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HUMAN COMPUTER INTERACTION PROJECT

ONLINE BOOKS SHOPPING APP

SUBMITTED TO:	MA'AM SUMAIRA SHAUKAT	
SUBMITTED BY:	UBAIDA WAHEED	2019_BSE_034
	SANA AKBAR	2019_BSE_026
	TAYYBA SALAMAT	2019_BSE_032

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ONLINE BOOK SHOPPING APP

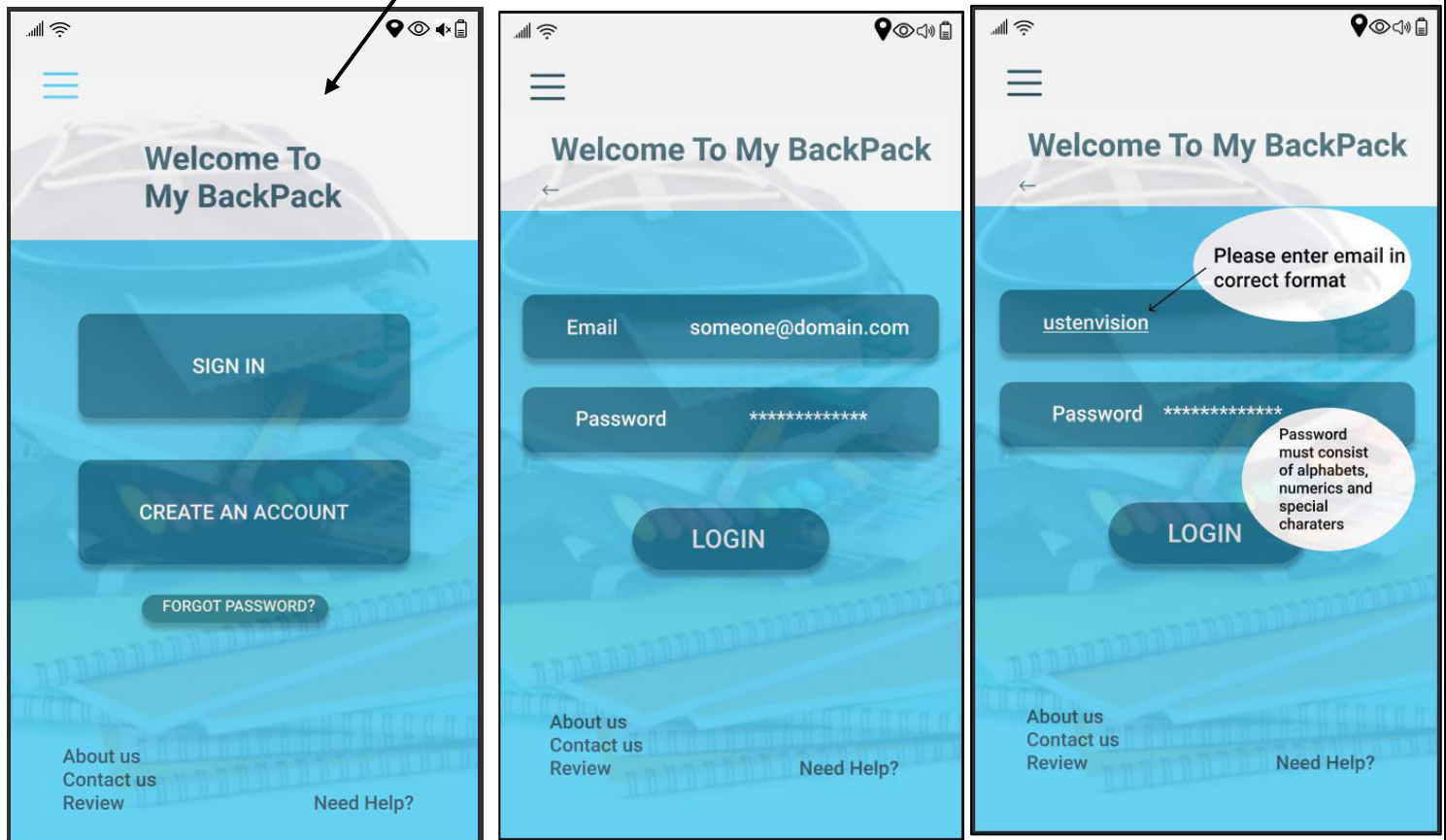
1. Abstract:

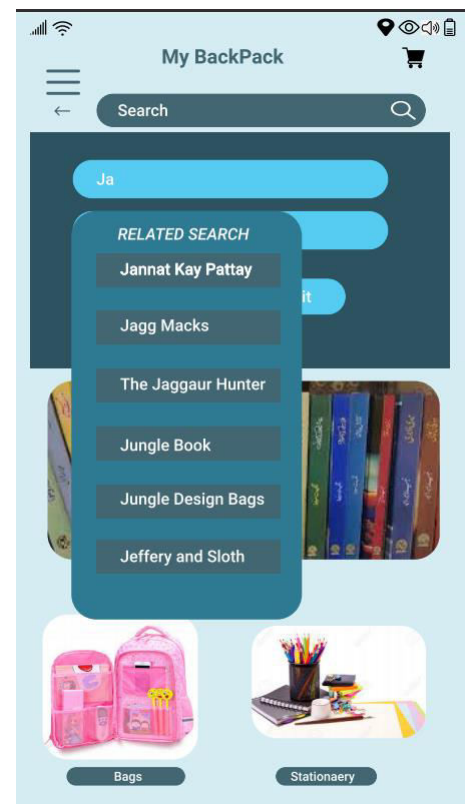
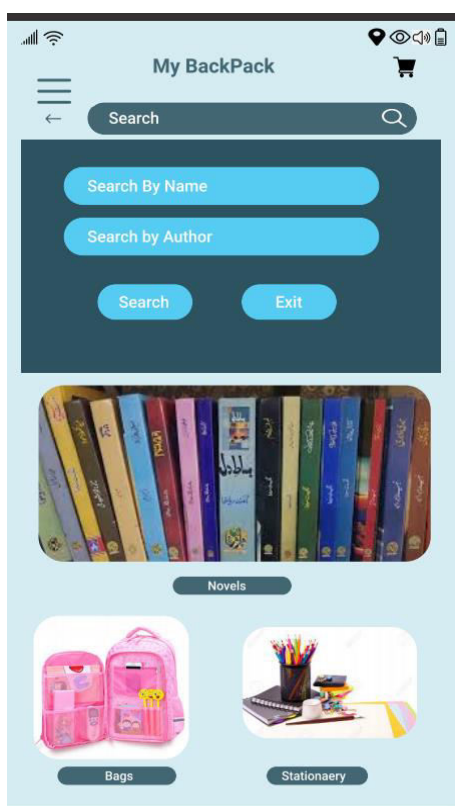
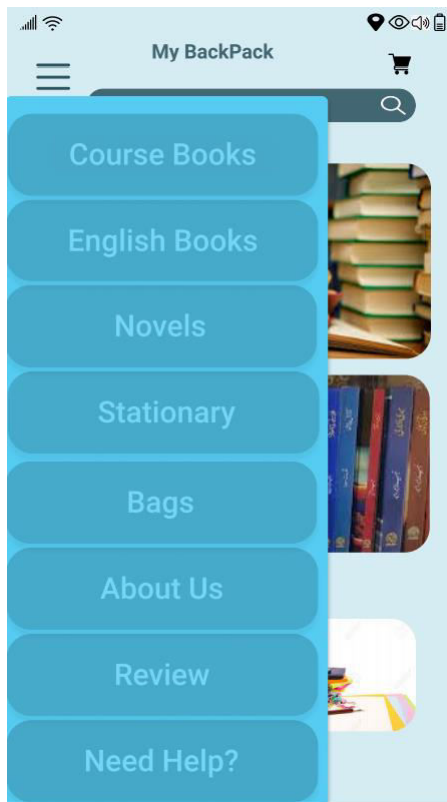
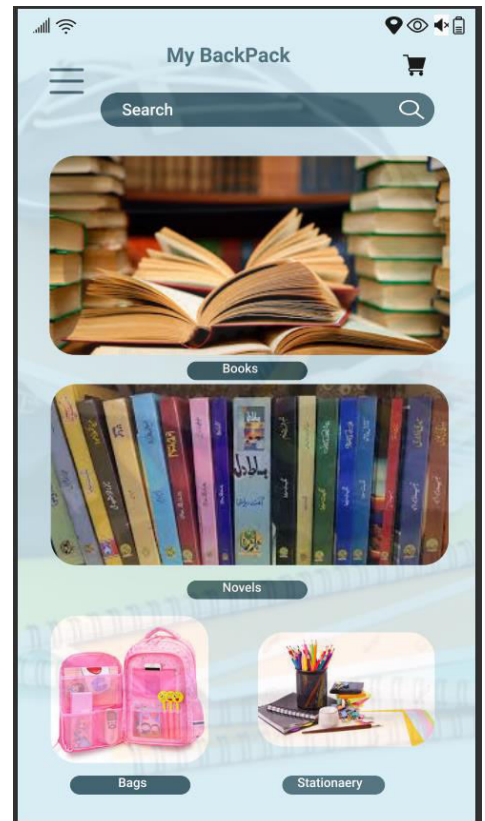
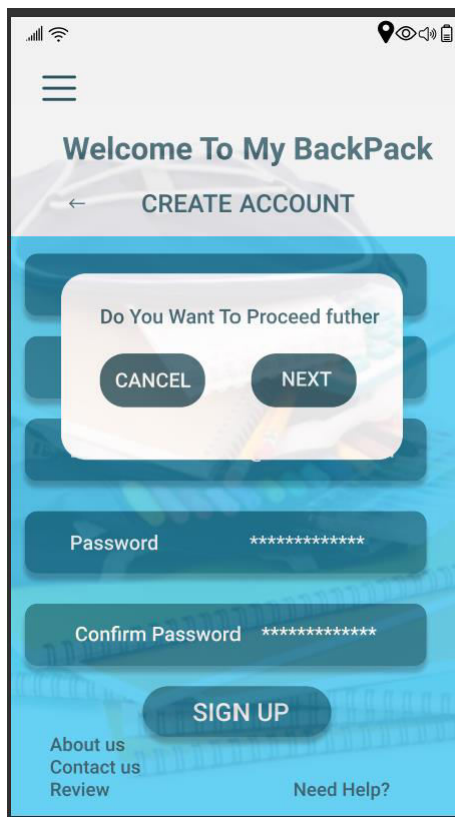
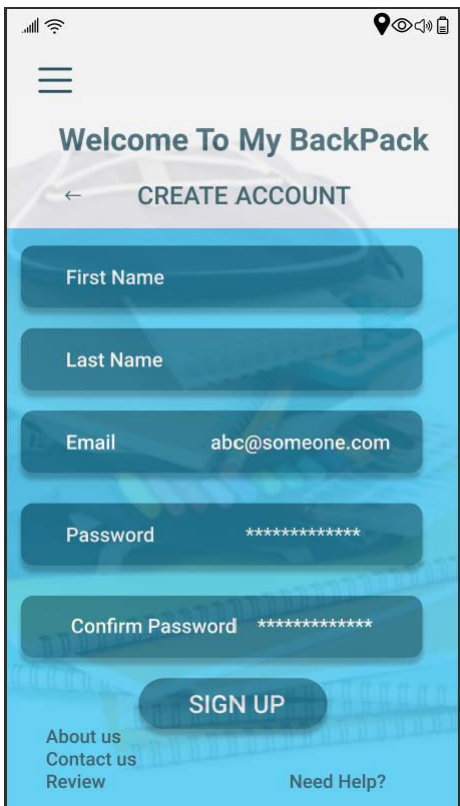
We have designed the interactive system which is the mobile app for the online shopping of the books and stationery. In our country the field of ecommerce has increased during the days of Covid-19 and thus people also want to buy the online books through which they can get whatever they want at their door steps.

