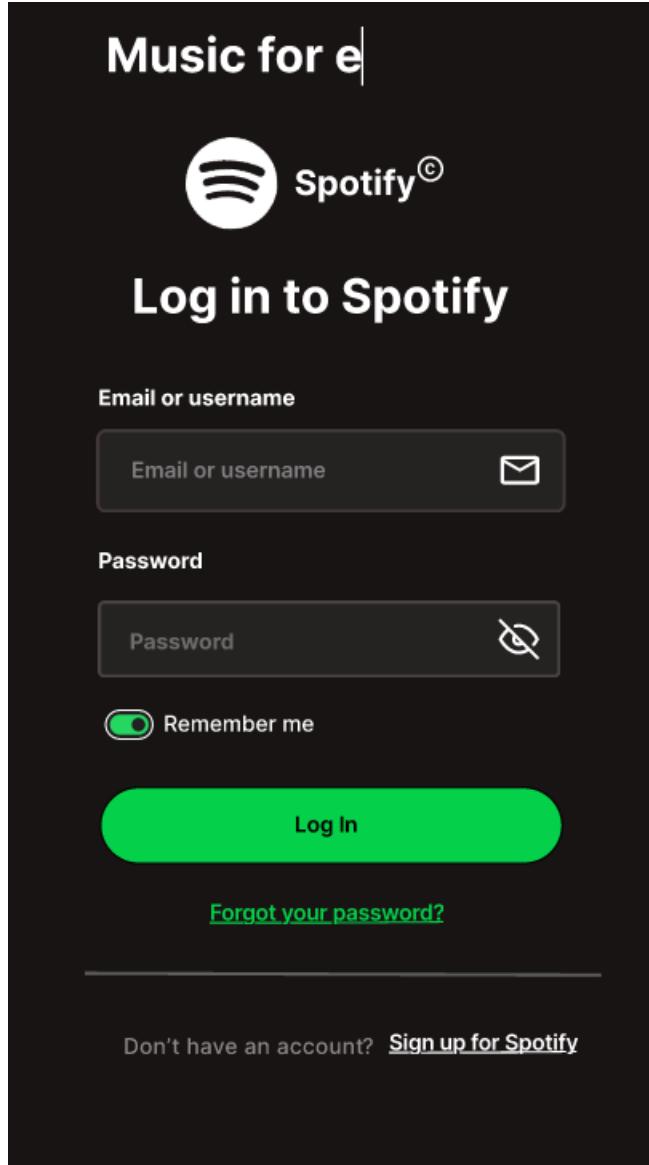
Hover effect – (Email and username interactive)



Password:



Hover effect: (Forgot your password)



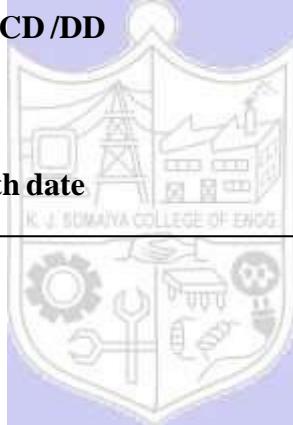
**Outcomes:**

CO2: Apply principles of Web interface design.

**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)**

Thus we created a wireframe for in page editing for spotify with text field.

**Grade: AA / AB / BB / BC / CC / CD/DD**



**Signature of faculty in-charge with date**

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**References:**

1. Wilbert O. Galitz, “The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques”, Wiley Computer Publishing, Second Edition, 2002
2. Bill Scott, Theresa Neil, “Designing Web Interfaces Principles & Patterns for Rich Interaction”, O’rielly Media, First Edition, 2009



## **Experiment No. 5**

**Title: Drag and Drop and Stay on page principles**



Batch: A3

Roll No.:16010421073

Experiment No.:5

**Aim:** To create wireframe for Web UI –Drag and Drop and stay on page principles

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**Resources needed:** Wireframing tool

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### Theory:

#### Drag and Drop

There are at least 15 events available for cueing the user during a drag and drop interaction:

**Page Load:** Before any interaction occurs, you can pre-signify the availability of drag and drop. For example, you could display a tip on the page to indicate draggability.

**Mouse Hover:** The mouse pointer hovers over an object that is draggable.

**Mouse Down:** The user holds down the mouse button on the draggable object.

**Drag Initiated:** After the mouse drag starts (usually some threshold—3 pixels).

**Drag Leaves Original Location:** After the drag object is pulled from its location or object that contains it.

**Drag Re-Enters Original Location:** When the object re-enters the original location.

**Drag Enters Valid Target:** Dragging over a valid drop target.

**Drag Exits Valid Target:** Dragging back out of a valid drop target.

**Drag Enters Specific Invalid Target:** Dragging over an invalid drop target.

**Drag Is Over No Specific Target:** Dragging over neither a valid or invalid target. Do you treat all areas outside of valid targets as invalid?

**Drag Hovers Over Valid Target:** User pauses over the valid target without dropping the object. This is usually when a spring loaded drop target can open up. For example, drag over a folder and pause, the folder opens revealing a new area to drag into.

**Drag Hovers Over Invalid Target:** User pauses over an invalid target without dropping the object.

**Drop Accepted:** Drop occurs over a valid target and drop has been accepted.

**Drop Rejected:** Drop occurs over an invalid target and drop has been rejected. Do you zoom back the dropped object?

**Drop on Parent Container:** Is the place where the object was dragged from special? Usually this is not the case, but it may carry special meaning in some contexts.

During each event one can visually manipulate a number of actors. The page elements available include:

- Page (e.g., static messaging on the page)
- Cursor
- Tool Tip
- Drag Object (or some portion of the drag object, e.g., title area of a module)

- Drag Object's Parent Container
- Drop Target

### Stay on page Principle includes:

- Overlays

Instead of going to a new page, a mini-page can be displayed in a lightweight layer over the page.

- Inlays

Instead of going to a new page, information or actions can be inlaid within the page.

- Virtual Pages

By revealing dynamic content and using animation, we can extend the virtual space of the page.

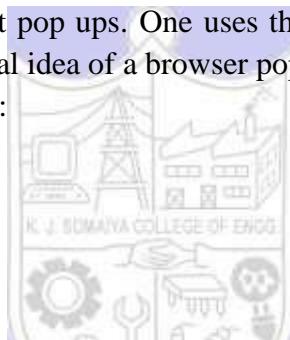
### Overlay

Overlays are really just lightweight pop ups. One uses the term lightweight to make a clear distinction between it and the normal idea of a browser pop up.

The three specific types of overlays:

- Dialog Overlays,
- Detail Overlays, and
- Input Overlays

Dialog Overlay





**Activation**

Clicking the "Buy" button initiates the purchase process.



**Overlay treatment**

The confirmation dialog is shown in a lightweight overlay. Since the overlay is modal (interaction is only accepted in the overlay) the rest of the page is dimmed down. The user may also cancel the purchase.

**Figure** Netflix uses a lightweight pop up to confirm a previously viewed DVD purchase; in addition, it uses the Lightbox Effect to indicate modality

## Detail Overlay

The Detail Overlay allows an overlay to present additional information when the user clicks or hovers over a link or section of content. Toolkits now make it easier to create overlays across different browsers and to request additional information from the server without refreshing the page.



### Detail overlay activation

However, often more information is needed to decide whether a movie should be played or added to a movie queue.

By providing a synopsis along with personalized recommendation information, the user can quickly make a determination.

The movie detail information is displayed after a slight delay.

## Input Overlay

Input Overlay is a lightweight overlay that brings additional input information for each field tabbed into.



**Input overlay**

Tabbing or clicking into any field wraps the field in an overlay. The overlay provides additional input information.



**Obscuring fields**

The overlay does obscure fields just below it, but not to the left or right.



**Deactivation**

Clicking anywhere removes the overlay. This lets the user click through the field covered by the overlay.

## Inlays

A simple technique is to expand a part of the page, revealing a dialog area within the page.



## List Inlays

Lists are a great place to use Inlays. The List Inlay works as an effective way to hide detail until needed.



