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Class: TyBSc Roll No. 20291 Year: 2022-2023 contained in this journal has been periodically examined and signed and that the course of experimental work in Computer Science prescribed by the Goa University has been satisfactorily carried out.

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Teacher in charge  
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Head of Computer Science

Date: \_\_\_\_\_

# HUMAN COMPUTER INTERACTION

# JOURNAL

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Roll No: 20291  
Class: TyBsc  
Subject: Computer Science  
Paper: Human Computer Interaction

Paper Code: CSD101

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**Title: Paper Prototyping**

**Aim:** Design a paper prototype for E-commerce Website (epsilon).

**Theory:**

In human-computer interaction, paper prototyping is a widely used method in the user-centered design process, a process that helps developers to create software that meets the user's expectations and needs—in this case, especially for designing and testing user interfaces. It is throwaway prototyping and involves creating rough, even hand-sketched, drawings of an interface to use as prototypes, or models, of a design. While paper prototyping seems simple, this method of usability testing can provide a great deal of useful feedback which will result in the design of better products.

**1) HOME PAGE:**

The screenshot shows the homepage of the Epsilon website. At the top, there is a navigation bar with the brand name "epsilon" and a search bar. Below the navigation bar are four main categories: "Shop By Color", "Shop By Occasion", "Shop By Fabric", and "Shop By Type". Under each category, there is a small image and a brief description of a product.

- Shop By Color:** Shows a color palette and a link to "Shop By Color".
- Shop By Occasion:** Shows three women in traditional Indian attire and a link to "Shop By Occasion".
- Shop By Fabric:** Shows a stack of colorful fabrics and a link to "Shop By Fabric".
- Shop By Type:** Shows a row of green and pink lehengas and a link to "Shop By Type".

Below these categories, there are three product cards:

- Alluring Beige Color Organza Base Printed Lehenga Choli:** Priced at Rs. 6,200.00. Description: A beige lehenga choli with an exquisitely purple shade embroidery and soft net dupatta is exhibited here. The dress is adorned with one-of-a-kind digital motifs, Resham, and sequins. This outfit is perfect for songeets, weddings, and other special occasions.
- Green Embroidered Organza Printed Lehenga Choli:** Priced at Rs. 5,334. Description: Allure the audience as you wear this forest green color organza lehenga. Decorated in all over floral prints with zari and sequins embroidery enriching the distinctive heavy border. Also comes along with a matching green color organza choli and dupatta both embellished in similar embroidered work. Do Note: All Accessories shown are for styling purpose only. Slight color variation may occur due to
- Qirat Lehenga - Ivory:** Priced at Rs. 330,000. Description: The Qirat Lehenga Set is inspired by the timeless beauty of Sindh architecture. Our custom-designed floral motifs are brought to life in ari embroidery by master artisans. It features a geometric border and scalloped hemline. Customisation Available For: Choli sleeves and Choli length Lehenga

## 2) LOGIN PAGE:

The screenshot shows the login page of the Epsilon website. The top navigation bar includes the brand name "epsilon", a search bar, and a "Login" button. The main section is titled "Login" and contains two input fields: "Email" and "Password". Below the "Email" field is a placeholder "Enter your email address". Below the "Password" field is a placeholder "Enter your password". A large blue "Login" button is centered below the input fields. To the right of the "Login" button is a link "Forgot Your Password?". At the bottom left, there is a link "New to Epsilon? Create an account".

## 3) SIGN IN PAGE / CREATE AN ACCOUNT PAGE:

**epsilon** search products of your choice 

More  Cart

### Create an Account

**Email**

**Password**

**Confirm Password**

**Mobile Number**

**Address**

[Already an User? Login](#) Submit

## 4) SHOPPING INTERFACE:

**epsilon** search products of your choice 

[LOGIN](#) More  Cart

**Filters**

**CATEGORIES**

- BRAND 
- PRICE  5000  
- DISCOUNT 
- CUSTOMER RATINGS 
- OFFERS 
- AVAILABILITY 



Name  
Price



Name  
Price



Name  
Price



Name  
Price



Name  
Price



Name  
Price



Name  
Price



Name  
Price

## 5) PRODUCT SHOPPING INTERFACE:

The screenshot shows a product page for a traditional Indian lehenga. At the top, there's a search bar with the placeholder "search products of your choice" and a magnifying glass icon. To the right of the search bar are "LOGIN" and "More" buttons, along with a shopping cart icon. On the left, there's a vertical column of five smaller images showing different angles of the same lehenga. The main image on the right shows a woman wearing a vibrant pink and yellow lehenga with intricate embroidery and a matching blouse. Below the main image, there are sections for "Name Of Lehenga", "Price Tag", and "Ratings & Reviews". A "SIZE" section with buttons for S, M, L, XL, and XLL follows. At the bottom of the main image area are "BUY NOW" and "ADD TO CART" buttons. To the right of the main image, there's a "share" button with a circular arrow icon. Below the main image, there's a "Delivery to" section with a text input field for "Enter delivery pincode". A "Product Description" section contains text about the latest lehenga choli online shopping.

## 6) CHECKOUT / CART PAGE:

The screenshot shows a "CART SECTION" page. At the top, there's a search bar with the placeholder "search products of your choice" and a magnifying glass icon. To the right of the search bar are "LOGIN" and "More" buttons, along with a shopping cart icon. The main content area starts with a "CART SECTION" heading and a sub-section for a "Lehenga Name". This section includes a small image of the lehenga, a "Price Tag" section, and a "Delivery date/info" section. To the right of this is a "PRICE DETAILS" box containing the following information:

PRICE (1 item)	Rs. 5000
Discount	- Rs. 300
Delivery Charges	FREE
TOTAL AMOUNT	Rs. 4700

Below the "Lehenga Name" section are "SAVE FOR LATER" and "REMOVE" buttons. A "Quantity" dropdown set to "1" is also present. At the bottom of the cart section is a large "PLACE ORDER" button. To the right of the cart section, there's a message: "Safe And Secure Payments. 100% Authentic Products." At the very bottom, there's a "Need help? Visit help center or contact us" message and a "HELP" button.

**Conclusion:** The Paper Prototype is designed successfully.

**Title:** Developing Persona for above application

**Aim:** Create personas for E-commerce Website (epsilon).

**Theory:**

The persona method has developed from being a method for IT system development to being used in many other contexts, including development of products, marketing, planning of communication, and service design. A persona is not the same as an archetype or a person. The special aspect of a persona description is that you do not look at the entire person, but use the area of focus or domain you are working within as a lens to highlight the relevant attitudes and the specific context associated with the area of work.