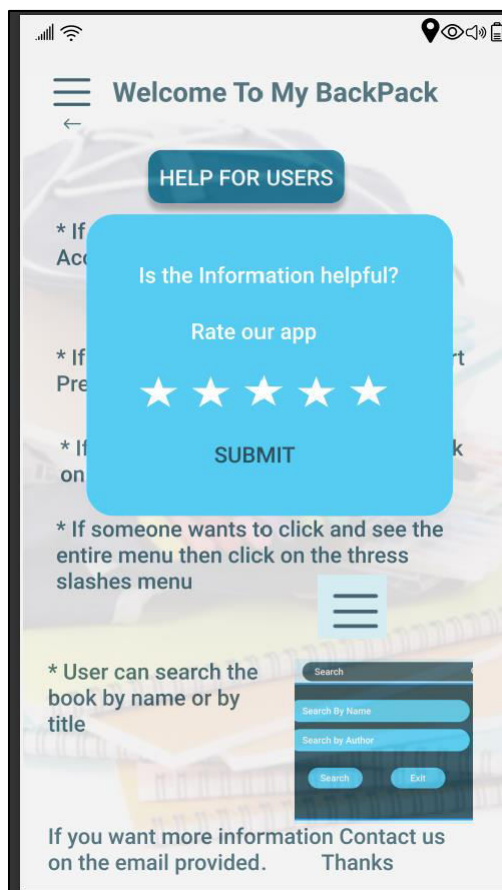
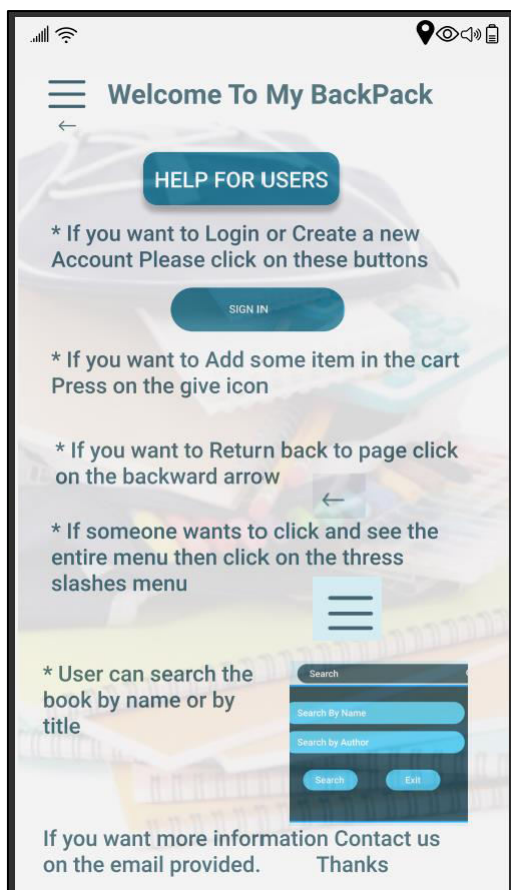
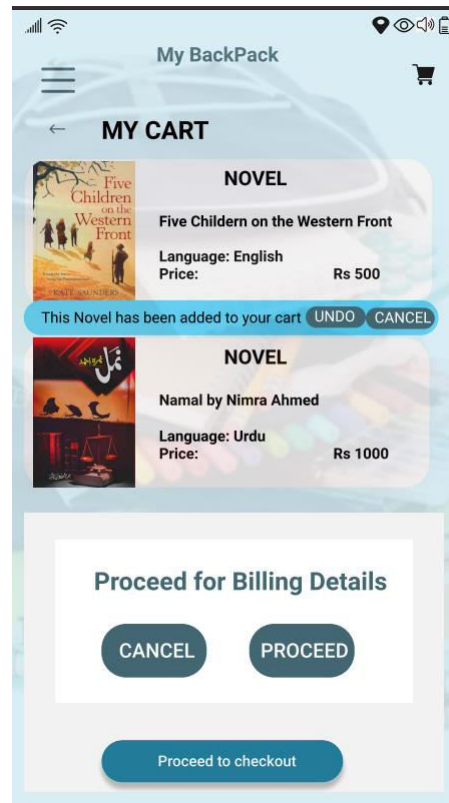
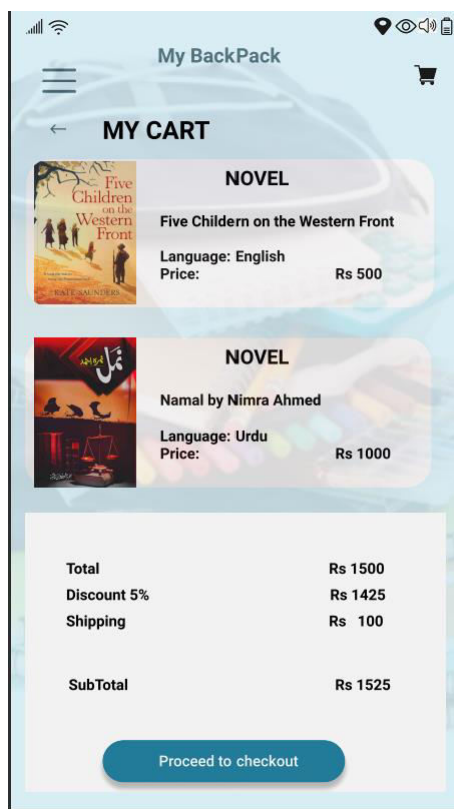
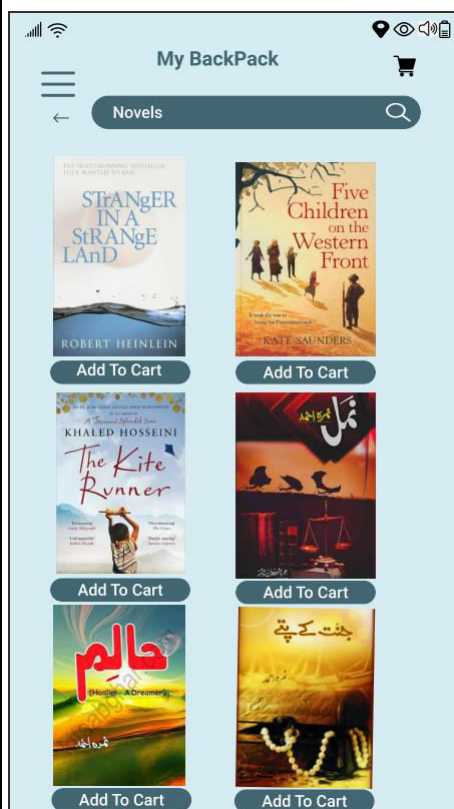
In this app we have designed 5 pages, and every page has the unique interface with respect to its features.

2. Design of Pages in our App:

Main Page







3. Paradigm of Interaction:

The paradigm of interaction in this app are updated according to the current pattern. These are:

- **WIMP**
- **Graphical User Interface**

3.1 Choice of WIMP:

WIMP interface is used in it because the app has all the features like:

- **Windows**
- **Icons**
- **Menus**
- **Pointers**

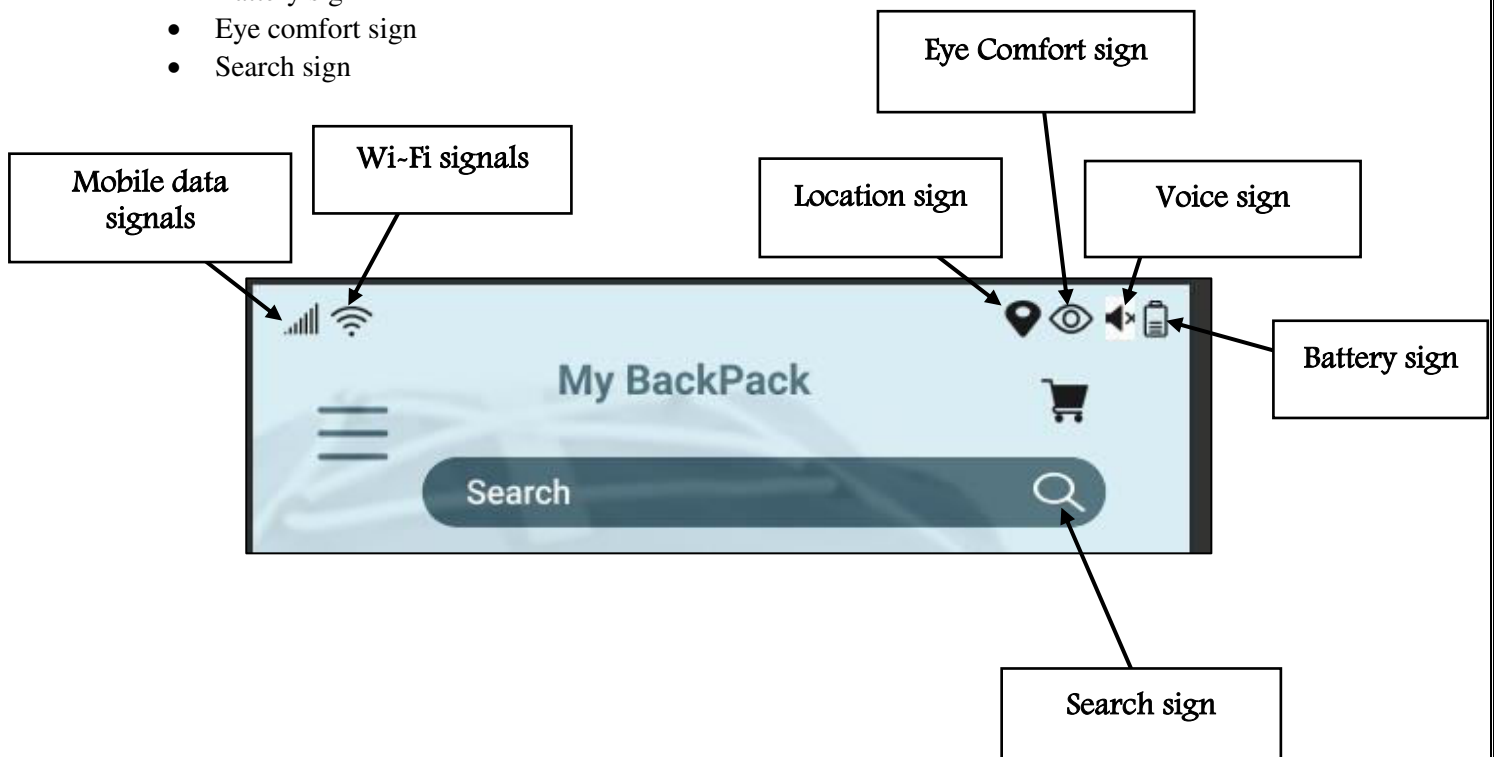
3.1.1 Windows:

As it is the mobile app so for desktop some more updating is required for functioning of the app perfectly so windows features are not as much important and used as others three.