## Virtual Page

- Overlays allow bringing additional interactions or content in a layer above the current page. Inlays allow doing this within the page itself.
- However, another powerful approach to keeping users engaged on the current page is to create a virtual page.
- Patterns that support virtual pages include:
  - Virtual Scrolling
  - Inline Paging
  - Scrolled Paging
  - Panning
  - Zoomable User Interface

## Virtual scrolling

This screenshot shows the Yahoo! Mail interface. The left sidebar includes links for Check Mail, Compose, Find Messages, Home, Drafts, Sent, Spam (101), Trash (11), Contacts, Calendar, and Address Book. The main area displays a list of 314 messages. The first few messages have full details visible, while the rest are shown as truncated lines followed by ellipses and a 'Load more' link.

## Scrolled list

Email messages are displayed as a scrolled list. This has been the normal approach on desktop mail clients. Yahoo! Mail brings that approach to the Web.

This screenshot shows the same Yahoo! Mail interface as above, but with a different state. Most of the message list items are replaced by the word "Loading...", indicating they are being loaded on demand as the user scrolls down.

## Scrolling

Messages are loaded on demand. As the user scrolls, the content items are filled in. While loading, the message lines are replaced with the text "Loading..."

## Inline Paging



This screenshot shows a search results page for "Men's athletic shoes". The left sidebar includes a search bar and filters for Gender (Men), Price Range (\$0-\$100), and Brand (Adidas). The main area displays a grid of eight shoe products. Below the grid are pagination controls labeled "Previous", "Next", and page numbers 1, 2, 3, ..., 80, ..., 100, ..., 1000. Each product card includes a thumbnail, the brand name, a brief description, and a price.

## Paginated results

Searching for "Men's athletic shoes" displays a traditional-looking set of search results. The pagination controls are familiar (shown as an exploded callout).

### Scrolled paging carousel



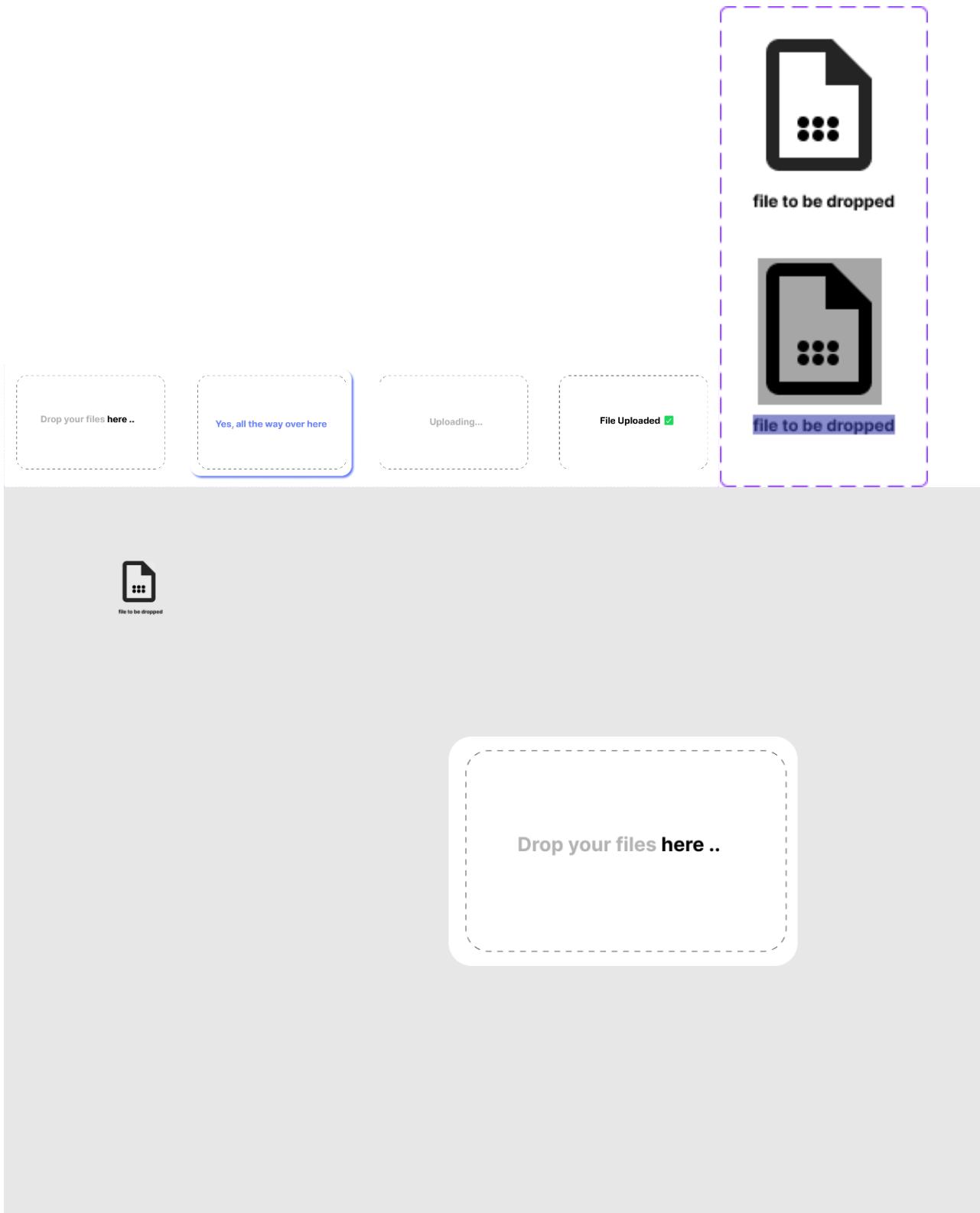
### Panning and Zoomable Interface



### Procedure:

- Create wireframes incorporating Drag and Drop and Stay on page principles for chosen topic

### Result:

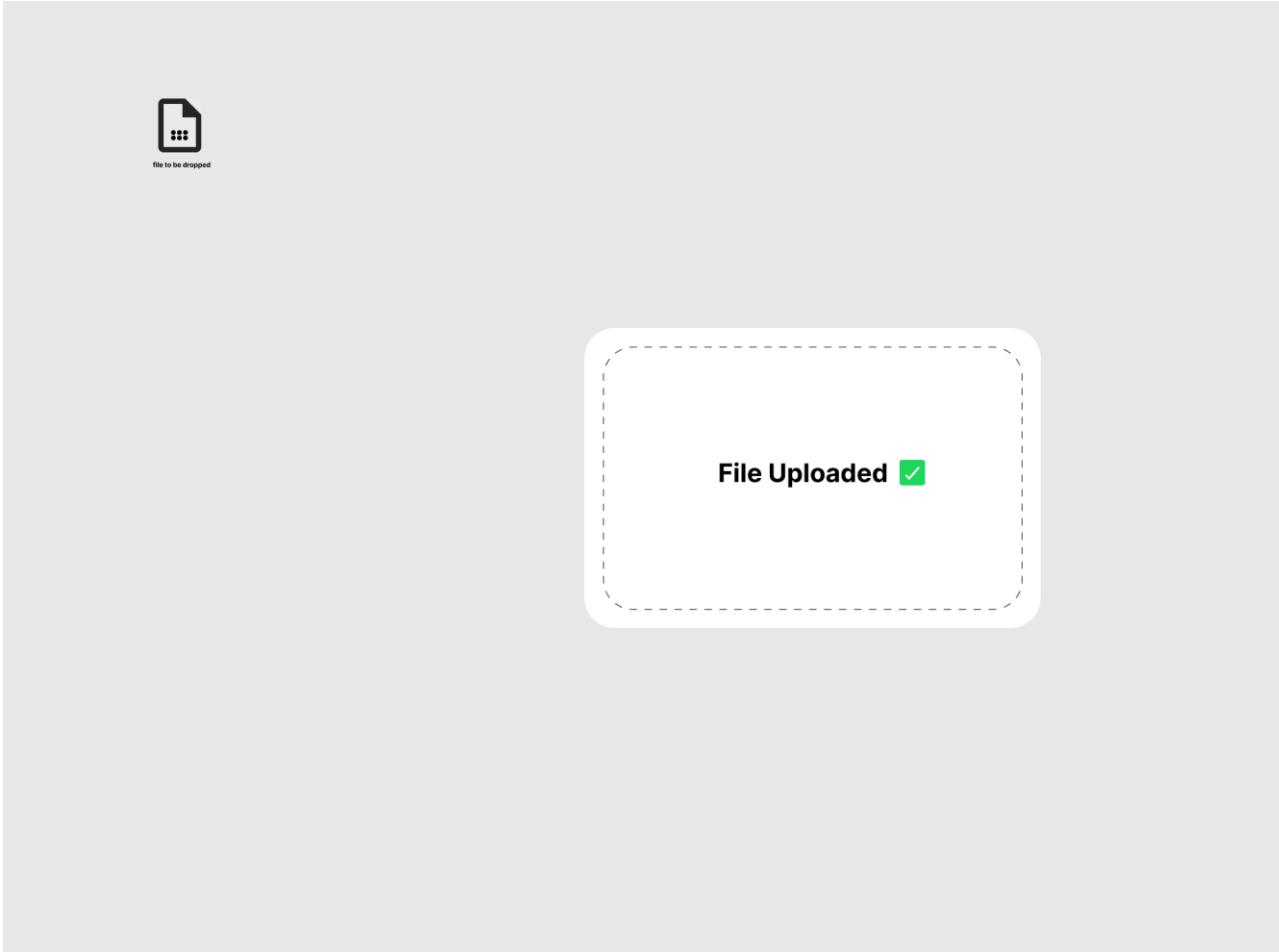


Yes, all the way over here



file to be dropped

Uploading...