Miss Chloe Fernandes, Student, 20 Years	<b>About:</b>  Born in Panjim, Goa, in the year 2002. Chloe has an interest in fashion designing and modeling. From her childhood she has always been updated with the trending and featuring clothes. Her sole dream is to be a famous model and a fashion designer as well. She is currently a student at Belleza institute of modeling, photography, Acting in Pune,Maharashtra. She also likes to take part in modeling contests
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	<p>held by different organizations.</p>
<p><b>Basic Information:</b></p> <p>When she was at the age of 12, she would help her mother in doing her tailoring work and also would stitched few designs of her own. She has even won many prizes at her school level modeling contests. She has created an Instagram account/page posting about fashion and modeling to share her talents on the social media.</p>	<p><b>Goals and Objectives:</b></p> <p>To achieve her dream and become a true inspiration to younger generation soon. She has been to fashion tours and has even attend events based on modeling. She also takes advices from her seniors to grab a greater knowledge about the things.</p>
<p><b>Strengths:</b></p> <p>Chloe is very good painter and a singer. She is also a good actor. She Has knowledge about</p>	<p><b>Weakness:</b></p> <p>She is not a good cook, thus has problem staying alone at hostels and which is why she eats food</p>

electronic gadgets such as their latest features.	ordered from outside. She often falls sick because of her low appetite.
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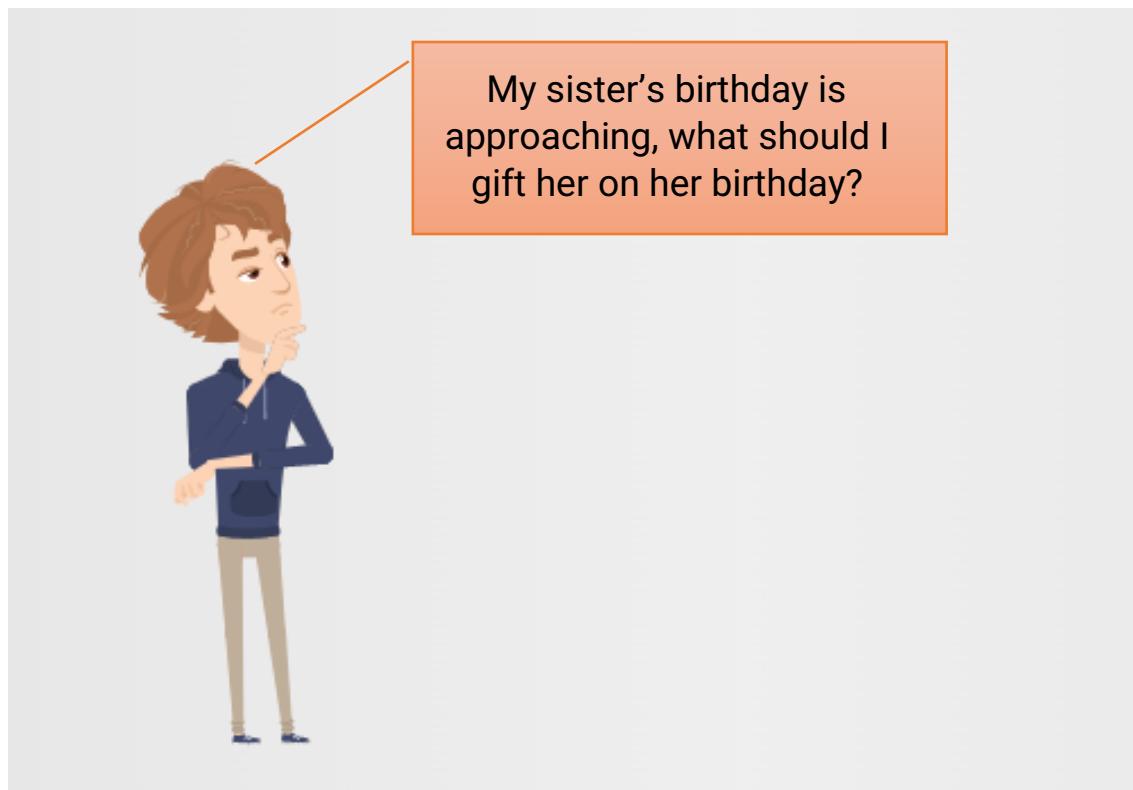
**Conclusion:** Personas for the given application is created.