3.1.2 Icons:

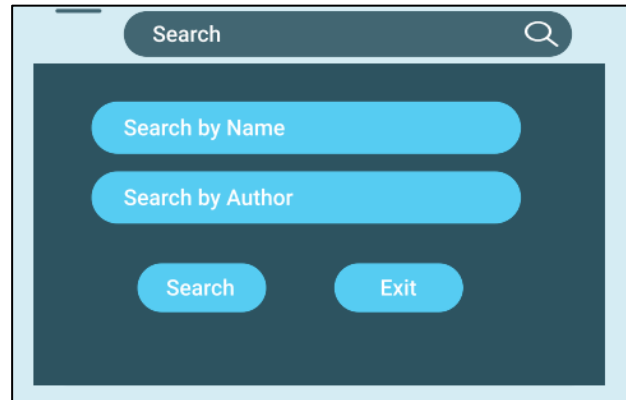
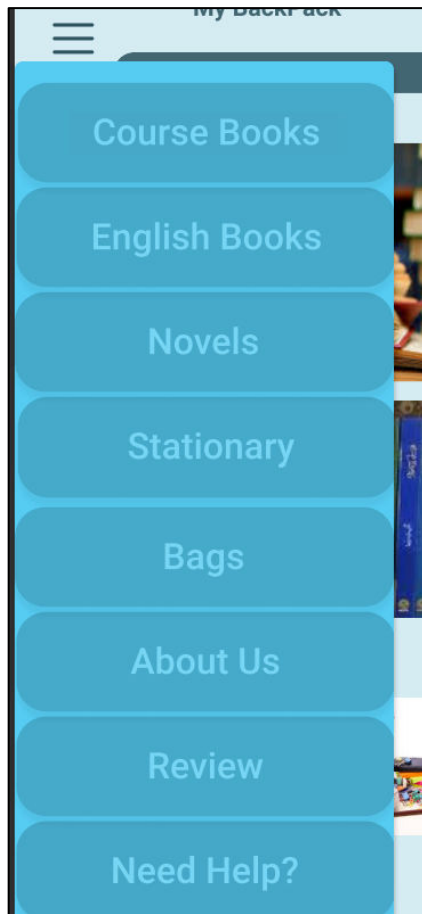
The icons feature in this app are some of the common features that are commonly used in all the mobiles and users with little or no knowledge can use the app. The following icons that are used in this app:

- Mobile data signals sign
- Wi-Fi signals sign
- Location sign
- Voice Sign
- Battery sign
- Eye comfort sign
- Search sign



3.1.3 Menu:

The menu is used in this application can help to show the different thing related to this app and thus can help the user to choose their main focus without wasting their time.



3.1.4 Pointers:

Pointers in this system is the touch screen or the stylus pen through which the user can interact with the application's interface.

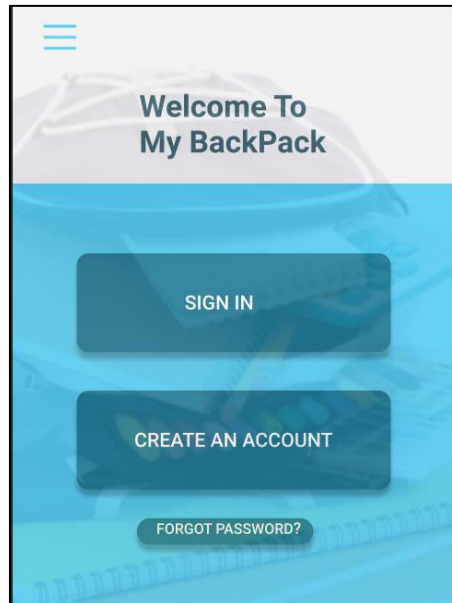
For tablets the pointer can be the mouse pointer that is used to control the icons on the screen.

3.2 Choice of Graphical User Interface:

The graphical user interface has been chosen for this application because the graphical interface is the modern interface used in most of our daily life applications ad thus helps every user to run the application easily.

The features used in the graphical designing of this app such as colors, icons, pictures and text are very user friendly and attract every user.

The color combination causes the artistic and soothing effect on the user eyes and user will feel more and more comfortable after seeing and running it.



4. Design Process in My Backpack App

The design process in this app is very simple so that person with basic knowledge can understand the interface and all the things/ words of the application.

4.1 USER PERSONAS:

User personas are the people that usually interact with the system. The application is designed accordingly keeping in mind the needs of persona and evaluation.

The persona developed here are:

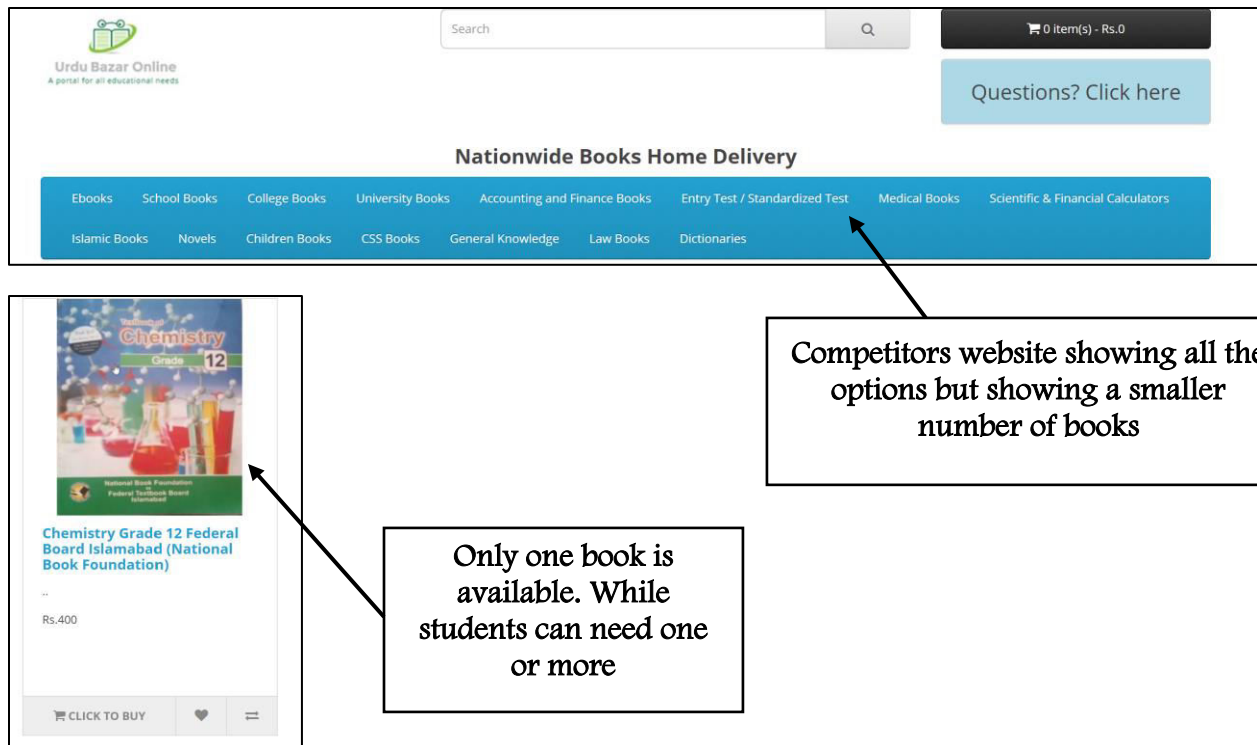
4.1.1 Stakeholders:

The stakeholders are the first group of people that have to interact with the application because they are the one who wants that application must be attractive, easily accessible and would attract large number of audiences.

Needs and Expectations of the Stakeholders:

In Pakistan, there is rapid increase in the e-commerce and digital world during the Covid-19, but the online books buying trend is not that much popular and if the users search for any book to buy it online the main difficulty is that the apps don't have the availability of course books. Hence, the user feels very much difficulty.

So, we as stakeholders decide to make app for our users so that they can avail the opportunity to buy the course books with respect to curriculum of Pakistan, for entertainment the comics books and novels.



4.1.2 Clients Users:

The users are the main group of people that have to interact with our application most of the time.

Needs and Expectations of Users:

As users are moving towards the digital and online world. So, all the user wants everything at their doorsteps.

As the users during covid-19 want their children to study and most of the students and parents face difficulty as they didn't get the course books especially the Punjab textbooks, National foundation Books, and Oxford books for primary and secondary classes.

So, from this application we will expect that users can avail the opportunity to buy all kind of curriculum books and can get entertainment books with discount.

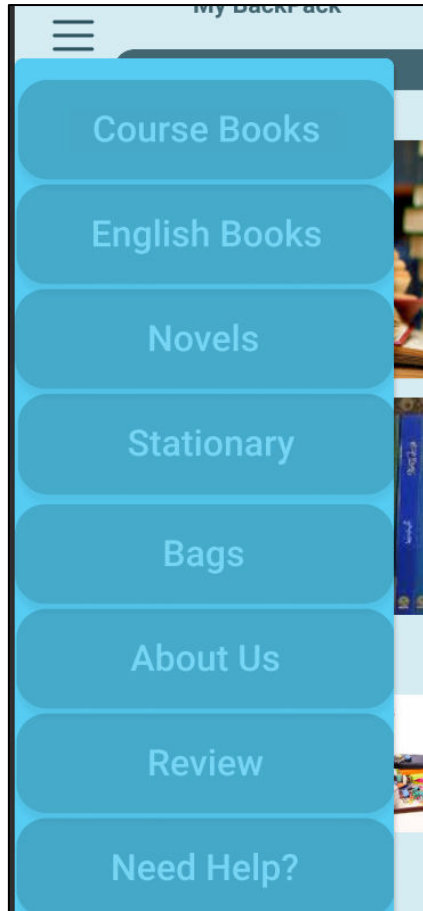
4.2 Scenarios Developed:

Scenarios are the conditions which make the users to decide what they are making are according to the taste of the users and the most important thing is the usability and availability.