**Question:**

**1. Discuss in detail any one web development framework/technology to implement drag and drop principle.**

**Ans:**

Certainly! One popular web development technology for implementing the drag-and-drop principle is the HTML5 Drag and Drop API. HTML5 provides a native way to enable drag-and-drop interactions in web applications, which is highly flexible and customizable. Let's discuss the HTML5 Drag and Drop API in detail:

**HTML5 Drag and Drop API:**

The HTML5 Drag and Drop API provides a standard way to make elements on a web page draggable and then allow other elements to accept those dragged items. This API consists of a set of events and attributes that allow developers to create rich and interactive user interfaces.

Here's a breakdown of the key components and concepts involved in the HTML5 Drag and Drop API:

**1. Drag Sources:**

- These are elements that can be dragged by the user. You can make any HTML element a drag source by setting the `draggable` attribute to `true`.

**html**

```
<div id="drag-source" draggable="true">Drag me!</div>
```

**2. Drop Targets:**

- These are elements that can accept the dragged items. You can make an element a drop target by handling specific events and allowing it to receive the dragged data.

**html**

```
<div id="drop-target">Drop here!</div>
```

**3. Events:**

- The HTML5 Drag and Drop API relies on several key events for drag-and-drop interactions:

- `dragstart`: Fired on a drag source when a drag operation starts. It allows you to set the data being transferred.
- `dragenter`: Fired when a draggable element enters a drop target.
- `dragover`: Fired when a draggable element is over a drop target. You can use this event to specify whether the drop is allowed.
- `dragleave`: Fired when a draggable element leaves a drop target.
- `drop`: Fired when a draggable element is dropped onto a drop target. You can retrieve the transferred data here.

#### 4. Data Transfer:

- The `DataTransfer` object is used to pass data between the drag source and drop target. You can set data using the `setData` method during the `dragstart` event and retrieve it during the `drop` event.

##### **javascript**

###### **Setting data during dragstart**

```
document.getElementById("drag-source").addEventListener("dragstart",
function(event) {
  event.dataTransfer.setData("text/plain", "Data to be transferred");
});
```

###### **Retrieving data during drop**

```
document.getElementById("drop-target").addEventListener("drop",
function(event) {
  event.preventDefault();
  const data = event.dataTransfer.getData("text/plain");
  Process the transferred data
});
```

#### 5. Preventing Defaults:

- To enable drag and drop, you often need to prevent the default behavior of the browser for certain events like `dragover` and `drop` using `event.preventDefault()`.

##### **javascript**

###### Prevent default behavior to allow dropping

```
document.getElementById("drop-target").addEventListener("dragover",
function(event) {
  event.preventDefault();
});
```

## 6. Styling:

- You can provide visual cues to the user by changing the styling of the drag source and drop target elements using CSS.

css

```
.dragging {  
    opacity: 0.5; / Change opacity when dragging /  
}  
  
.droppable {  
    border: 2px dashed #333; / Highlight the drop target /  
}
```

## 7. Accessibility:

- Ensure that your drag-and-drop implementation is accessible to all users by providing ARIA roles and labels for screen readers.

The HTML5 Drag and Drop API is a powerful tool for implementing drag-and-drop functionality in web applications. It allows for a wide range of custom interactions, from simple reordering of lists to complex file uploads and more. However, it's important to note that while it's a native HTML5 feature, browser support is generally good but can vary, so you should always check for compatibility with your target audience.

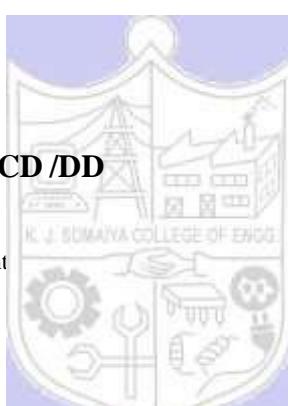
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### Outcomes:

**CO2:** Apply principles of Web interface design

**Conclusion:** (Conclusion to be based on the objectives and outcomes achieved)

**Thus we successfully designed wireframe for drag and drop file.**



**Grade: AA / AB / BB / BC / CC / CD / DD**

**Signature of faculty in-charge with date**

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**References:**

1. Wilbert O. Galitz, "The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques", Wiley Computer Publishing, Second Edition, 2002
2. Bill Scott, Theresa Neil, "Designing Web Interfaces Principles & Patterns for Rich Interaction", O'rielly Media, First Edition, 2009



## **Experiment No. 6**

**Title: Patterns with form design**



Batch: A3

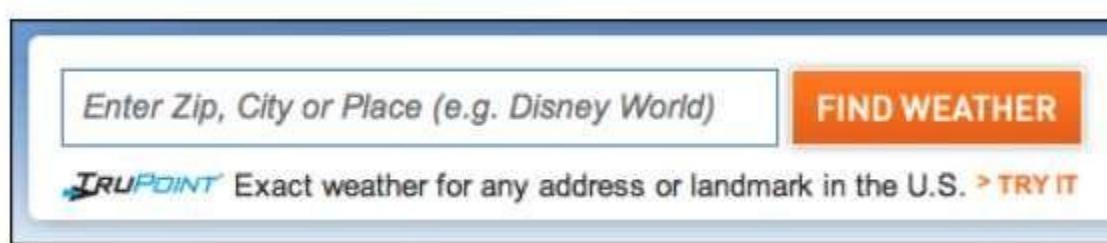
Roll No.: 16010421073

Experiment No.:6

**Aim:** To create patterns with form design**Resources needed:** Wireframing tool**Theory:**

The patterns, techniques, and controls described here apply mostly to form design—a form being simply a series of question/answer pairs. However, they will also be useful in other contexts, such as for single controls on web pages or on application toolbars. Input design and form design are core skills for interaction designers.

Following are some samples of form design:

**Forgiving Format:**

**Figure 1 Forgiving Form Format**

Forgiving form format permits users to enter text in a variety of formats and syntax, and make the application interpret it intelligently.

Use When:

UI asks for data that users might type with an unpredictable mix of whitespace, hyphens, abbreviations, or capitalizations. More generally, the UI can accept input of various kinds from the user—different meanings, formats, or syntax.

Examples:

The New York Times uses Forgiving Format in several features that need information from users. Figure shows examples from its real estate search and from its financial quotes feature.

**Figure 2: Two text fields in the New York Times website**

One place where this pattern should be used, but usually isn't, is when credit card numbers are requested from the user. As long as 16 digits are typed, why should the form care whether the user separates them by spaces, or by hyphens, or by nothing at all? It's not difficult to strip out separating characters. PayPal, for example, doesn't accept spaces in credit card numbers shown in figure 3.

**Figure 3 PayPal Form**

Figure 4 comes from Outlook's tool for setting up a meeting. Look at the "Start time:" and "End time:" fields at the bottom of the screenshot—one don't need to give it a fully defined date, like what's in the text fields now. If today is April 24 and one wants to set up a meeting for April 29, one can type any of the following terms:

- next Thu    • 29/4/2004    • 4/29
- nxt thu    • 4/29/2004    • five days
- thu            • 29/4            • 5 days

And so on—there are probably other accepted formats, too. The specified date then is "echoed back" to the user in the appropriate format for the user's language and location.