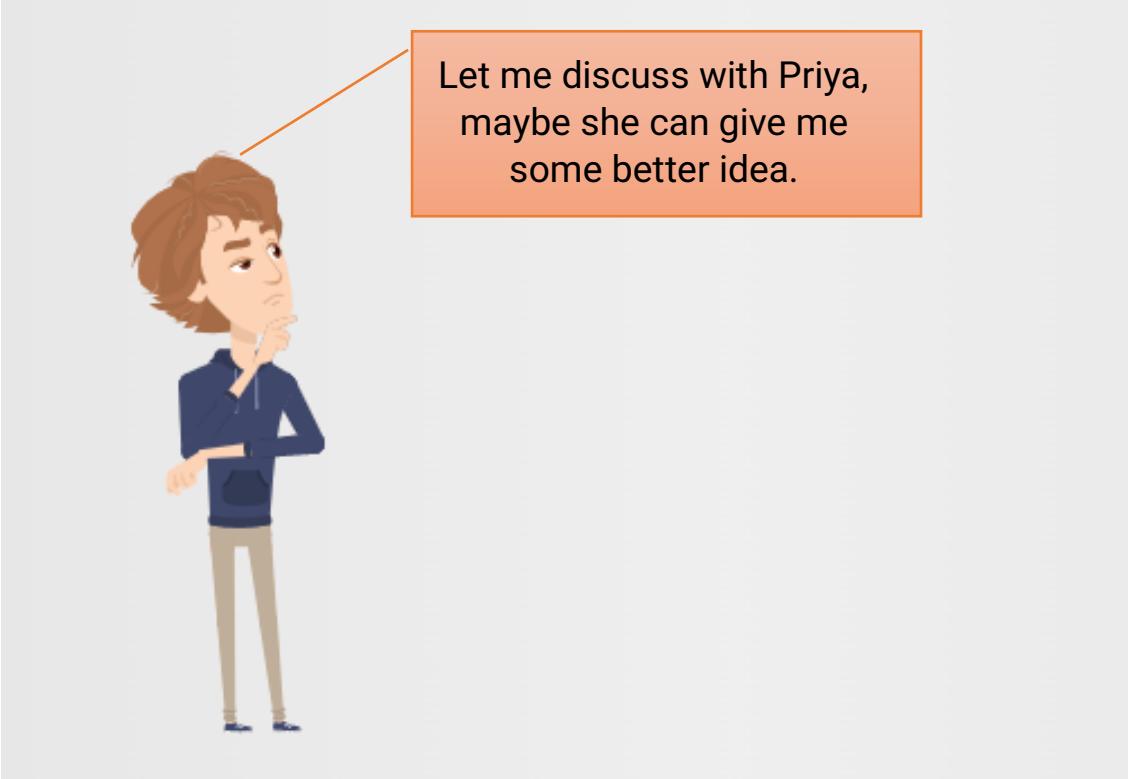
**Title: Story boarding**

**Aim:** Design a story boarding to explain the concept of your application.

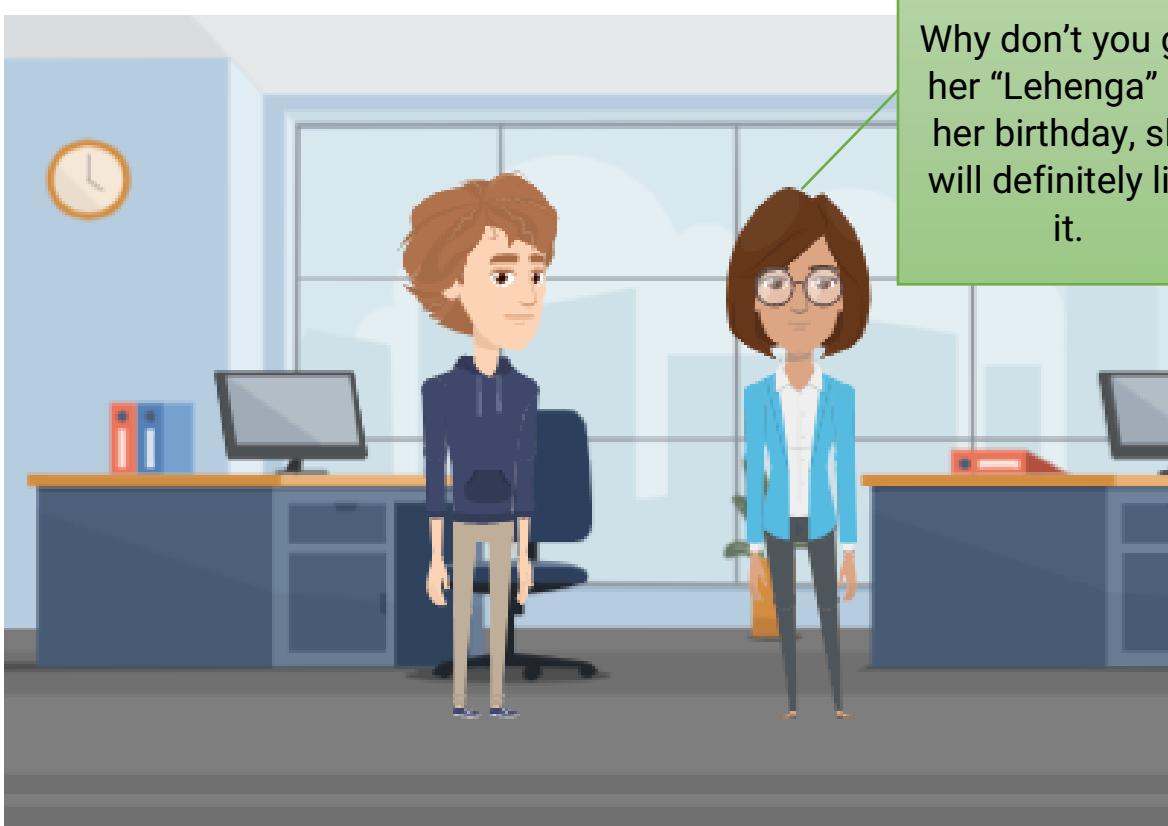
**Theory:**

A storyboard is a graphic organizer in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing a motion picture, animation, motion graphic or interactive media sequence. Storyboarding is used as part of identifying the specifications for particular software. During the specification phase, screens that the software will display are drawn, either on paper or using other specialized software, to illustrate the important steps of the user experience. The storyboard is then modified by the engineers and the client while they decide on their specific needs.

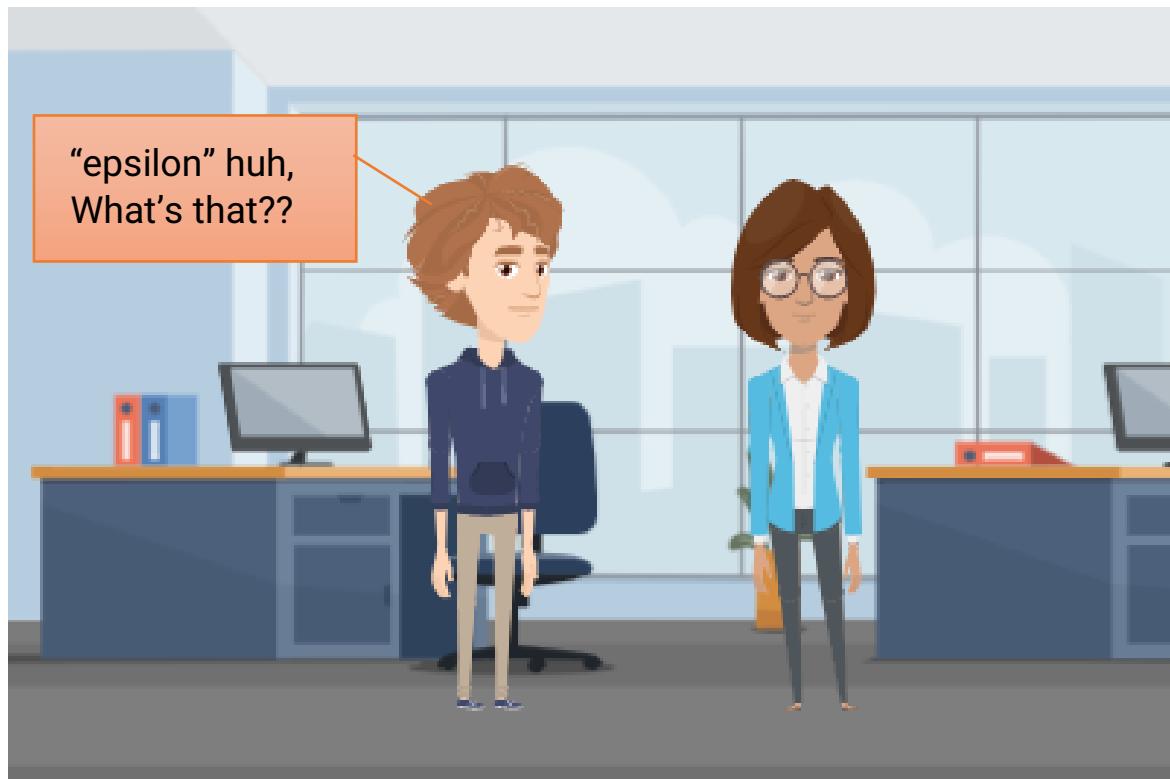
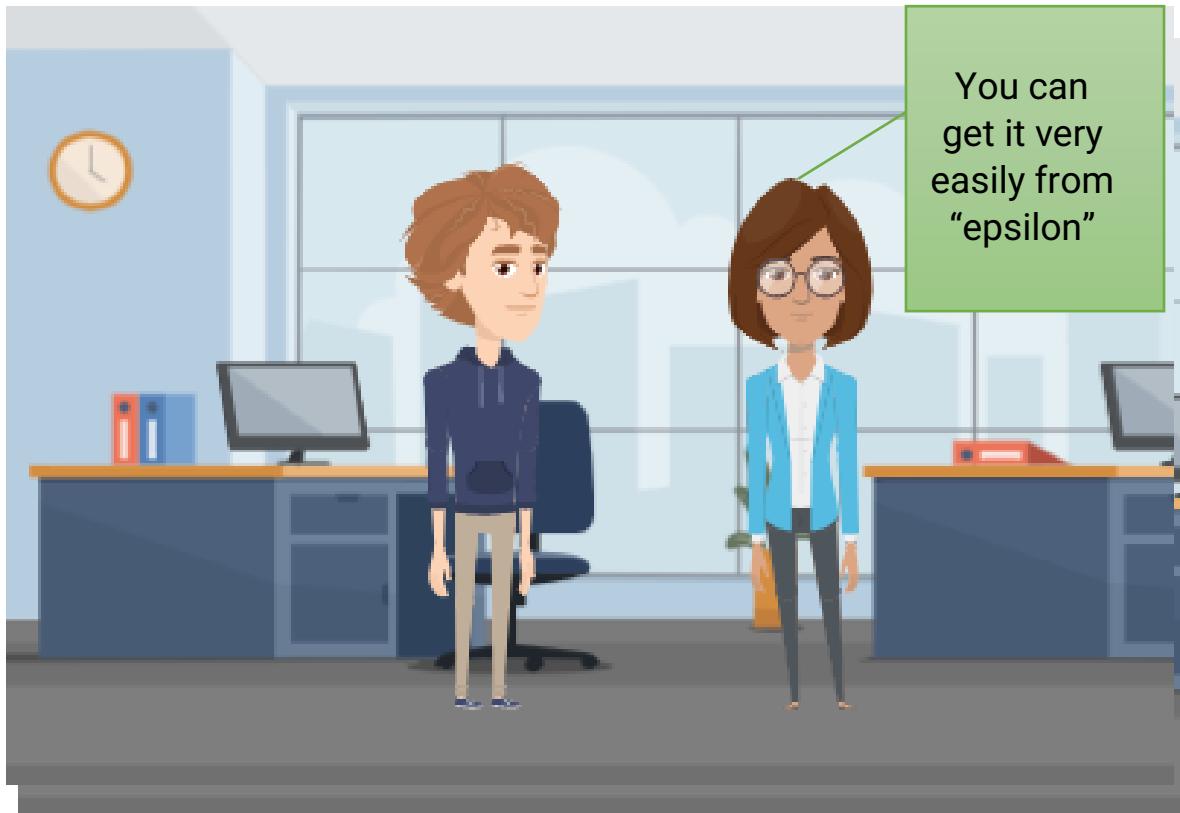