The story behind creating this app is to make it easier for each and every persona and according to their taste.

4.2.1 Student Scenario:

Hania is the student of class 9th. She wants the Physics book according to her curriculum. But due to covid-19 and lockdown she cannot buy anything. She decided to look online for the book but as she looks online opened many websites but doesn't get good response but she opens our website and then she searches from our Hamburger menu and then she presses the course book and Hurrah! She easily found it.



4.2.2 Parent Scenario:

Tuba's mother is really anxious because Tuba study had started but Tuba's mother cannot buy the Punjab Textbook Urdu book. She wanted to buy it online and search many of the websites but cannot buy then she contacts us and we deliver them book with 2-3 working days.

4.3 Navigation Design:

Navigation design helps the user to interact with the system's product through the different icons and implementing ways for user to navigate the app.

We have made the enhancing and appealing navigating icons that attract the user and helps them to understand the credibility of the product.

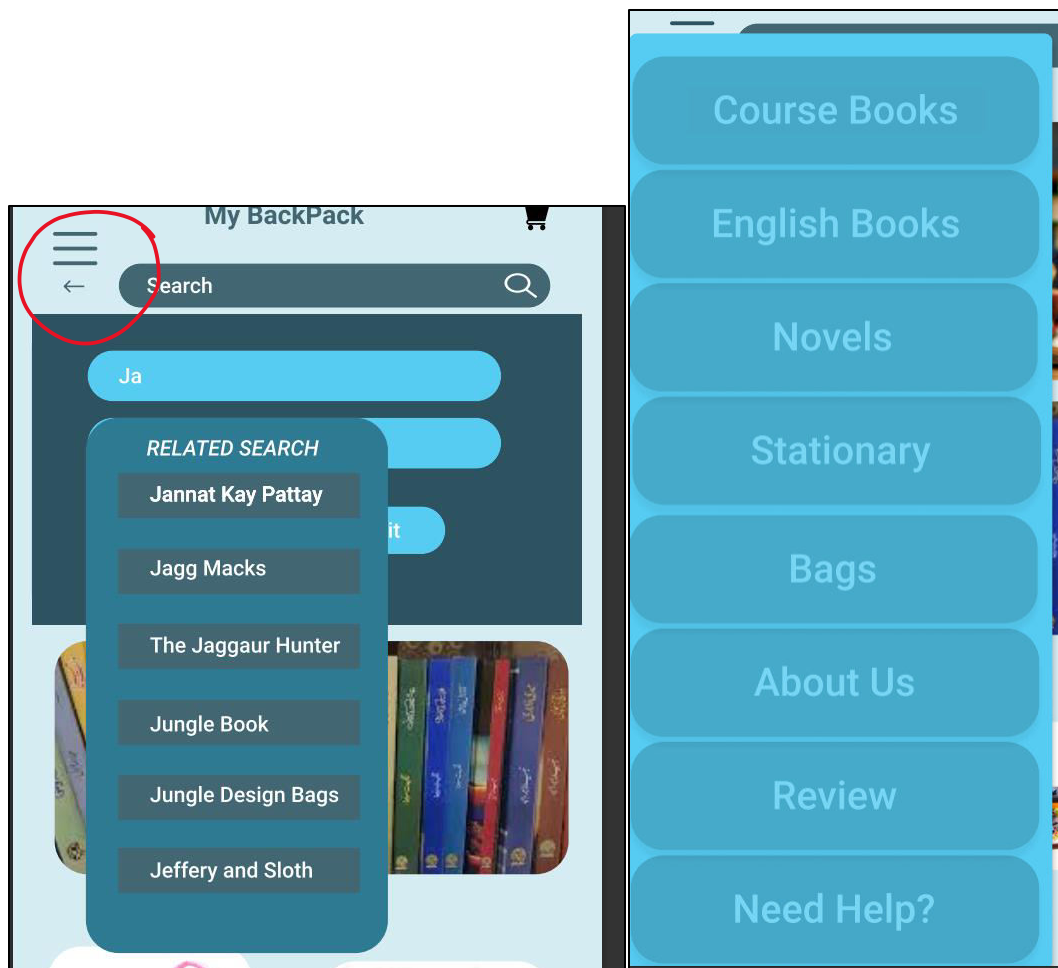
There are the following menus and icons used in our website:

4.3.1 Hamburger Menu:



Hamburger menu icon is the three lines that can be clicked or tapped to get or reveal more options in the app.

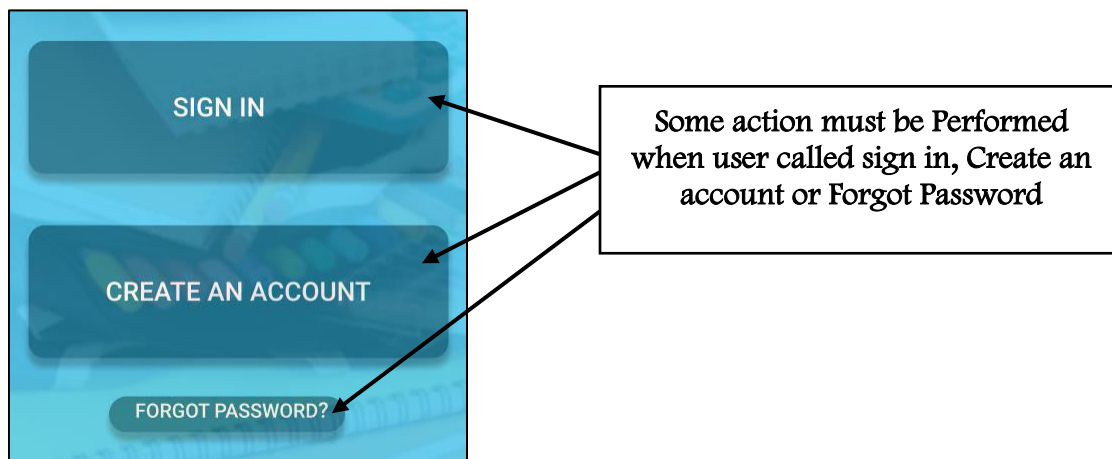
It is the most common icon in the most of the apps now.

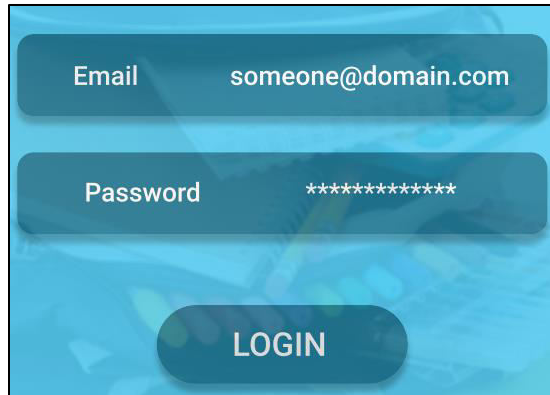


4.3.2 Call-to-Action Button:

In our application we have made some of the buttons that when clicked call the action and the action get performed.

Through these buttons the user can get to know what is happening and if he/she clicks on specific button what will happen.



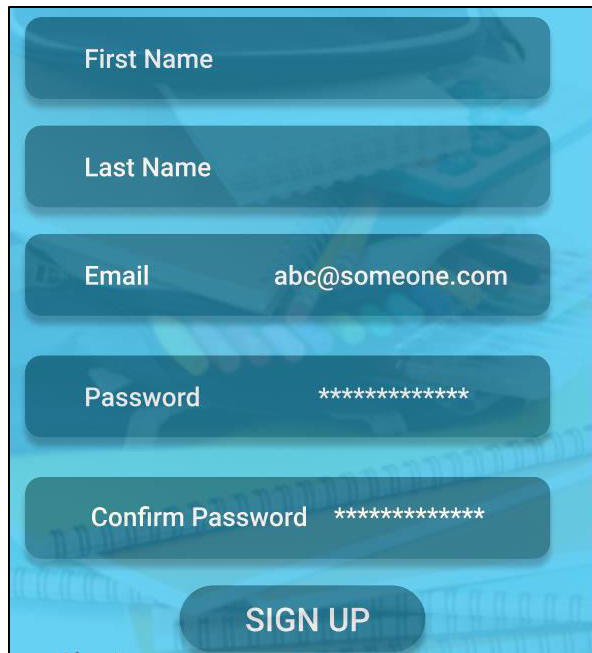


Email someone@domain.com

Password *****

LOGIN

When sign in button is pressed



First Name

Last Name

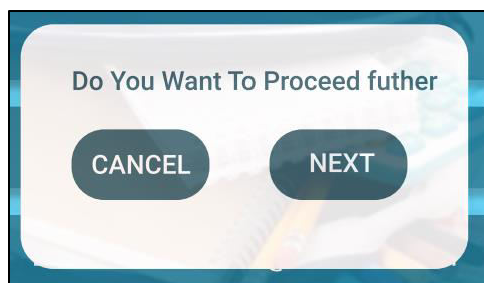
Email abc@someone.com

Password *****

Confirm Password *****

SIGN UP

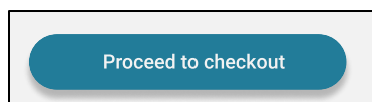
When create account button is pressed



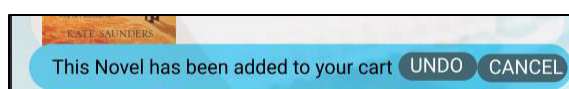
Do You Want To Proceed futher


CANCEL NEXT

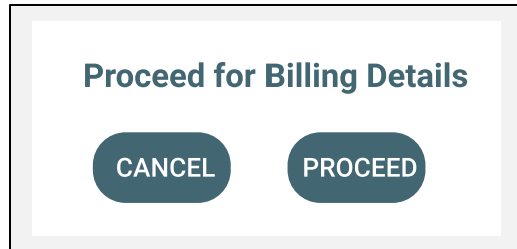
Alert boxes and some undo buttons that can return to previous



Proceed to checkout



 This Novel has been added to your cart UNDO CANCEL



4.3.3 Mega menu:

In the end of every page there is mega menu used in our app that helps the user to choose any one of the options if he/she face any kind of trouble.

The main benefit of mega menu is that they are visible at once and easily seen and handle by the user



4.3.4 Navigation Cues:

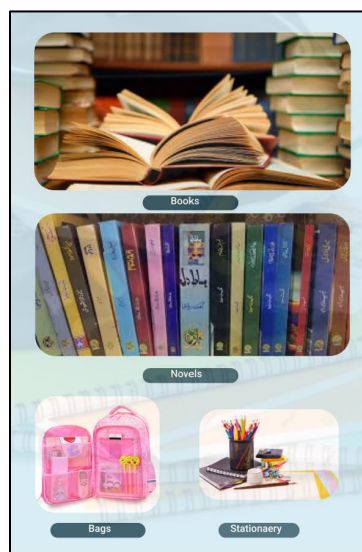
Navigation cues are the icons that can help the user to calm their state of mind as they navigate through the website.