The screenshot shows a window titled 'New Appointment' in Microsoft Outlook. It contains fields for 'To...', 'Subject:', and 'Location:' with empty text boxes. Below these are time-related controls: a clock icon, dropdown menus for 'Start time' (set to 'Thu 4/29/2004 8:00 AM') and 'End time' (set to 'Thu 4/29/2004 8:30 AM'), and a checkbox for 'All day event' which is unchecked.

**Figure 4 Outlook's tool form**

### **Structured Format :**

The screenshot shows a form with three main fields: 'Name:' followed by a text input field, 'Company:' followed by a text input field, and 'Serial Number:' followed by a text input field containing '1045' and five empty adjacent input fields.

**Figure 5 Structured Form Format 1**

Instead of using one text field, use a set of text fields that reflect the structure of the requested data.

#### **Use When:**

Form interface requests a specific kind of text input from the user, formatted in a certain way. That format is familiar and well defined, and designer don't expect any users to need to deviate from the format designer expect. Examples include credit card information, local telephone numbers, and license strings or numbers. It's generally a bad idea to use this pattern for any data in which the preferred format may vary from user to user. Consider especially what might happen if interface is used in other countries. Names, addresses, postal codes, and telephone numbers all have different standard formats in different places. Consider using Forgiving Format in those cases.

#### **Examples:**

At its simplest, Structured Format literally can take the shape of the data, complete with spaces, hyphens, and parentheses, as illustrated in the following figure.

Telephone number	(504) 555-1212	( <input type="text" value="504"/> ) <input type="text" value="555"/> - <input type="text" value="1212"/>
Credit card number	1021 1234 5678 0000	<input type="text" value="1021"/> <input type="text" value="1234"/> <input type="text" value="5678"/> <input type="text" value="0000"/>
Date	12/25/2004	<input type="text" value="12"/> / <input type="text" value="25"/> / <input type="text" value="2004"/>
ISBN number	0-1950-1919-9	<input type="text" value="0"/> - <input type="text" value="1950"/> - <input type="text" value="1919"/> - <input type="text" value="9"/>

**Figure 6 Structured Form Format 2**

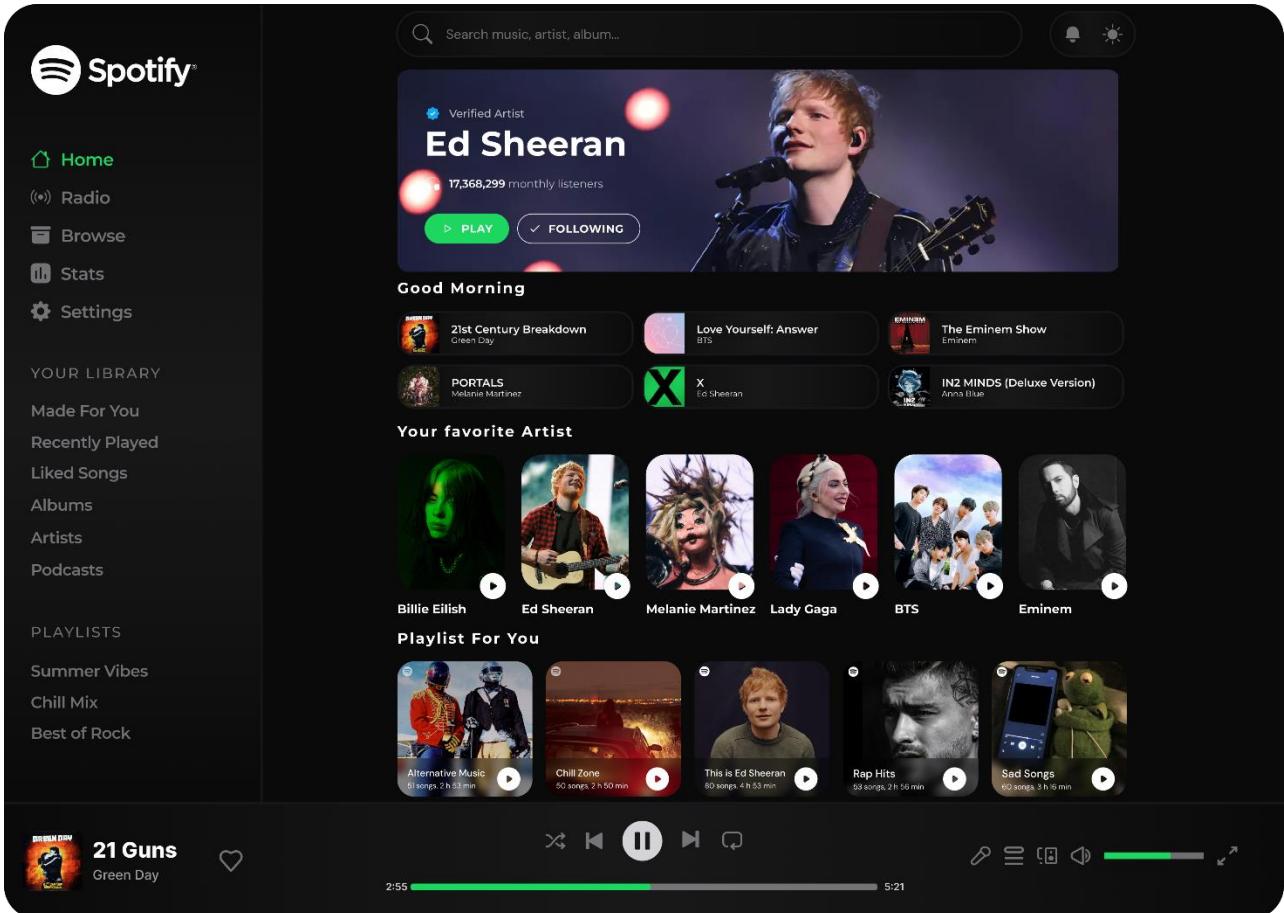
For date input, LiveJournal uses Structured Format in combination with a drop down to choose a month (see Figure 7). It defaults to the current day and time.

<b>Date:</b>	<input type="text" value="March"/> <input type="button" value="▼"/> <input type="text" value="15"/> , <input type="text" value="2005"/> <input type="text" value="00"/> : <input type="text" value="11"/> (24 hour time)
<b>Subject:</b>	<input type="text"/>

**Figure 7 Structured Form Format 3****Procedure:**

- 
- Create wireframes incorporating patterns with Form design for the chosen topic
- 

**Result:**



**In this design frame the pattern is used for searching song either by typing artist name, album, genre,lyrics etc.**

---

**Outcomes:** CO2 : Apply principles of Web interface design.

**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)**

Thus we successfully designed music player web UI pattern design for searching song.

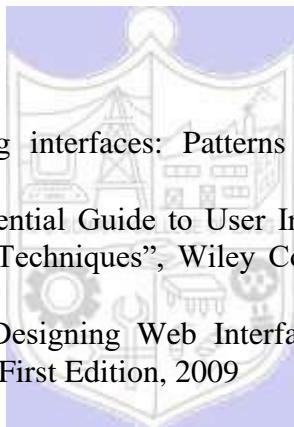
**Grade: AA / AB / BB / BC / CC / CD /DD**

**Signature of faculty in-charge with date**

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**References:**

1. Tidwell, Jenifer, "Designing interfaces: Patterns for effective interaction design. " O'Reilly Media, Inc.", 2010.
2. Wilbert O. Galitz, "The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques", Wiley Computer Publishing, Second Edition, 2002
3. Bill Scott, Theresa Neil, "Designing Web Interfaces Principles & Patterns for Rich Interaction", O'rielly Media, First Edition, 2009



**Experiment No. 7**

**Title: Design Dashboard**

Batch: A3

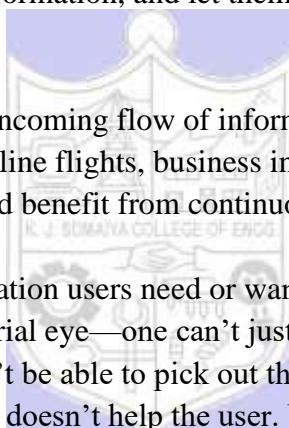
Roll No.:16010421073

Experiment No.: 7

**Aim: To create wireframe for Web UI – Dashboard****Resources needed:** Wireframing tool**Theory:**

Dashboard is a familiar and recognizable page style. Dashboards have a long history, both online and in the physical world, and people have well-established expectations about how they work: they show useful information, they update themselves, they usually use graphics to display data, and so on. A dashboard is also a guild of interlocking patterns and components.