Let me discuss with Priya,  
maybe she can give me  
some better idea.

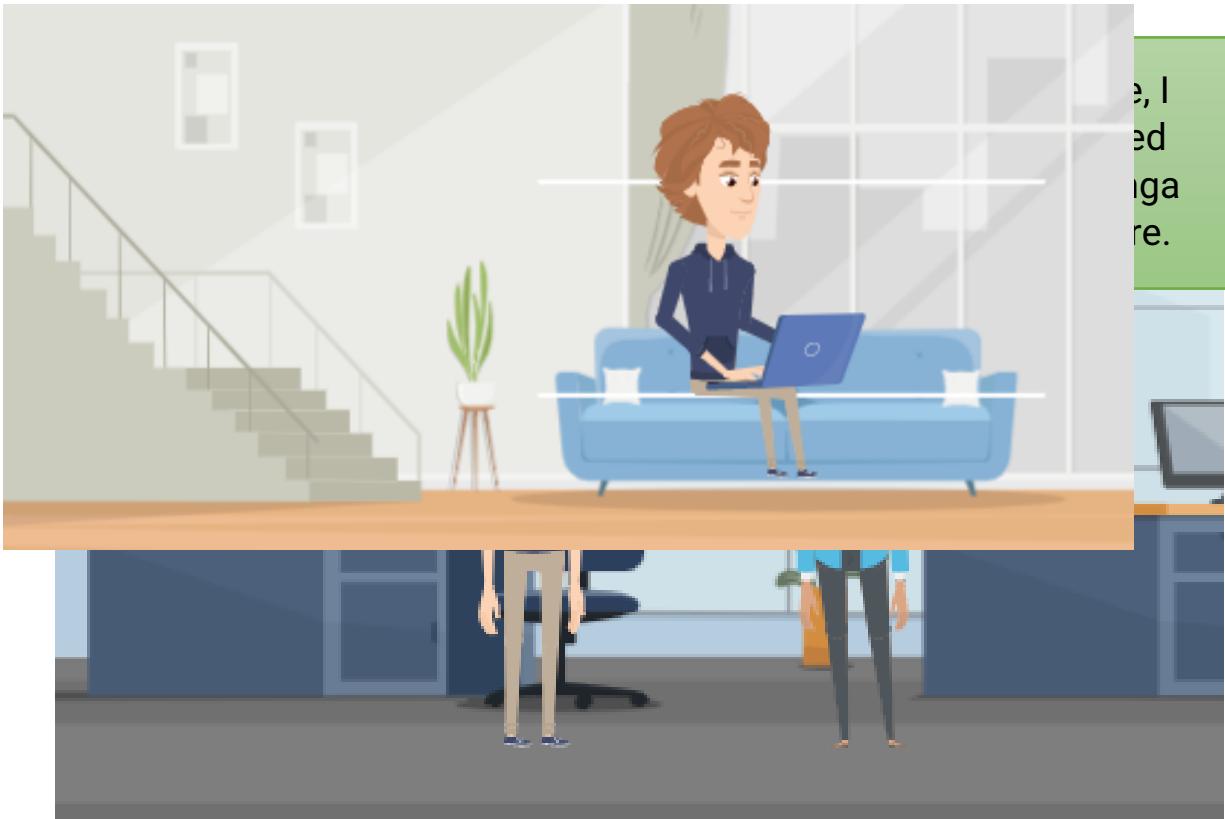


Why don't you gift  
her "Lehenga" on  
her birthday, she  
will definitely like  
it.

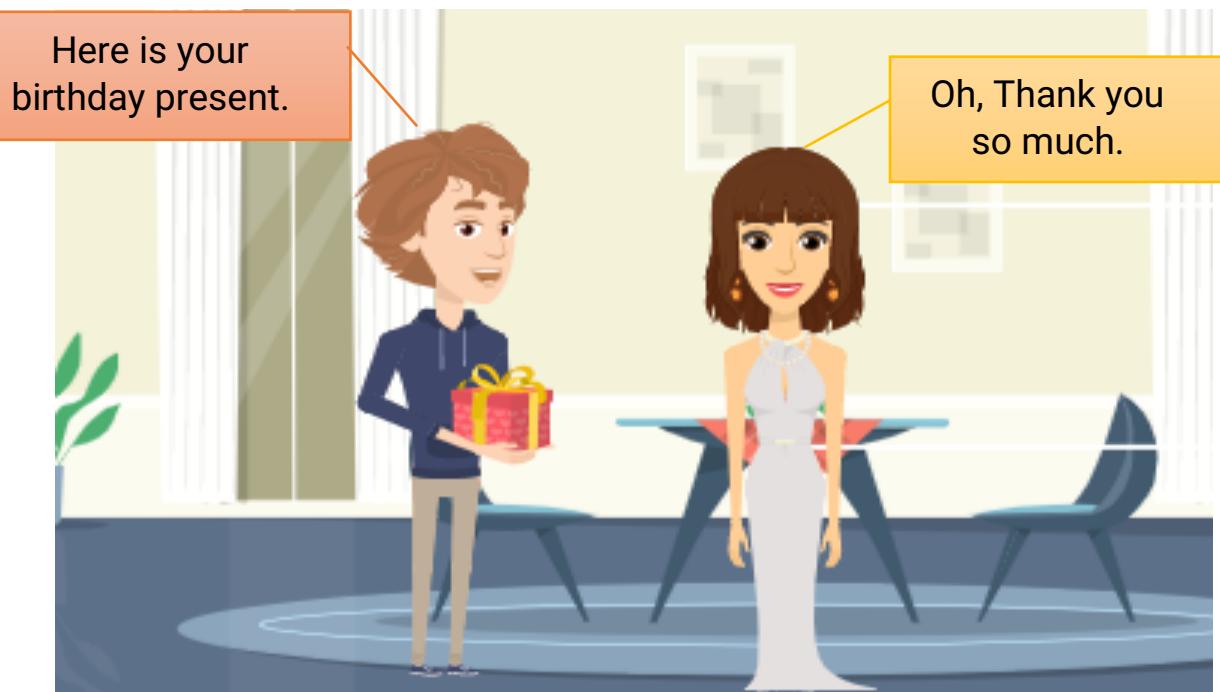




It's a new ecommerce website. There you will find beautiful design and different variations of Lehenga's.