The navigation cues in our application are:

Title of our application



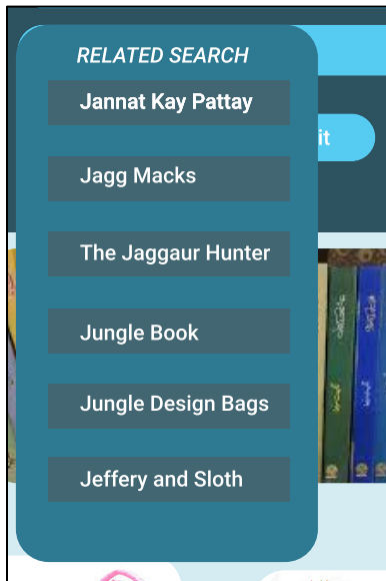
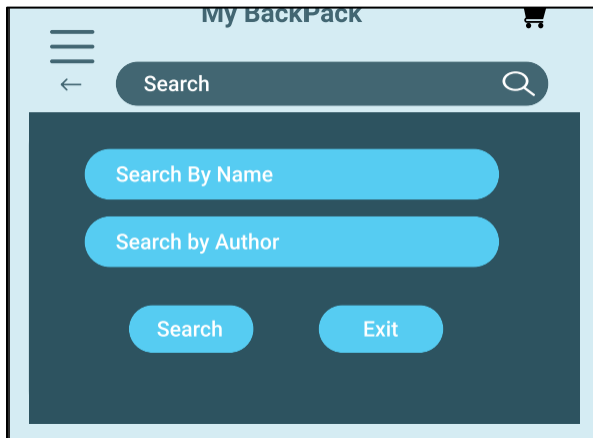
Visual designs changes



Change of designs and colors in every interface regardless of the background and text colors

4.3.5 Meaningful Labels:

Meaningful labels are the tags or options that help the user to choose more than one option in the specific area.



4.4 Screen Design and Layout:

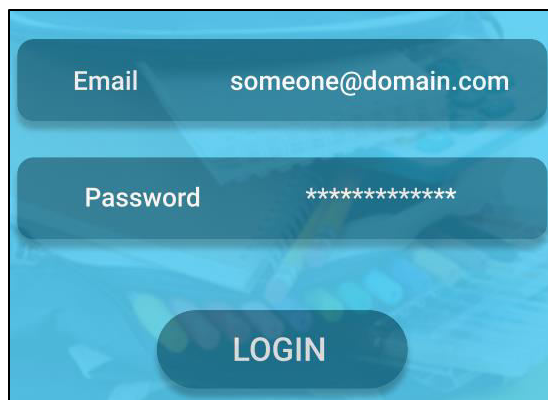
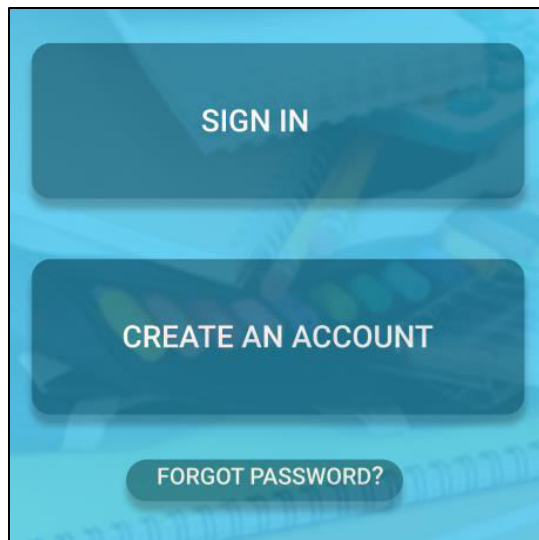
In our design of application, we have used the following screen designs and layout principles:

4.4.1 Grouping of Items in order:

We have used the boxes for the users to specify the things.

We have used the spaces among the boxes and text so that things get clear to the user

We have used the special boxes that can generate alert messages with specific buttons.



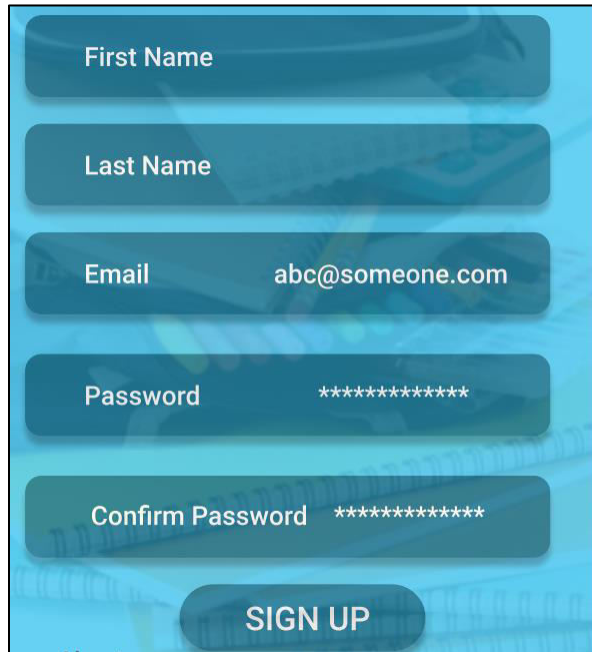
Grouping up of boxes, buttons
images each in great and appealing
way

4.4.2 Decoration:

In our app we have kept the great care that the design should be appealing to the user and we have made it more attractive using the different boxes.

We have used different type of fonts with different colors that attract the user to give the sense of coolness.

We use fonts to put emphasis on the headings and important information.



First Name

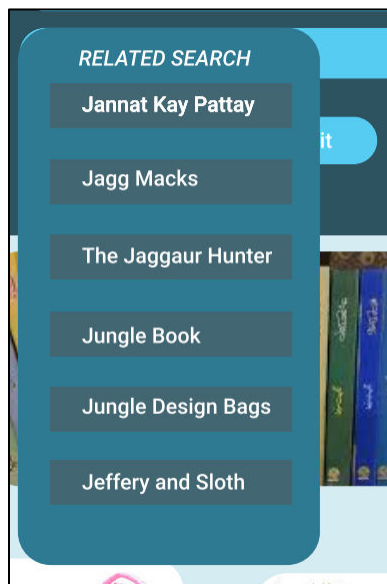
Last Name

Email abc@someone.com

Password *****

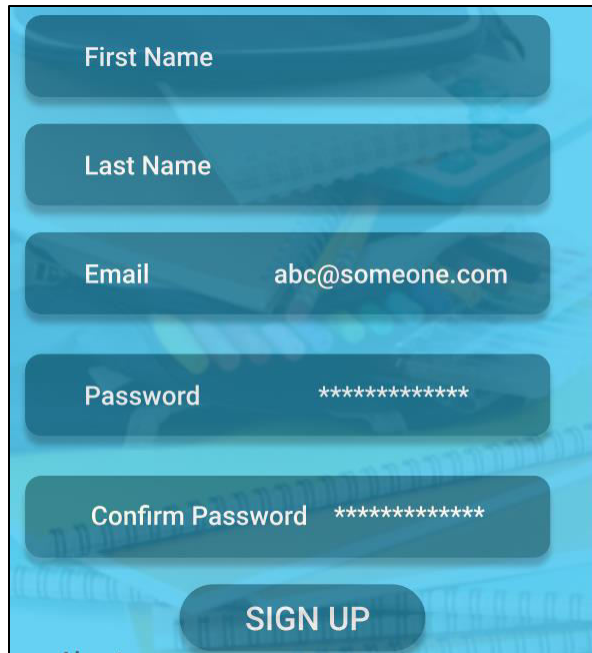
Confirm Password *****

SIGN UP



4.4.3 Alignment of Text:

Usually left side alignment of text is preferred so, we have tried to make the alignment of text and all the boxes on the left side so that the consistency is maintained throughout the app and user feels better after reading or seeing the interfaces.



First Name

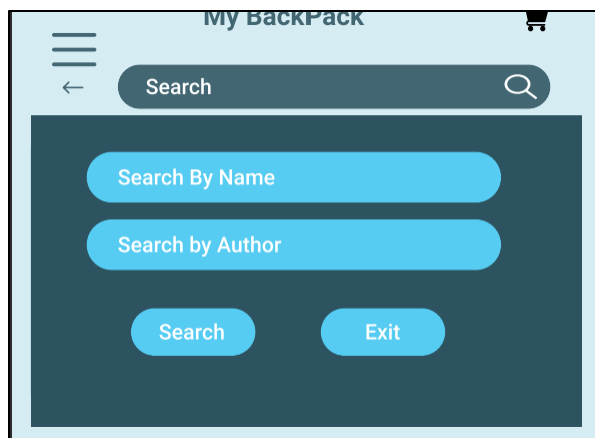
Last Name

Email abc@someone.com

Password *****

Confirm Password *****

SIGN UP



My Backpack

Search

Search By Name

Search by Author

Search Exit

4.4.4 Alignment of Numbers:

In our application, when the billing details are displayed all the integers are placed on the right side so that the user gets attract and usability of the application increases.

Total	Rs 1500
Discount 5%	Rs 1425
Shipping	Rs 100
SubTotal	Rs 1525

Proceed to checkout

4.4.5 Spaces Between the Boxes:

As, spaces increases the readability and the attractiveness of any things. So, in our app we have made it with great conscious that the spaces between each and every box, text and columns should be equal and it attracts our audience.

Welcome To My Backpack

← CREATE ACCOUNT

First Name

Last Name

Email abc@someone.com

Password *****

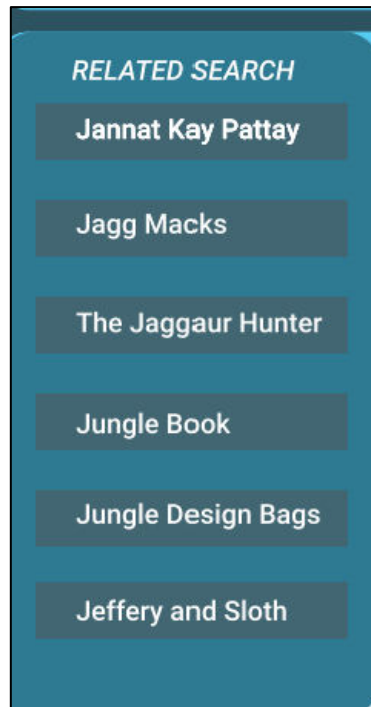
Confirm Password *****

SIGN UP

About us
Contact us
Review

Need Help?





5. Usability Specification for the My Back-Pack App:

Usability specification for this application consists of many attributes that are tested experimentally with the time keeping in view the competitors and the target which has to be achieve from these tasks.

The usability specification for any interactive system occur on the following basis:

- **Performance measures**
- **Preference measures**

5.1 Performance Measures:

Performance measures for this application are the tasks such as:

- **Time taken for clicking menu**
- **Time taken to load the menu**
- **Number of errors received when questionnaire survey had performed**

Benchmark tasks are used to test the performance measures and to achieve the target values.