Dashboard arranges data displays into a single information-dense page, updated regularly. It shows users relevant, actionable information, and let them customize the display as necessary.



A site or application deals with an incoming flow of information from something—web server data, social chatter, news, airline flights, business intelligence information, or financials, for example. Users would benefit from continuous monitoring of that information.

Dashboard determines what information users need or want to see. This isn't as simple as it sounds, because one needs an editorial eye—one can't just splatter the screen with confusing or unimportant data, or people won't be able to pick out the parts that matter. Remove, or at least deemphasize, information that doesn't help the user. Use a good visual hierarchy to arrange lists, tables, and information graphics on the page. Try to keep the main information on one page, with little or no scrolling, so people can keep the window on-screen and see everything at a glance. Group related data into Titled Sections, and use tabs only when confident that users won't need to see the tab contents side by side. Use One-Window Drilldown to let users see additional details about the data—they should be able to click on links or graphics to find out more.

Choose appropriate and well-designed information graphics for the data one need to show. Gauges, dials, pie charts, and 3D bar charts look nice, but they are rarely the best way to show comparative information at a glance—simple line and bar charts express data better, especially time-based data. When numbers and text are more relevant than graphics, use lists and tables. Row Striping is a common pattern for multicolumn data tables. People will try to get actionable information from the dashboard at a glance, without looking hard at every element on the page. So, when showing a text, consider highlighting keywords and numbers so that they stand out from surrounding text.

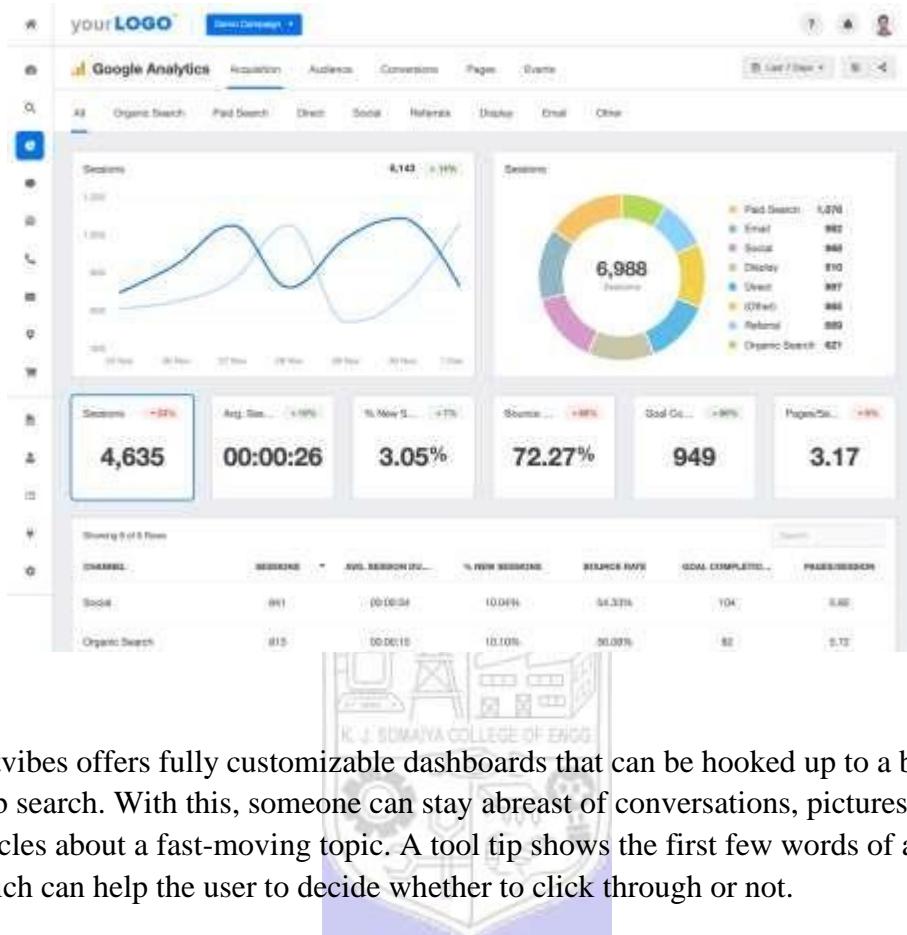
Should users be able to customize their dashboard displays? Many dashboards do offer customization, and users may expect it. One way to customize a dashboard page is to rearrange the sections—Google and My Yahoo! both offer Movable Panels to users, in addition to choosing which gadgets get shown.

### Following are some examples:

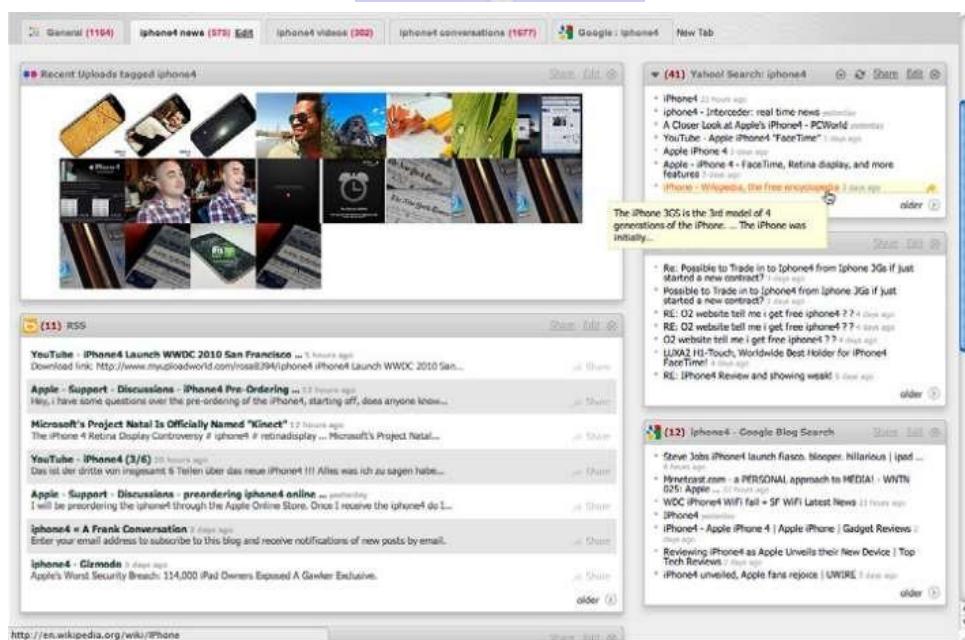
- My Yahoo! is a portal-style dashboard, showing weather, news, email, and other personalized information to a signed-in user. This is the kind of window that someone would check frequently throughout the day or week. It can be rearranged via Movable Panels, and a user can decide which sections and widgets to show.

The screenshot shows the My Yahoo! dashboard for a user named Michael. The interface includes a sidebar with links like Mail, Stocks, Weather, Horoscope, Movies, and Local Events. The main area features a "Today" section with "FEATURED" news items such as "A puppy lullaby" and "Good foods for weight loss". There's also a "In the News" section with "FEATURED" stories about stocks, the White House, Yemen, and more. A central search bar and a "Web Search" button are at the top. On the right, there's a "Yahoo! Services" sidebar with links to Pulse, Finance, Games, Groups, Hot Jobs, Maps, Music, Personals, Shopping, Sports, Travel, and Yellow Pages. A large advertisement for Southwest Airlines with the slogan "FEES DON'T FLY WITH US" is prominently displayed.

- Google Analytics uses information graphics to show a visual snapshot of a system. In the figure below, the system is a website, and the dashboard illustrates log data.