Karan visits the website, he searches through filters, selects a very beautiful Lehenga for his sister and orders it.



Karan successfully gifts his sister on her birthday.

**Conclusion:** The storyboard is designed successfully.

**Title: Contextual Inquiry**

**Aim:** Conducting Contextual Inquiry for gaining further knowledge /requirement of application to be designed

**Theory:**

- Similar to an interview, but done in the “context” where the participant is likely to interact with the technology.
- Greater partnership with the participant, working together to figure out how a workflow actually happens.

**Pros**

- Rich data similar to a normal unstructured or semi-structured interview
- Get to see the space where users normally interact with your technology.
- Opportunity to identify “obvious” things that users don’t mention

**Cons**

- More involved, travel to location, 1-3 hour inquiry
- Less structured data is harder to analyse
- May require special permission to visit and record space

**QUESTIONS:**

- 1) Share your experience with our website?
  - It was a wonderful experience using this website. Easy to access

the various choices provided. Lehenga's were well grouped in accordance to festivals and in keeping with ongoing fashion.

2) Reviews on the delivery services?

- Delivery service exceptionally remarkable. Delivery provided within a week's time and customer friendly.

3) Pointers for improvement, if any

- In my opinion, none improvement is needed. Perfect communication maintained between customer and supplier.

4) Were you satisfied with the variability in choices provided?

- Yes. Very pleased to have such a wide choice to choose from special for each occasion and festival.

Conclusion: Contextual Inquiry was conducted successfully.

### Title: Heuristic Evaluation

**Aim:** Conduct Heuristic evaluation for website and prepare a report

#### **Theory:**

A Heuristic Evaluation is a usability inspection method for computer software that helps to identify usability problems in the user interface (UI) design. It specifically involves evaluators examining the interface and judging its compliance with recognized usability principles (the “heuristics”). These evaluation methods are now widely taught and practiced in the new media sector, where UIs are often designed in a short space of time on a budget that may restrict the amount of money available to provide for other types of interface testing. The main goal of heuristic evaluation is to identify any problem associated with the design of user interfaces. Heuristic evaluations are one of the most informal methods of usability inspection in

Metrics used

**1 = I don't agree that this is a usability problem at all**

**2 = Cosmetic problem only: need not be fixed unless extra time is available on project**

**3 = Minor usability problem: fixing this should be given low priority**

**4 = Major usability problem: important to fix, so should be given high priority**

**5 = Usability catastrophe: imperative to fix this before product can be released**

the field of human-computer interaction.

## 1. Visibility of System Status:

The screenshot shows the boAt website homepage. At the top, there's a banner with the text "Up the vibe of your Halloween party with your favourites at steal deals. Shop Now!" and a search bar. On the right, a red header bar displays "Your Cart(1 item)" with a close button. Below the banner, there's a large promotional image for "boAt Airdopes 383 Sunburn Edition" headphones, showing them in black and red. To the left of the image, the text "Take It or Take It" is displayed, followed by "Prices so good you can't miss them. Get your boAt shipped." and a "SHOP NOW" button. On the right side of the image, there's a sidebar with a small profile picture, the product name, price (₹1,499.00), quantity (1), and a "Remove" button. Below this, there are links for "Get GST Invoice / Pay Via Gift Cards", "Shipping: Total: ₹1,499.00 FREE", and a "Continue Shopping >" link. At the bottom right, there's a prominent red "PLACE ORDER" button.

The sidebar on the right notifies the user the number of items the user has added to the cart. Also, when the user removes an item from the cart, at the right he is not notified if he has removed the item and the item is directly removed.

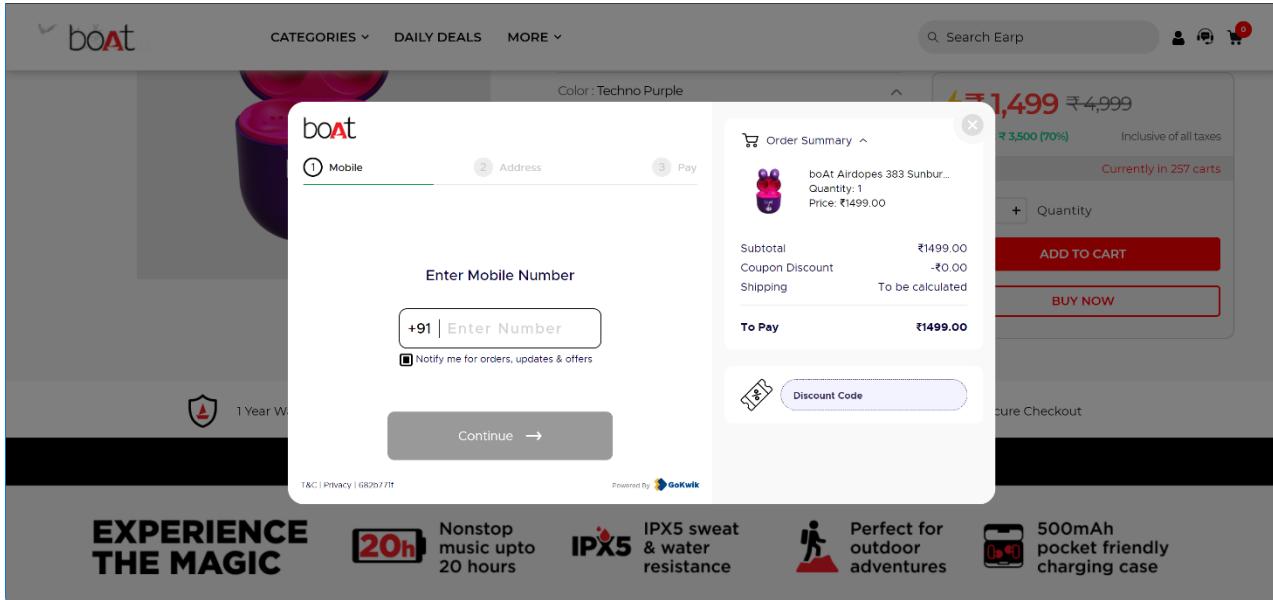
## 2. Match between system & real world

The screenshot shows the boAt website homepage. At the top, there's a banner with the text "Up the vibe of your Halloween party with your favourites at steal deals. Shop Now!" and a search bar. On the right, a red header bar displays a user icon and a shopping cart icon with a notification dot. Below the banner, there's a large promotional image for "boAt Stone-d" speakers, showing a red and black speaker with a geometric pattern. To the left of the image, the text "Get Stone-d on Music" and "Powerful speakers for every vibe." is displayed, followed by "Starting at ₹999" and a "SHOP NOW" button. The overall design is clean and modern, matching the real-world product's aesthetic.