5.2 Preference Measures;

Preference measures are the measures that can be achieve in future according to the choice of users and the updating of competitors.

For this application the Usability specification table has been made to get the clear thoughts of what will the application management team update to get the future results:

USABILITY SPECIFICATION TABLE				
USABILITY ATTRIBUTE	MEASURING INSTRUMENT	VALUE TO BE MEASURED	CURRENT LEVEL	TARGET LEVEL
INITIAL PERFORMANCE	BT TASK 1: Clicking on Menu	Time on clicking	20 secs	15 secs
INITIAL PERFORMANCE	BT TASK 2: Loading available books	Time taken to load	30 secs	20 secs
INITIAL PERFORMANCE	BT TASK 3: Loading available books	Number of errors	3	1
INITIAL SATISFACTION	Questionnaire	Average scores of answers from 10 users	7	5

6. USABILITY PRINCIPLES IN OUR APPLICATION:

The usability principles for our application are:

- **Visibility of System Status**
- **Match between System and the real world**
- **User Control**
- **Consistency**
- **Error Prevention**
- **Recognition then recalls**
- **Flexibility and Efficiency**
- **Help user to recognize and correct the errors**

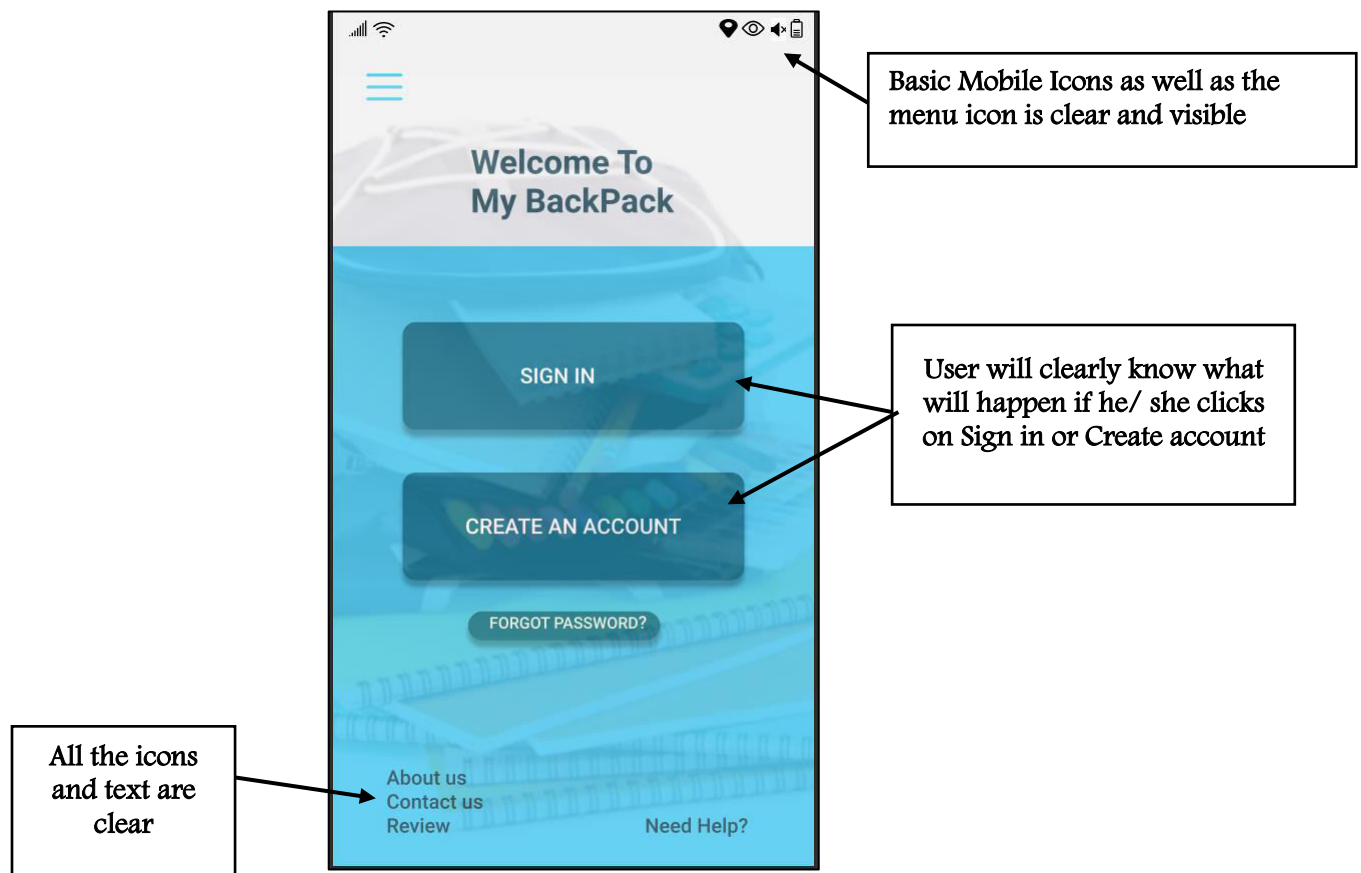
6.1 Visibility of System Status

In our Back-pack application all the interfaces are clear and visible to the user.

The text, color combination, loaders and menus all the things are design with respect of the user of every age and mentality.

The basic icons are used in the design because person with very basic knowledge of using the mobile phone can easily use this app and can make their life easy.

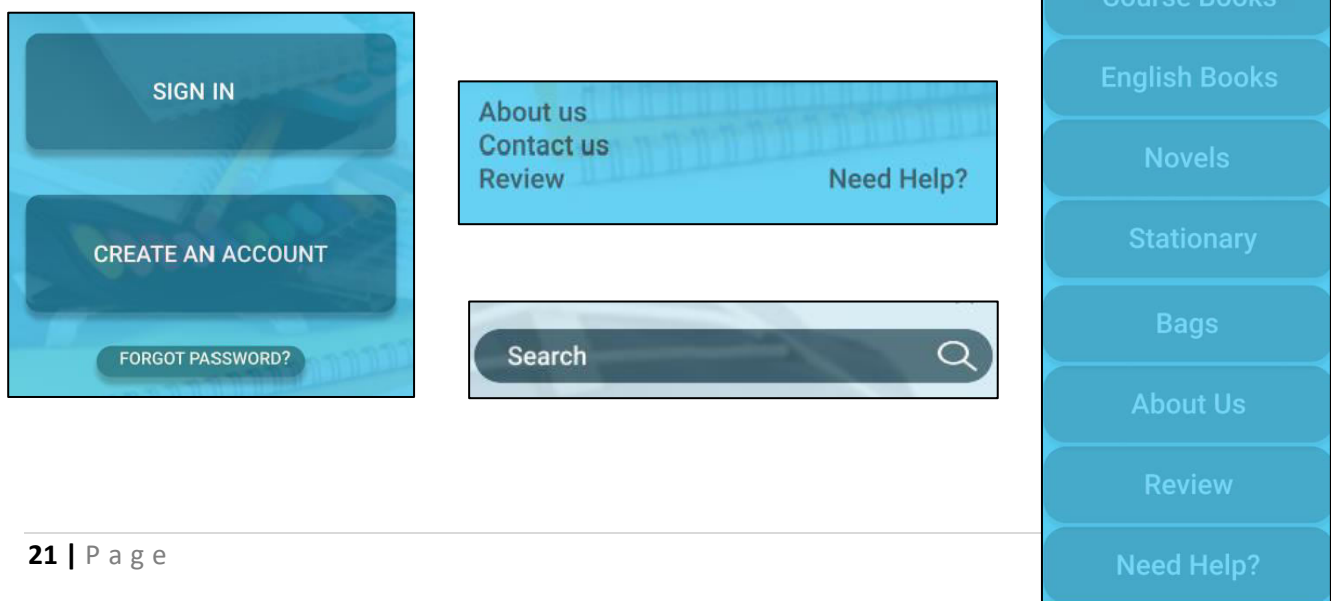
As visibility of this app is clear so the user feels very much easy and know before that what will be going to happen when I click the specific icon or menu.



6.2 Match between System and the real world

In many applications of our daily life, the user gets bored because of many reasons. One of the particular reasons is that the language of the application is not according to the target audience.

So, in our application we have used the basic English language that can be understandable by the people with basic English knowledge.

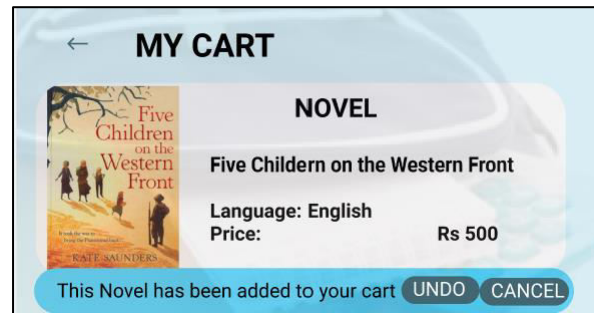
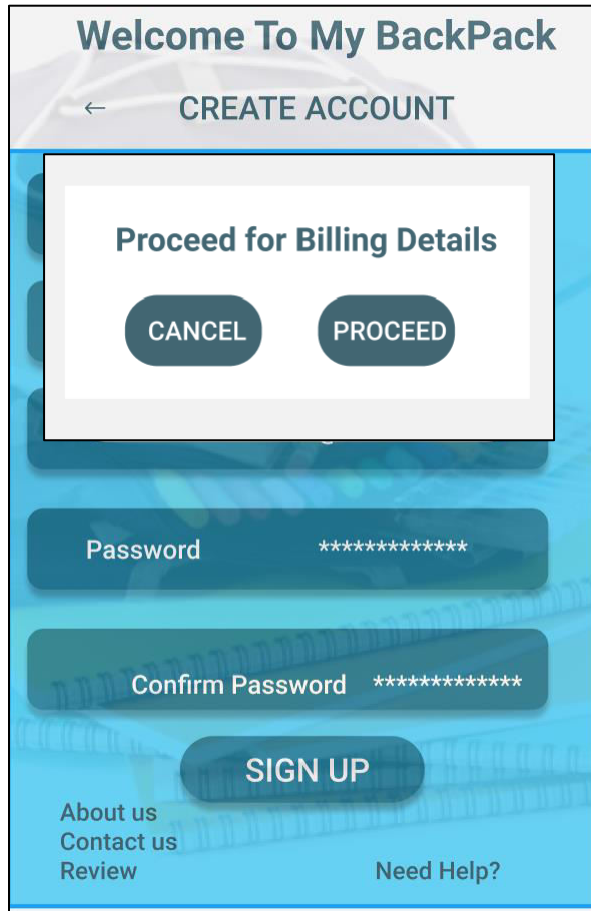


6.3 User Control

Through this principle the user is free to use the icons and navigate to perform tasks. The user is free to undo the task that had happened by accident.