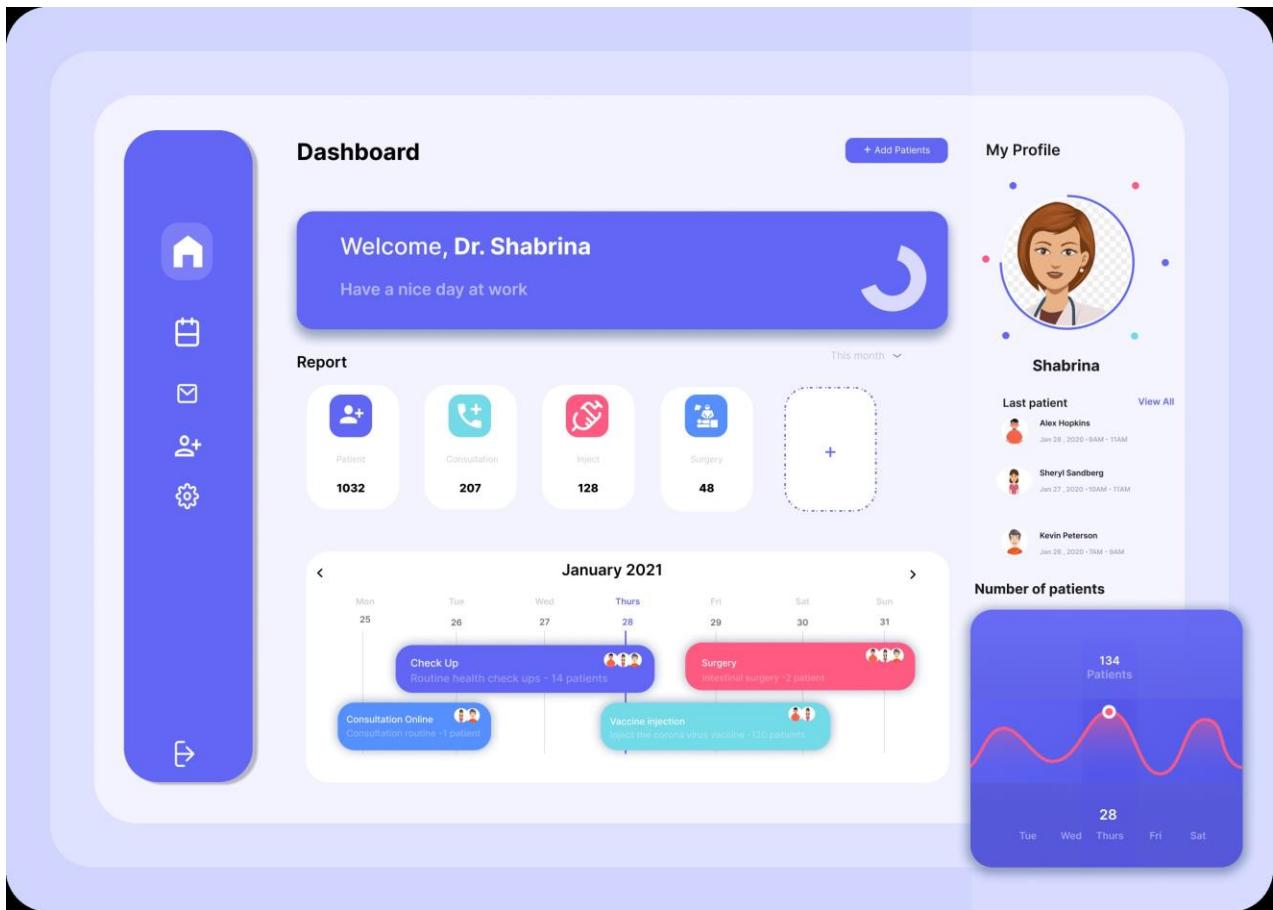
- Netvibes offers fully customizable dashboards that can be hooked up to a broad-based web search. With this, someone can stay abreast of conversations, pictures, and articles about a fast-moving topic. A tool tip shows the first few words of an article, which can help the user to decide whether to click through or not.



## Procedure:

- Create wireframes incorporating patterns with Form design for the chosen topic

## Result:



**Outcomes: CO2:** Apply principles of Web interface design

**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)**

**Thus we successfully designed a wireframe for dashboard.(medical dashboard)**

**Grade: AA / AB / BB / BC / CC / CD /DD**

**Signature of faculty in-charge with date**

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**References:**

1. Tidwell, Jenifer, "Designing interfaces: Patterns for effective interaction design. " O'Reilly Media, Inc.", 2010.

2. Wilbert O. Galitz, "The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques", Wiley Computer Publishing, Second Edition, 2002
3. Bill Scott, Theresa Neil, "Designing Web Interfaces Principles & Patterns for Rich Interaction", O'rielly Media, First Edition, 2009





## **Experiment No. 8**

**Title: Mobile UI – Page Composition**



Batch: A3

Roll No.:16010421073

Experiment No.:8

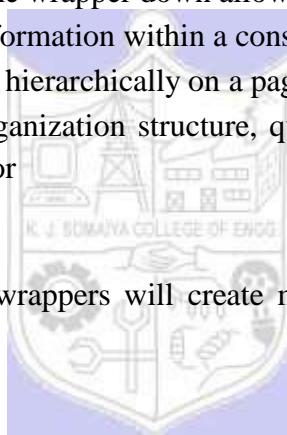
**Aim: To create wireframe for Mobile UI – Page Composition****Resources needed:** Wireframing tool**Theory:**

The composition is a process of assembling a layout that consistently arranged components and content on a page. These rules were repeated on all other pages, creating a recognizable system of component relationships that were understood by social reading norms.

Using templates is essential in mobile design. Designers want to create layouts based on cultural norms of reading conventions and how people process information.

The templates that are used across a product, on most every page of a website or application, it call a wrapper because they enclose (wrap around) all the other components and the content. Considering design from the wrapper down allows:

- The designer to organize information within a consistent template across the OS
- Information to be organized hierarchically on a page
- The user to identify the organization structure, quickly increasing learnability while decreasing performance error

**Patterns for Composition**

Using appropriate and consistent wrappers will create mappings and affordances that will allow for positive user experiences.

- Scroll

When information on a page exceeds the viewport, a scroll bar control may be required to access the additional information. Scrolling of information should almost always occur along one axis.

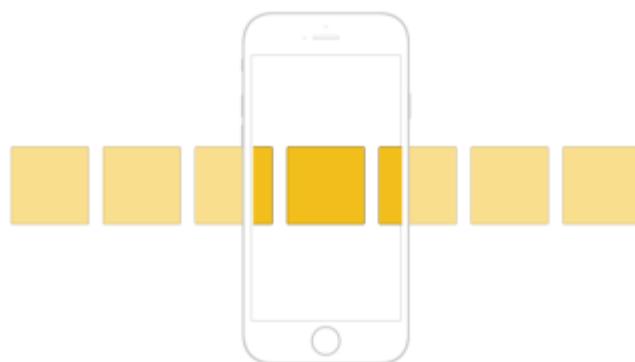
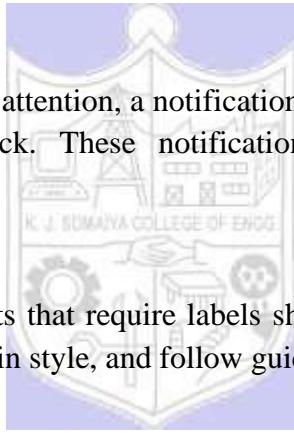


Figure Horizontal Scroll bar

Scroll is especially relevant to the list and list-like Display of Information patterns:

- Vertical List
    - Infinite List
    - Thumbnail List
    - Select List
  - Infinite List
  - Thumbnail List
  - Fisheye List
  - Carousel
  - Grid
  - Film Strip
- Annunciator Row
- This displays the status of hardware features on the top of each page. The status of functions that may be displayed is radios, input and output features, and power levels.
- Notifications
- When an alert requires user attention, a notification will occur in some form of visual, haptic, or audible feedback. These notification displays must allow for user interaction.
- 
- Titles
- Pages, content, and elements that require labels should use titles. These titles should be horizontal, be consistent in style, and follow guidelines of legibility and readability.
- Reveable Menu
- This type of menu displays additional menus that are not immediately apparent. A gesture, soft key, or on-screen selection will cause these menus to immediately display on-screen.
- Fixed Menu
- This type of menu presents an always-visible menu or control that is docked to one side of the viewport. This menu is consistently placed throughout the application. These interactive controls are most likely icons with textual coding.
- Home & Idle Screens
- These screens are used as display states when either a device is turned on or an application has exited, timed out, or returned to a device-level menu display.

- Lock Screen

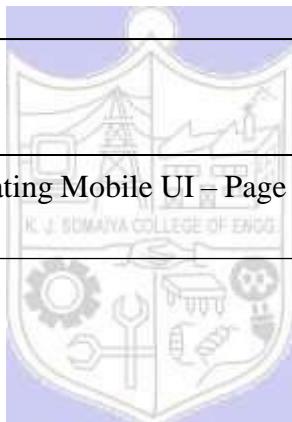
Mobile devices use this display state to save on power consumption. When necessary, the application's sleep state may become locked to protect the security of the data the user has input.