It has icons that allow the user to identify the use of the button easily. But the buttons are repeated in the navbar that can cause a confusion to the

user or it can be counted as an extra button without any use of it to the user.

### 3. User control and freedom



While ordering an item it has an option of returning back to the shopping page if the user is not happy with the item he is ordering. The user is also provided with an option of incrementing & decrementing the number of items user wants to order. A user can also get into conversation with the captain of the site if he has queries.

## 4. Consistency and standards

The screenshot shows a grid of five product cards on the boat website under the 'Daily Deals' section. Each card features a yellow 'SUPER SAVER' badge with a lightning bolt icon. The products are:

- Airdopes 383 Sunburn Edition**: Price: ₹ 1,499 → ₹ 4,999. You Save: ₹ 3500 (70%). Buttons: ADD TO CART (yellow), 81% sold.
- BassHeads 152 Sunburn Edition**: Price: ₹ 399 → ₹ 1,299. You Save: ₹ 900 (69%). Buttons: ADD TO CART (yellow), 85% sold.
- BassHeads 180**: Price: ₹ 549 → ₹ 999. You Save: ₹ 450 (45%). Buttons: ADD TO CART (yellow), 81% sold.
- Rockerz 518**: Price: ₹ 1,299 → ₹ 3,999. You Save: ₹ 2691 (67%). Buttons: ADD TO CART (yellow), 83% sold.
- Aavante Bar 1160**: Price: ₹ 4,499 → ₹ 9,999. You Save: ₹ 5491 (55%). Buttons: ADD TO CART (yellow), 89% sold.

At the top right of the grid, there is a 'View All >' link and a small upward arrow icon.

Buttons with different importance are categorized. Some buttons are shown with a background colour as transparent, while some are used for the adding to cart & buttons with super saver of a special offer are shown with yellow background.

## 5. Error prevention

The screenshot shows a registration form on the Neckba website. The title 'Register' is centered at the top. Below it, a placeholder text 'Please fill in the fields below:' is displayed. There are four input fields for 'First name', 'Last name', 'E-mail', and 'Password'. A large red button labeled 'CREATE ACCOUNT' is positioned below the input fields. At the bottom left, a link 'Already have an account? [Login](#)' is visible. At the bottom right, there is a 'Privacy - Terms' link next to a small circular logo.

Forms in this website are containing placeholders that tells the user the use of the field the user is entering the credentials. If the user misses any field or enters an invalid credential it throws an error while submitting, it could have been better if it provides an example.

## 6. Recognition rather than recall

The screenshot shows a 'You may also like' section on the boAt website. It displays four product cards: 1. Airdopes 121 v2 (Bestseller) - Price: ₹1,299 ₹2,999 (Save ₹1,700, 57%) with an 'ADD TO CART' button. 2. TRebel Airdopes 141 with 8mm drivers... - Price: ₹1,499 ₹4,499 (Save ₹2,991, 67%) with an 'ADD TO CART' button. 3. Airdopes 121 PRO - Price: ₹1,499 ₹2,999 (Save ₹1,491, 50%) with an 'ADD TO CART' button. 4. Airdopes 161 (Trending) - Price: ₹1,399 ₹2,499 (Save ₹1,091, 44%) with an 'ADD TO CART' button. Each card includes a small image of the earbuds and their case.

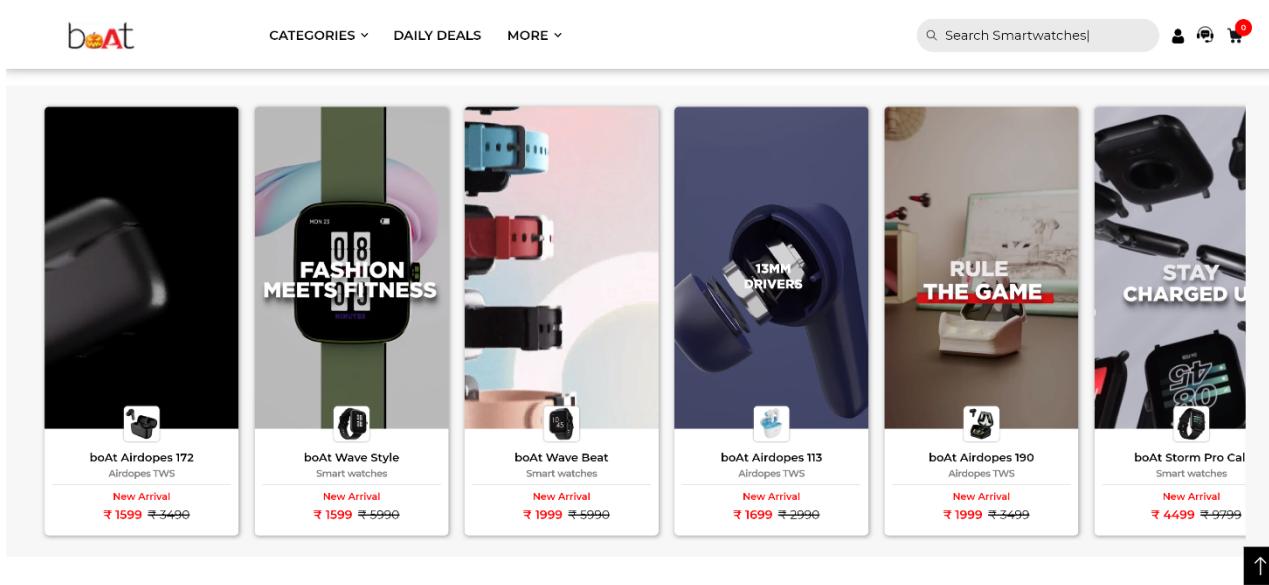
The website stores the users' choices and progress, that shows the user the similar kinds of products.

## 7. Flexibility and efficiency of use

The screenshot shows the checkout process for a boAt Airdopes 383 Sunburn Edition. The main page displays a large image of the earbuds and some smaller images. Overlaid on the page is a modal window for 'Add New Address'. The 'Mobile' field is filled with '+91 - 82628 00188'. The 'Address' field shows 'SOUTH GOA, GOA'. The 'Pay' field is partially visible. To the right of the address form is an 'Order Summary' box. The summary shows: Subtotal ₹1499.00, Coupon Discount -₹0.00, Shipping Free, and To Pay ₹1499.00. Below the summary is a 'Discount Code' input field. At the bottom of the modal are 'Continue →' and 'T&C | Privacy | 6037360' buttons. The background of the main page shows a promotional banner for Halloween deals.