In our app when the user presses the submit button or search button he can return back and if the user presses the Proceed to checkout then the popup screen will appear and asks the user to ensure about his purchasing.

Similar is the case when the user presses the Login or the Sign-up button.



6.4 Consistency

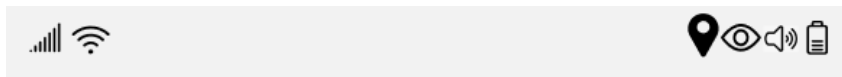
Consistency is the important usability principle that has to be kept in mind while dealing with any kind of software designing.

In our app we have kept the great care while designing that every button that is used in all the interfaces should show consistency and color combinations for all the pages is the same throughout the app.

The buttons style, radius and all the other features remain consistent throughout the app.



Menu icon is consistent in all the interfaces



Front line along with all icon remains same throughout app

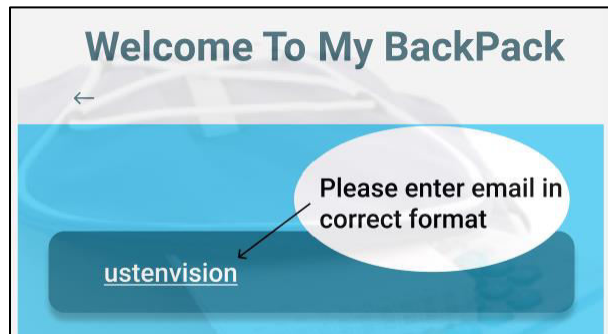


The Last icons remains consistent in all interfaces along with colors

6.5 Error Prevention

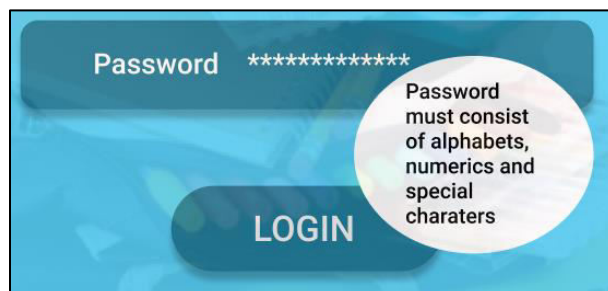
All the apps we use in our daily life must have the feature that shows the user the error if they place while entering their details and proceeding.

Similarly, in our app we have keep in mind that if the user enter some of his/her details wrong the pop up message will appear and then the user can get to know about their mistakes.



A Special kind of error message will display if the user doesn't fill the email in proper format:

someone@domain.om



Special kind of instructions are also provided that helps users to enter the correct details as asked

6.6 Recognition then recalls

Through this principle the user can get the idea by only seeing at the icons and through it the user doesn't have to waste his energy.







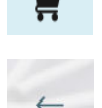
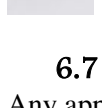
So, in our app we have used the simple icons that can easily be recognized by any of the user and they can just do whatever they want.



Mobile data signals icon easily recognized



Wi-Fi signals icon easily recognized


	Location sign easily recognized
	Eye comfort sign easily recognized
	Sound sign easily recognized
	Battery sign can easily recognize
	Menu icon easily recognized
	Search icon easily recognized
	Add to Cart icon easily recognized
	Back Arrow can easily recognize

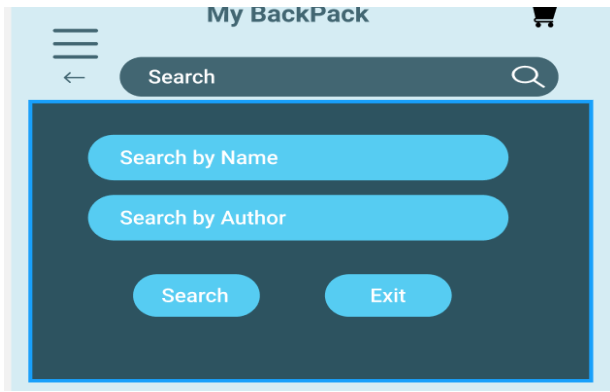
6.7 Flexibility and Efficiency

Any application that is being used must be flexible as well as efficient so that it can attract the users.

Same is the case with our application we had made it as flexible as we can and we had made it efficient so that it attracts most of our users.

Flexibility in My Backpack app

	Through these flexible menu users can get information what they want
---	--

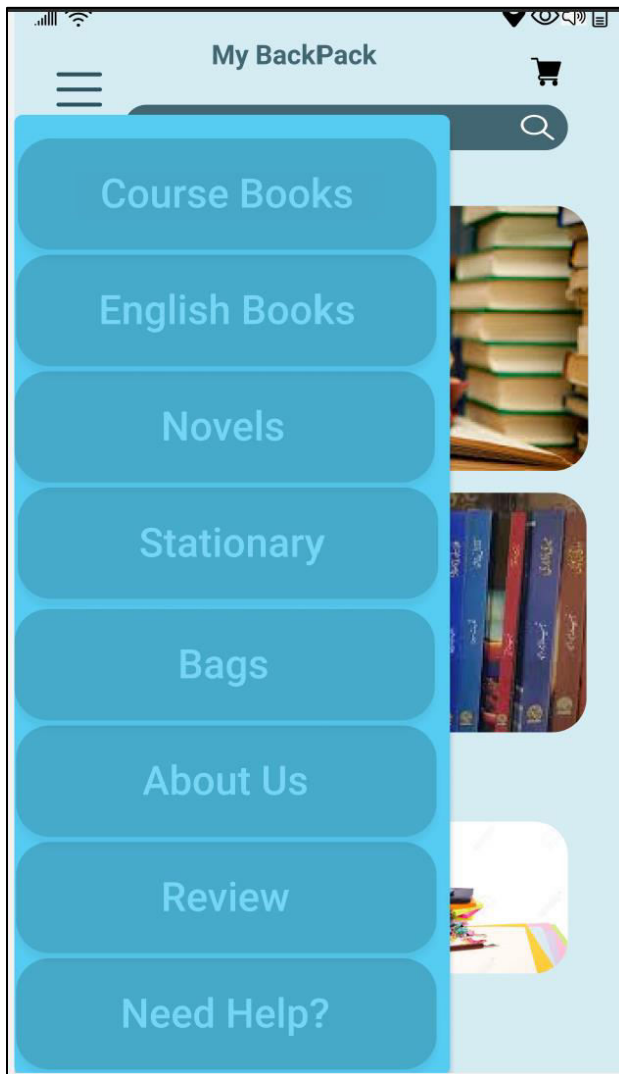


Flexibility of our app can be seen through it that whenever the user wants to search for the book he/she can search by name or title.

Efficiency:

Our app is efficient in the way that it meets all of the requirements that the basic app needs.

It works effectively and all the users feel very happy because its interface as well as all the icons and buttons are efficient to use by any type of person.

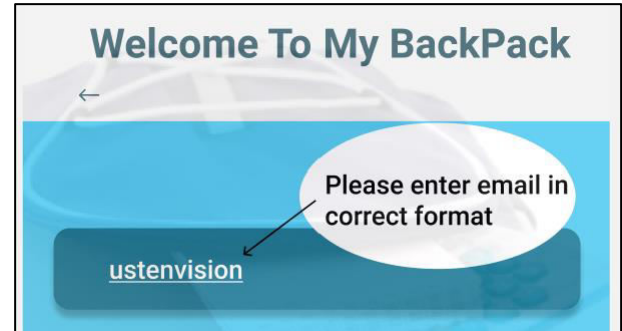
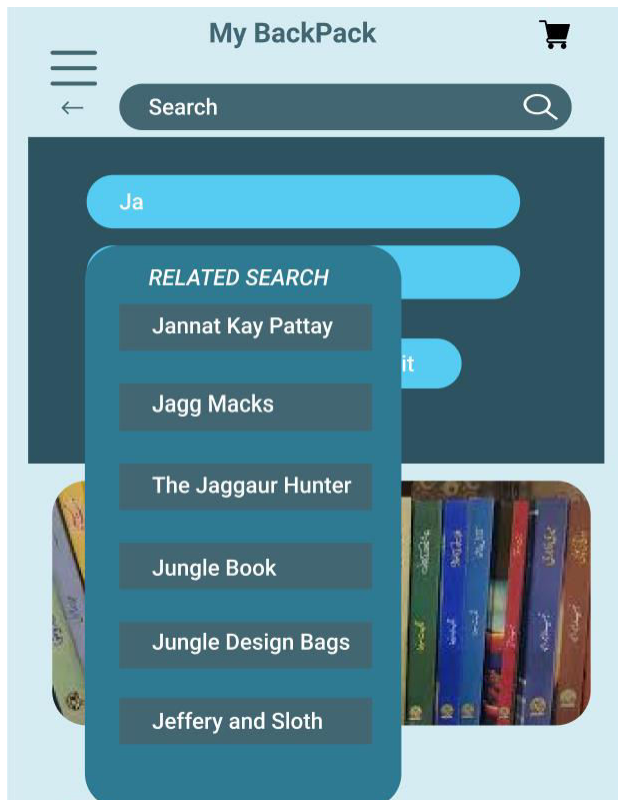


6.8 Help user to recognize and correct the errors

This is the most important principle of usability because through this the user can get the thing which they want quickly.

The user if they are making some mistakes in the spellings or they do not know the name of the particular thing a lot of items appears in the bottom that can help the user to get the right thing.

In our app we have tried our best to make this thing more attractive to the users and we try to give as much options as much we can so that user cannot get confused and can do his/her work quickly.