- Interstitial Screen

This type of screen is used primarily as a loading process screen during device or application startup. Wait indicators may be used to show loading progress.

- Advertising

When advertising is used within a mobile application, the advertisement must be distinct and must not affect the user experience. Obtrusive advertising could prohibit the user from achieving his task-based goals. Advertising must adhere to the specific guidelines set by the Mobile Marketing Association (MMA).



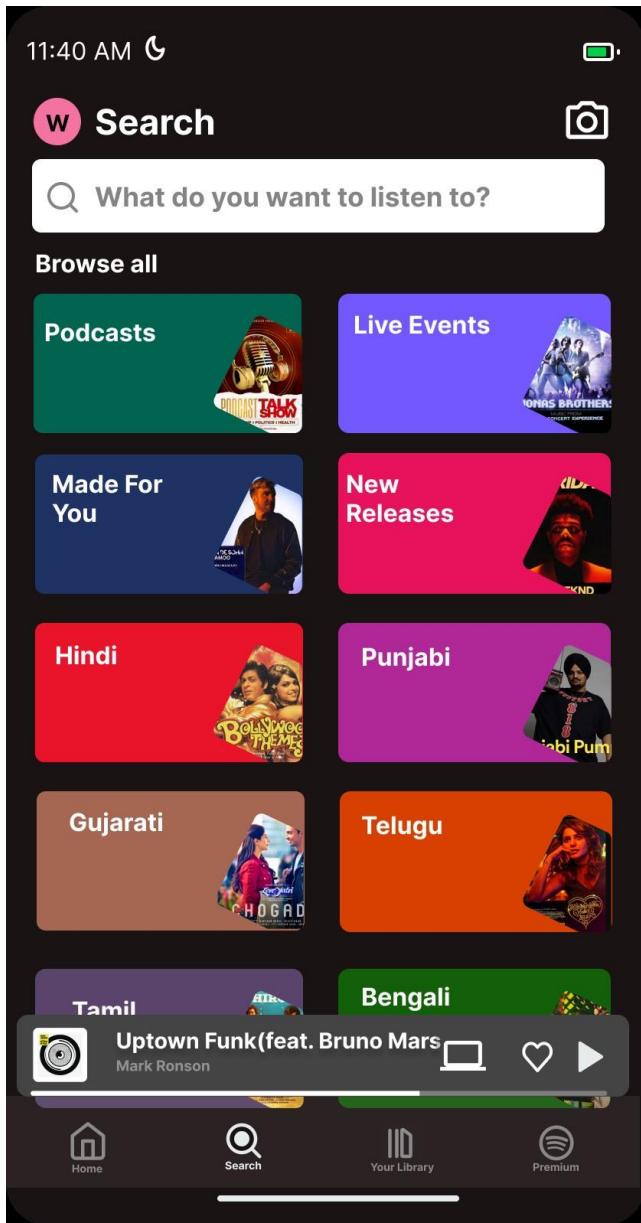
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**Procedure:**

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- Create wireframes incorporating Mobile UI – Page Composition for chosen topic
- 

**Result:**



**Grid view-** used for making categories like podcasts, live events etc.

**Fixed menu:** at bottom for navigating home, search, your library and premium plans.

**Outcomes:**

**CO3 :** Design mobile user interface with UI design patterns

**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)**

Thus successfully designed mobile UI for spotify having grid view and fixed view for pattern composition.

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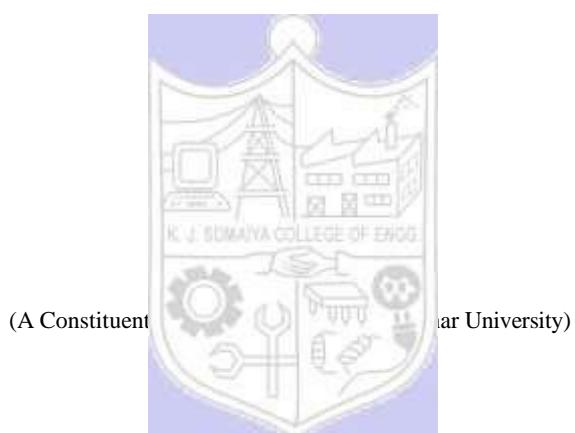
**Grade: AA / AB / BB / BC / CC / CD /DD**

**Signature of faculty in-charge with date**

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**References:**

1. Wilbert O. Galitz, "The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques", Wiley Computer Publishing, Second Edition, 2002
2. Steven Hoober, Eric Berkman, "Designing Mobile Interfaces: Patterns for Interaction Design", O'rielly Media, First Edition, 2012
3. <http://4ourth.com/wiki/Composition>





## **Experiment No. 9**

**Title: Mobile UI – Display of Information**



Batch:A3

Roll No.:16010421073

Experiment No.:9

**Aim: To create wireframe for Mobile UI – Display of Information****Resources needed:** Wireframing tool**Theory:**

While displaying information on mobile screen user interface designer needs to consider following challenges:

- Small screen size
- Variable screen width
- Touch screens
- Difficulty in typing text
- Challenging physical environments

The UI designer generalized display patterns including Splash screen, onboarding screen, home screen, menu screen, login and profile screen.

**Splash Screen**

A splash screen is the first screen you see when you launch a mobile application. Basically, they were invented to conceal the loading process that software performs before getting fully ready, like with computer games intros.

A perfect splash screen design attracts the user's interest with impressive illustrations, intriguing headlines, and additional components of an app UI just as the application silently gets ready behind this scene. Other popular functions of splash screens are all about marketing: to say hello and establish the atmosphere for the in-app UX while promoting a brand.

**Onboarding Screen**

The onboarding screens are a collection of screens with a purpose to demonstrate a mobile app's main features and benefits and lead users through its interface.

**Home Screen**

The home screen is the main component of a mobile application presenting its menu and key features. It's imperative for designers to make an effort to present users with understandable and functional main screen design.

The composition of home screens is highly dependable on the app's purpose and may vary a lot because a home screen should present the most frequently used features. However, there are some common features. Since the home screen contains the major mobile app's options it usually presents an app's key navigation elements like a search field.

**Log-in and profile screens**

The majority of modern mobile applications need registration. Profiles make interaction within the mobile application more personalized and allow operating with the data effectively.

## Application Specific Screens

- Stats Screen
  - Various applications contain stats on user activities. The more data it provides, the harder it is to create a mobile design of a stats screen. Designers need to make sure it is possible to see all the key information still the screen has to be clear and usable. Graph curves, scales, and original icons can make the stats screen look smooth and clean on a mobile app. Moreover, stats screens require distinct typography so that users could easily read the data.
- Catalogue Screen
  - Visual presentation plays a particularly important role in e-commerce apps. The best of them showcase the goods in a way to turn people's heads and boost conversion rates, so the high-res photos are a must. Catalog screens act as shop windows.
- Check out Screen
  - The checkout process is the final step users take before they buy the product. Designers' task is to make people comfortable while people take this step. First and one of the essential parts of the checkout screen is a form where a buyer fills in specific personal data such as a name and number of the credit card. The type of required information depends on the resource where a user makes a purchase. In addition, it's important for people to know their personal data is secure, so designers have to reassure users via visual elements that their information is safe.
- Calendar
  - Event apps, to-do list apps, and many others provide users with the personal calendar. Depending on the type of the application, the calendar accomplishes certain functions such as reminders or schedule. The visual style should fit the mood and objectives of the mobile app.

## Managing information in mobile

- What users want in context of mobile app?
  - Design for use contexts such as these:
    - “I need to know this fact right now, quickly.”
    - “I have a few minutes to spare, so entertain me.”
- Approaching essence without layer
  - In fact, make sure that even on the home page (for a website) or the first working page of an app, relevant content appears high on the screen. That means getting rid of the “layer cake effect” of logos, ads, tabs, and headers that stack up on the screen.