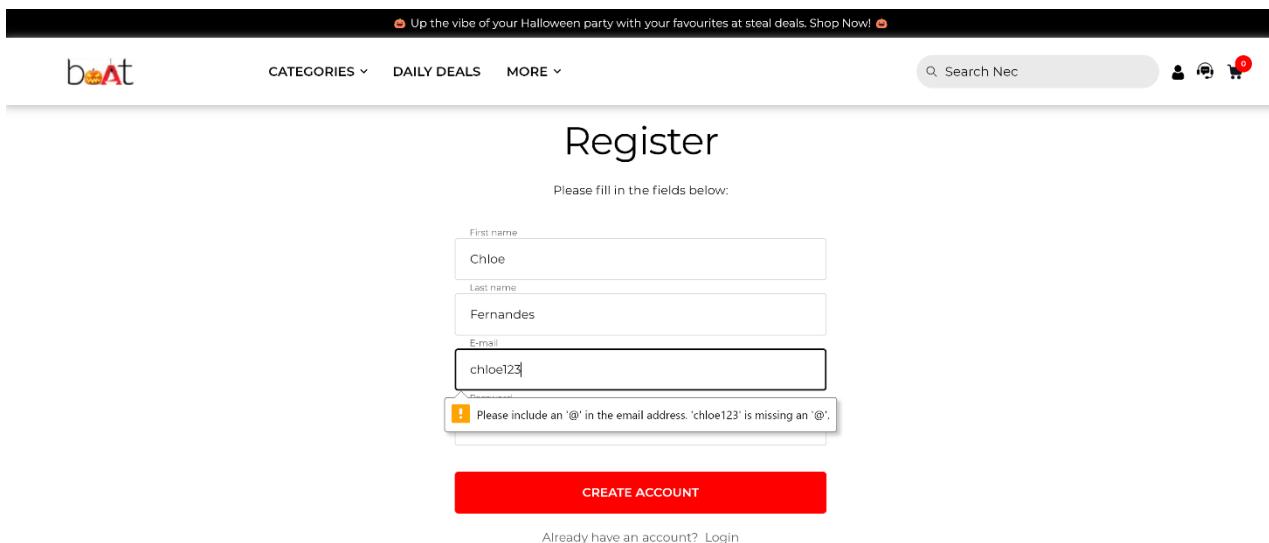
The user must enter his/her information while creating an account on the site. The credentials required helps them to manage the ordering of any product. (Delivery of product)

## 8. Aesthetic and minimalist design



The Boat website has minimal design which is simple but the user gets a good experience on it. It also shows video of products so the user has a good idea of the product.

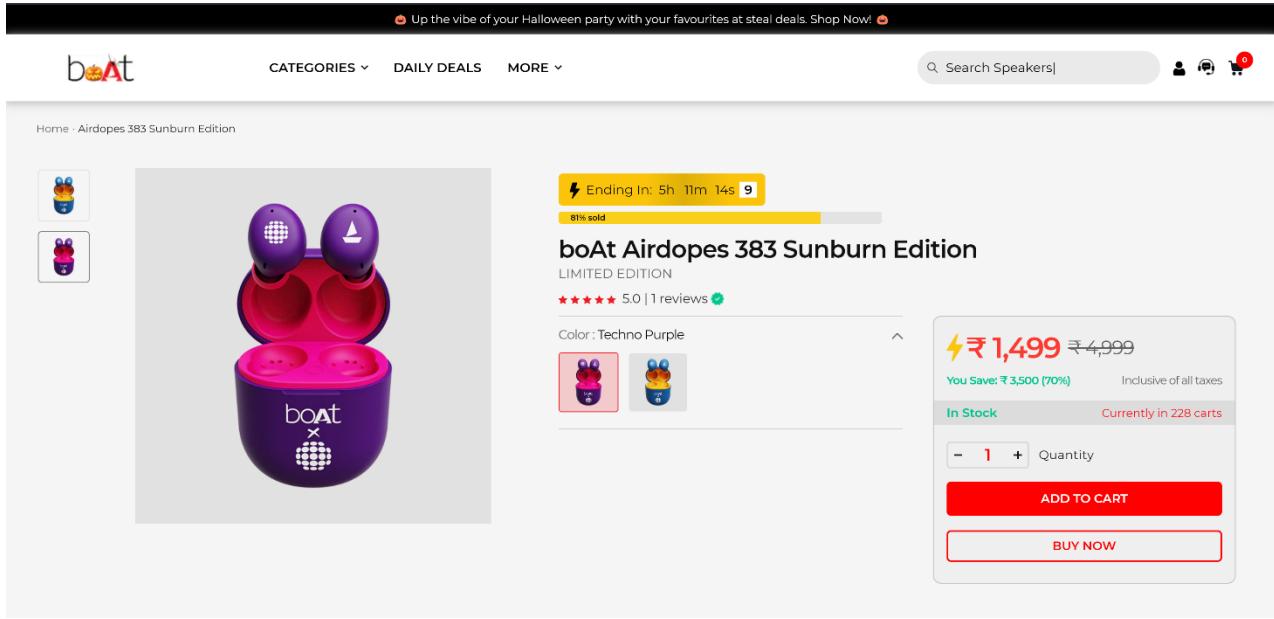
## 9. Help user recognize, diagnose, and recover from errors



The form of the website has restrictions to how the credentials are to be entered, when a user enters any wrong credential while entering the details it throws an error & shows the error.



## 10. Help and documentation



The interface makes the shopping experience very simple. It also provides straight forward options to the user while placing an order such as managing the number of items to order.

### Overall Report:

The overall experience is very good on the website. Any user can easily create an account and order anything on it. But some places are there where it is a need for improvement such as the number of buttons used and their functionalities.

**Conclusion:** Heuristic evaluation for website and report was done successfully.

Title: Design Principles

Picture 1: PEN



**VISIBILITY:** Exists

**AFFORDANCE:** It's clearly visible that we must press the back of the pen in order to write on paper.

**NATURE MAPING:** It's not mentioned whether it is a ball pen or gel pen.

**CONSTRAINTS:** Nice i.e., overall constraints are nice

**CONCEPTUAL MODEL:** According to me it is meant for professional use only and not for casual writing.

**FEEDBACK:** This is the best pen for reducing hand stress. Their grips are easier to hold, and they are available in ballpoint, rollerball, and gel version.

## Picture 2: KEYBOARD



**VISIBILITY:** Exists

**AFFORDANCE:** It's clearly visible that we must press the keys to type digitally.

**NATURE MAPING:** Each key has backlit for night visibility or in bad light. It has a compact design which occupies less space on the desk. Also, each key has different indication on it as per their use.