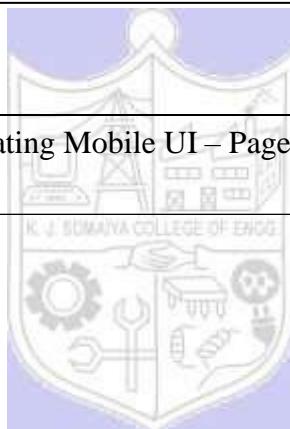
- Taking advantage of mobile features
  - Mobile devices offer wonderful features that one don't get on the desktop. Location, camera, voice integration, gestural input, haptic feedback such as bumps and vibrations, and other features may be available.
- Linearizing the content
  - This goes back to the width problem. Many devices simply don't give enough pixels in the width dimension to do any interesting side-by-side layouts.
- Optimize the most common interaction sequences
  - Eliminate typing, or reduce it to as few characters as possible.
  - Use as few page loads as possible
  - Reduce scrolling and sideways dragging, except where it eliminates page loads and typing.
  - Reduce the number of taps it takes a user to reach the desired information or accomplish a task.

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#### Procedure:

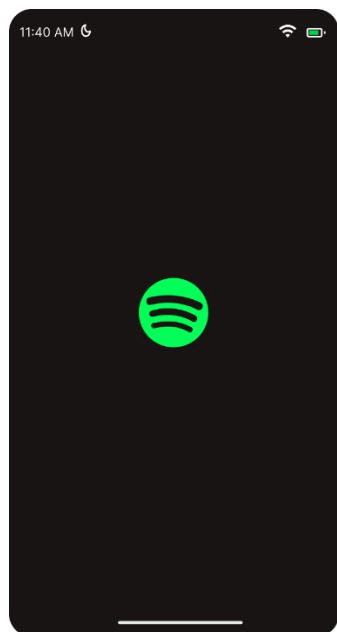
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- Create wireframes incorporating Mobile UI – Page Composition for chosen topic
- 

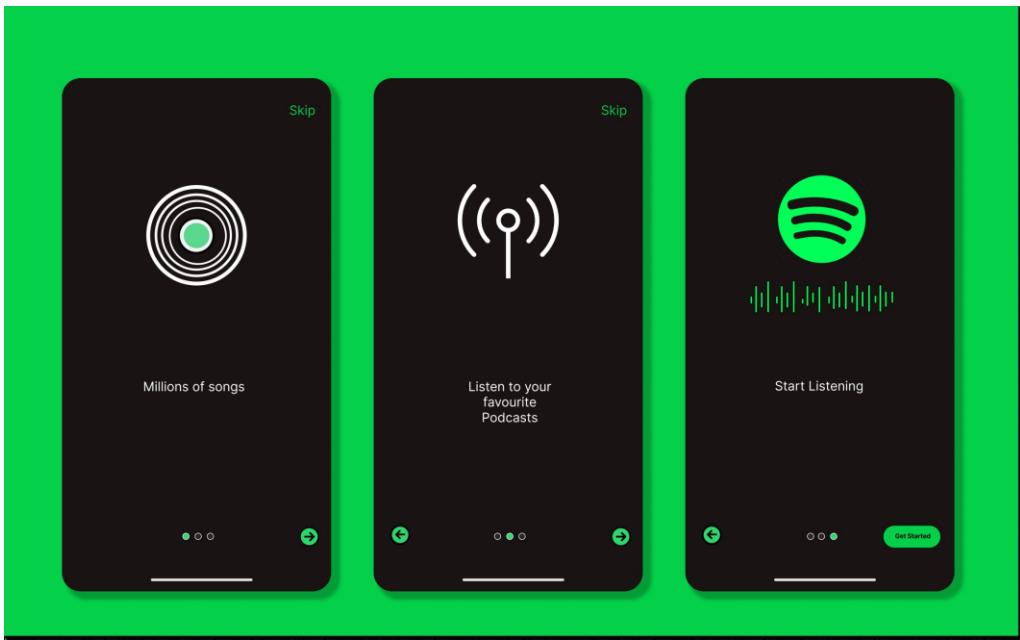


#### Result:

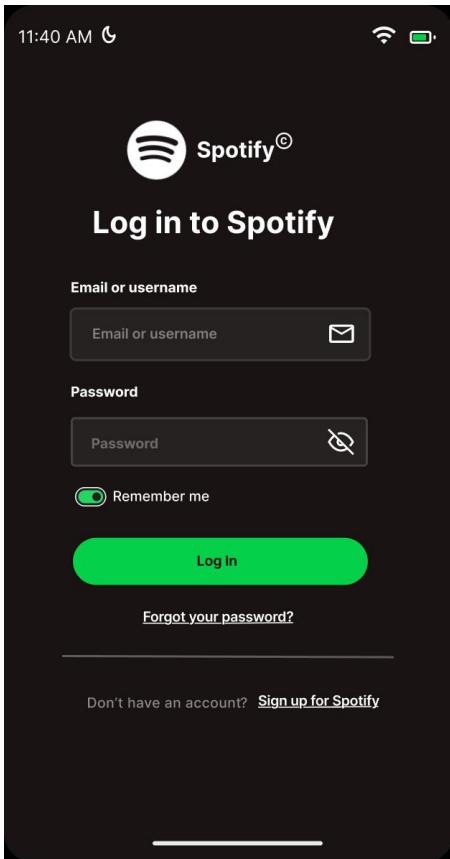
##### Spotify Splash Screen



##### Spotify Onboarding Screen

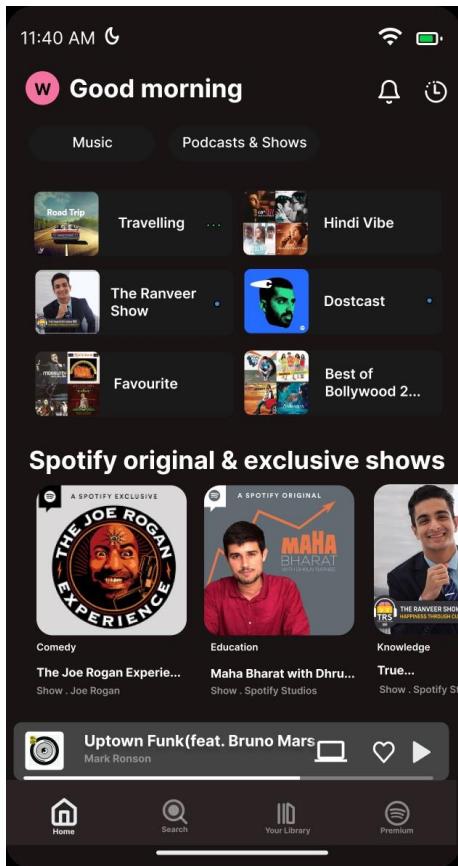


### Spotify Login Screen

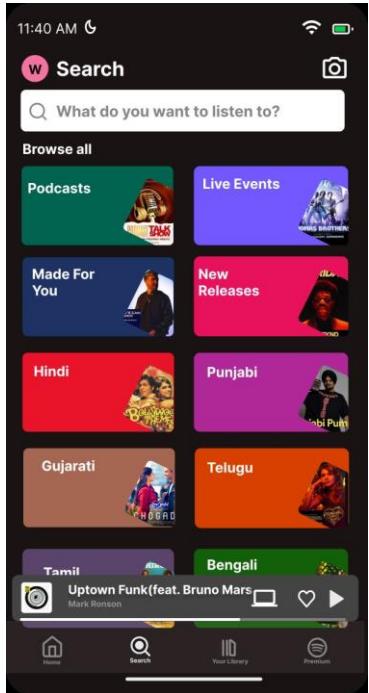


### Spotify Home Screen

(A Constituent College of Somaiya Vidyavihar University)



## Spotify Search Screen



**Outcomes:**

**CO3 :** Design mobile user interface with UI design patterns.

**Conclusion: (Conclusion to be based on the objectives and outcomes achieved)**

Thus successfully designed mobile UI for spotify having grid view and fixed view for pattern composition.

**Grade: AA / AB / BB / BC / CC / CD/DD**

**Signature of faculty in-charge with date**

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**References:**

1. Wilbert O. Galitz, "The Essential Guide to User Interface Design - An Introduction to GUI Design Principles and Techniques", Wiley Computer Publishing, Second Edition, 2002
2. Steven Hoober, Eric Berkman, "Designing Mobile Interfaces: Patterns for Interaction Design", O'rielly Media, First Edition, 2012
3. Tidwell, J. (2010). Designing interfaces: Patterns for effective interaction design. " O'Reilly Media, Inc.".