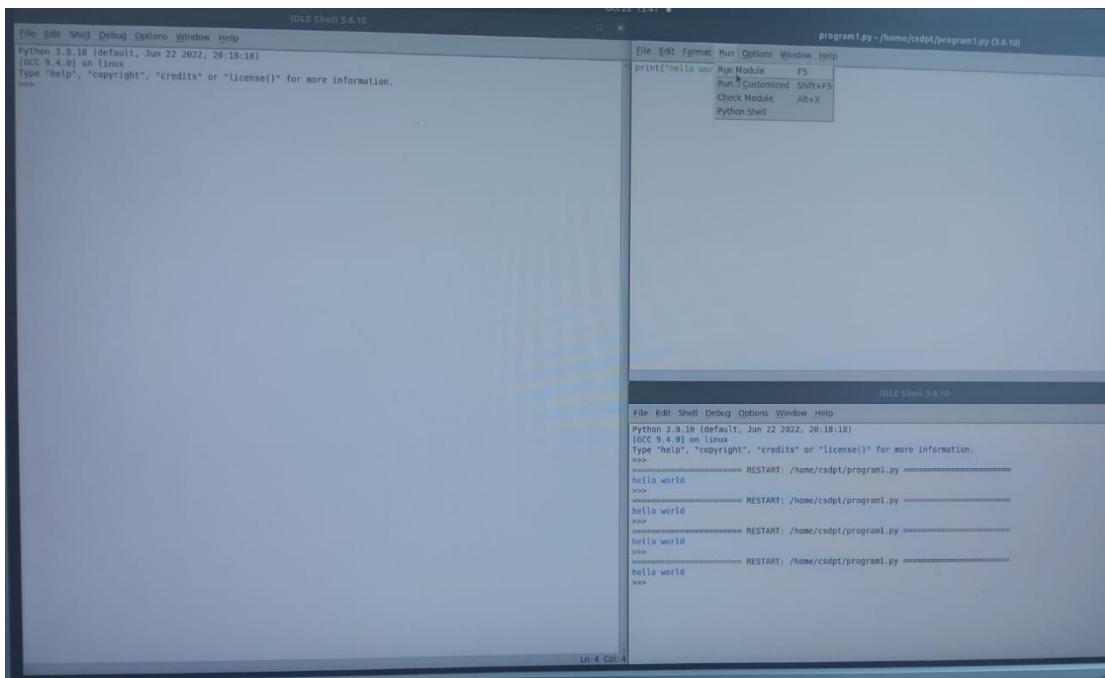
**CONSTRAINTS:** Overall constraints are very good.

**CONCEPTUAL MODEL:** Costly as it is a 'Redragon K552 Kumara' mechanical keyboard, build using premium material.

**FEEDBACK:** It is a wired hence not easily portable, wireless would make a great deal.

## **Title: Goal Action Model**

**Aim:** Using the seven stages of GOAL ACTION MODEL, describe how a programmer is able to use ECLIPSE IDE to write, edit and compile a code. State the design principles that are useful in this Stages.



### **GOAL:**

To write and compile a program using python idle.

### **INTENTION:**

Either to use python idle, or Notepad.

### **SPECIFY:**

Open idle

file → new file

write the program and save

compile

**PHYSICAL EXECUTION:**

Click python idle icon

click → file → new file

write program

save

click → run → run module

**PERCEIVING:**

Compiling of program is being observed.

**INTERPRETING:**

To see for errors, if there are any errors then edit the program and again compile it and if no error then get the output.

**EVALUATION:**

Correct output is achieved.

**Title:** GUI design

**Aim:** Design a GUI - form design, menu design, help, error messages

**Theory:** A graphical user interface (GUI) is an interface, or interactive system, that allows professionals to accomplish tasks on their computers through images and icons, rather than text command systems. Graphical user interfaces appear in computers, tablet devices and mobile devices. These graphical user interfaces can often be optimized to provide a more positive user experience. Graphical user interfaces make computing easier by separating the logical threads of computing from the presentation of those threads to the user, through visual content on the display device. This is commonly done through a window system that is controlled by an operating system's window manager. The WIMP (Windows, Icons, Menus, and Pointers) interface is the most common implementation of graphical user interfaces today.

The screenshot shows a web-based account creation form for an e-commerce platform named 'epsilon'. The top navigation bar includes a logo, a search bar with placeholder text 'search products of your choice', a magnifying glass icon, and links for 'More' and 'Cart'. The main content area features a title 'Create an Account' in red. Below it are five input fields: 'Email' (placeholder: 'Enter your email address'), 'Password' (placeholder: 'Enter your password'), 'Confirm Password' (placeholder: 'Re-enter your password'), 'Mobile Number' (placeholder: 'Enter your mobile number'), and 'Address' (placeholder: 'Enter your home/delivery address'). At the bottom left is a link 'Already an User? Login', and at the bottom right is a blue 'Submit' button.

**Conclusion:** Designed Sign-up Form GUI successfully.

**Title: Web UI design-pages, navigation, controls**

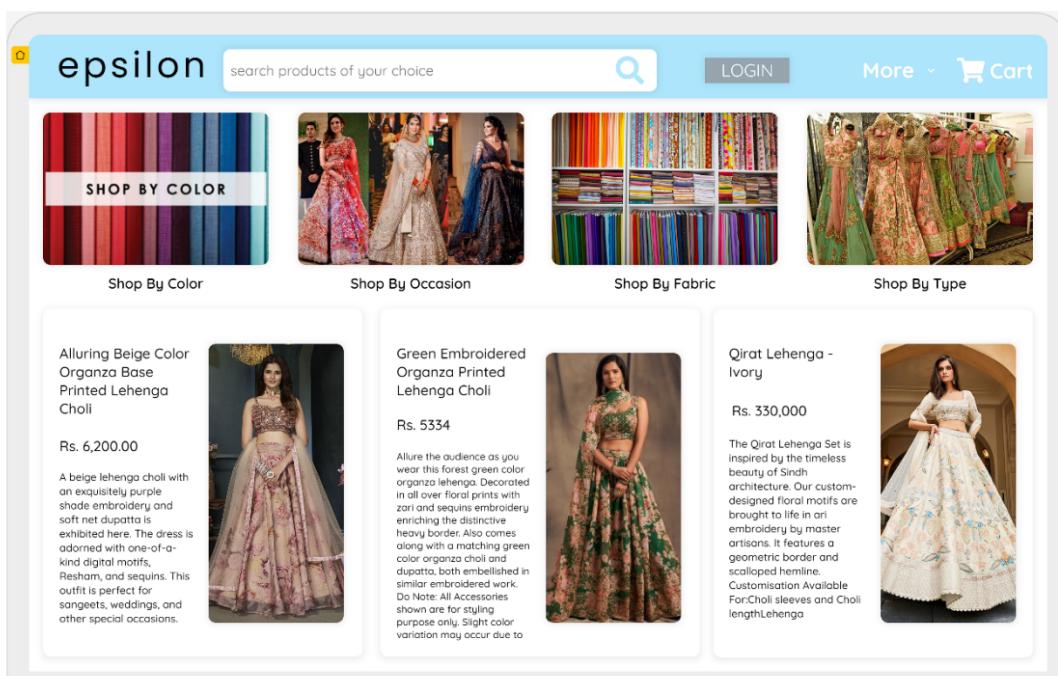
**Aim:** Design a Web UI

**Theory:** User interface (UI) design is the process of making interfaces in software or computerized devices with a focus on looks or styles. Designers aim to create designs user will find easy to use and pleasurable. UI design typically refers to graphical user interfaces but also includes others, such as voice-controlled ones.

Web UI is designing the look of the website, and how user will be able to navigate through it. For development of any website, it's UI play a major role as it can have major impact in how the user interacts with a particular website.

Web UI must have the following features: -

- User friendly
- Ease of access
- Enhanced look quality
- Proper Visible navigation



**Conclusion:** A Web UI was designed successfully.