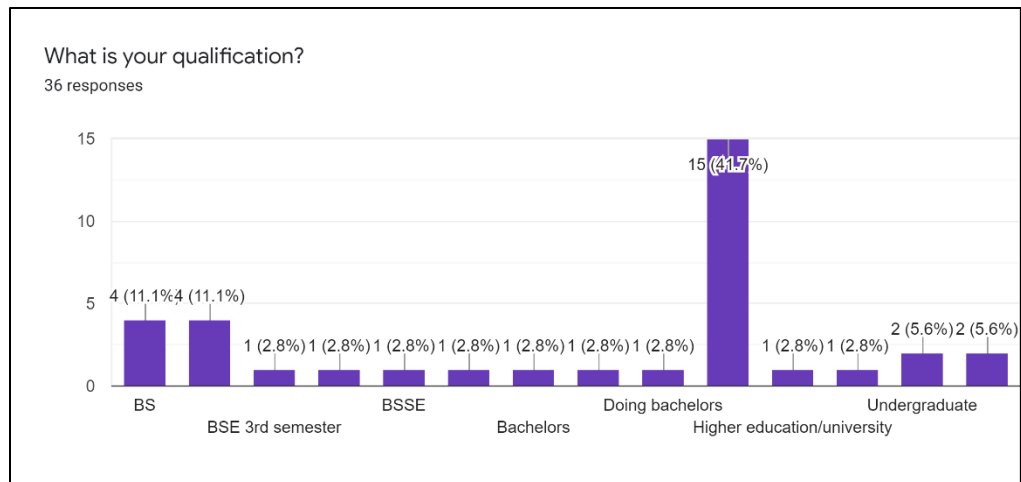


7. EVALUATION OF OUR INTERFACE:

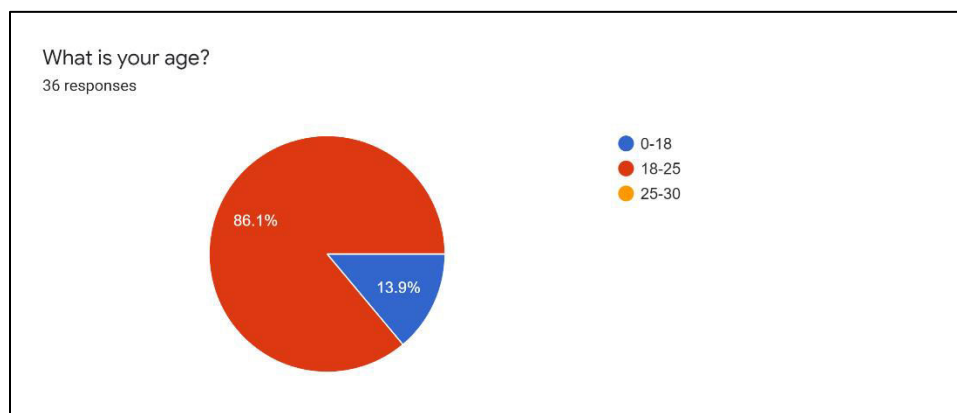
Out of all the types of evaluation techniques we choose **Query technique** in which we mad questionnaire forms to as the questions directly to the audience about our interface. Due to limited resources at the time of Covid and since we had only interface designed of our app, we choose our class fellows to evaluate our system as the users.

In our form we asked them the most important questions related to our interface like its background color, font size, menu options and other. Following is the result of our evaluation:

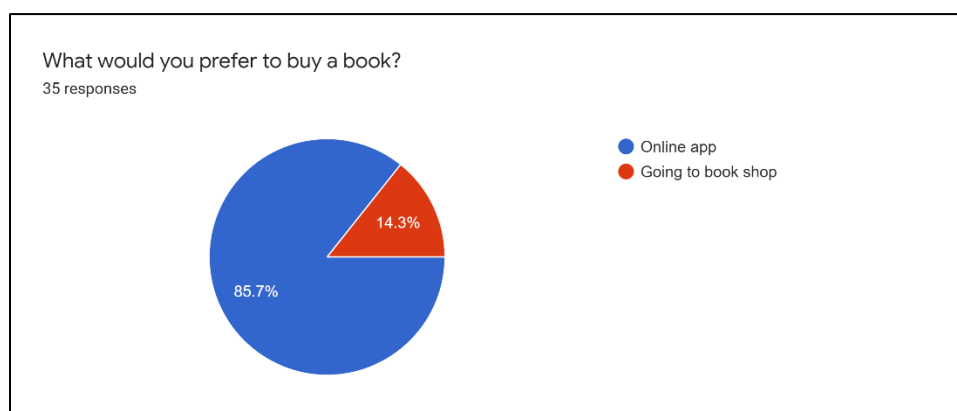
- So, the evaluation was mainly performed by higher university students.



- Age group was mostly from 18-25

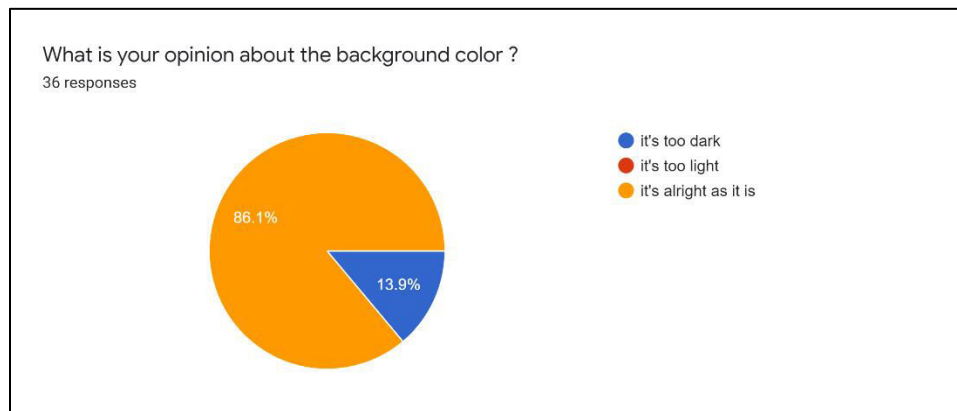


- Majority of our audience preferred to use online book shopping app. A small amount of people who selected to go to book store could possibly have a bad online shopping experience.

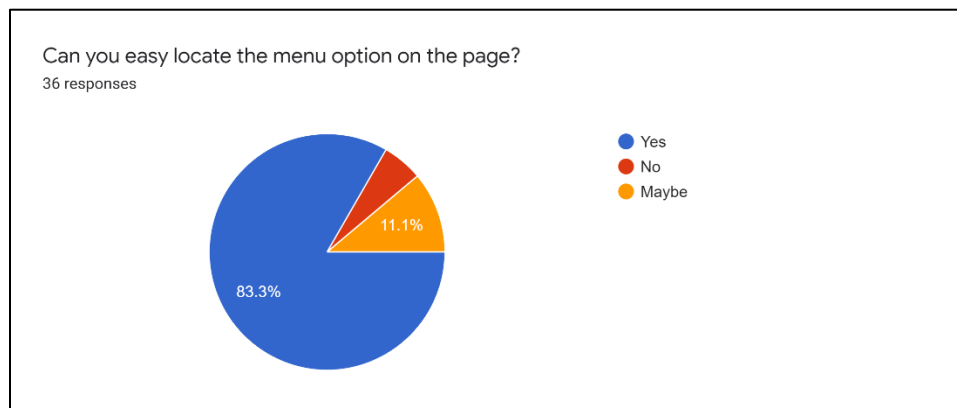


- When we asked the users about how they perceived the background color of our app's interface, 86.1% of the users found it perfect as it is and 13.9% of them found it too dark.
- After receiving the result, we investigated by distributing our app to close friends about the interface color to see why 13% found it dark. So, we concluded that most of them might have used phones to evaluate the form and naturally most of them have low screen brightness.

- So, by using our interpretation we didn't do any change to our background color.

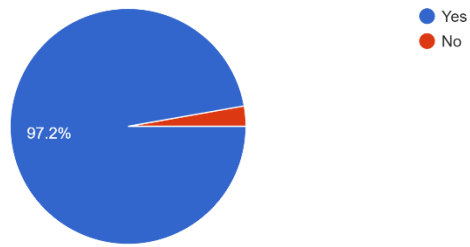


- Majority of the users easily located the menu icon on the home page, as we used a typical symbolic representation to show menu. As most of user proffered using online app so they must be familiar with online app interfaces so we already assumed that menu option will be easily pointed out.
- An ignorable amount couldn't locate it.
- A small amount of people said that maybe they couldn't see. Again, the reason could be low screen brightness or lack of interest. But still to avoid any error we darkened the colour of menu icon color to dark black.



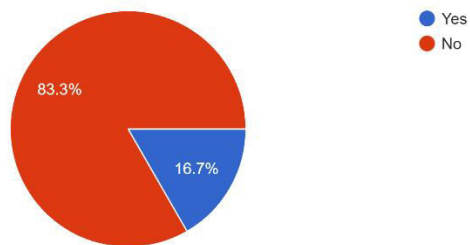
- Almost all of the users found the options of menu in menu icon useful. We placed useful but less option in menu in order to avoid any confusion for the user to see which option relates his need.

Do you think menu options are useful?
36 responses



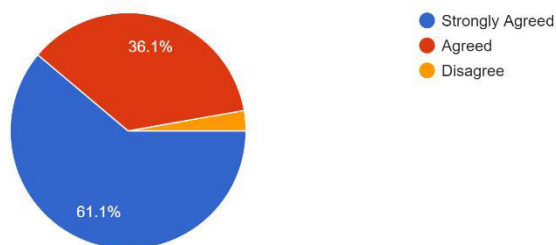
- We gave all the required options on home page to go step wise to the required product. But in case if the user is in hurry, he can directly search the product from the search option to find what they need. our evaluators found it useful because we know we all have limited time and most of the time we avoid to follow steps.
- A small amount might of 16% audience found it unnecessary because it might confuse them or it may be, they found it taking unnecessary space on the page.
- Most of the audiences found it useful so we let this option at its place.

Do think search option is unnecessary?
36 responses



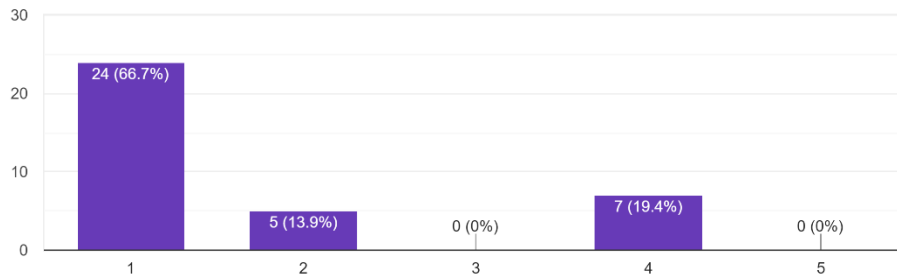
- Font size was agreed by all of the user as easily visible which means we used an appropriate font color and size.

Overall font size of text of app is easily visible.
36 responses



- We got a very satisfying rating about our app. Majority rated it as **excellent** over all. Others rated it as very good.
- A very small amount rated it as poor overall. The reasons might be due to the issues mentioned above.

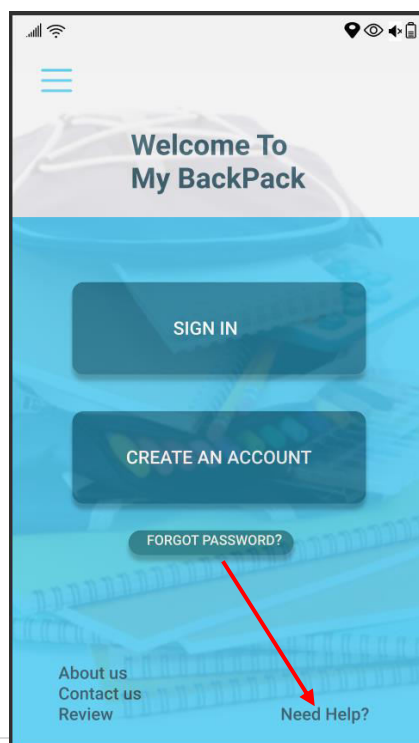
How would you rate our app's interface?
36 responses



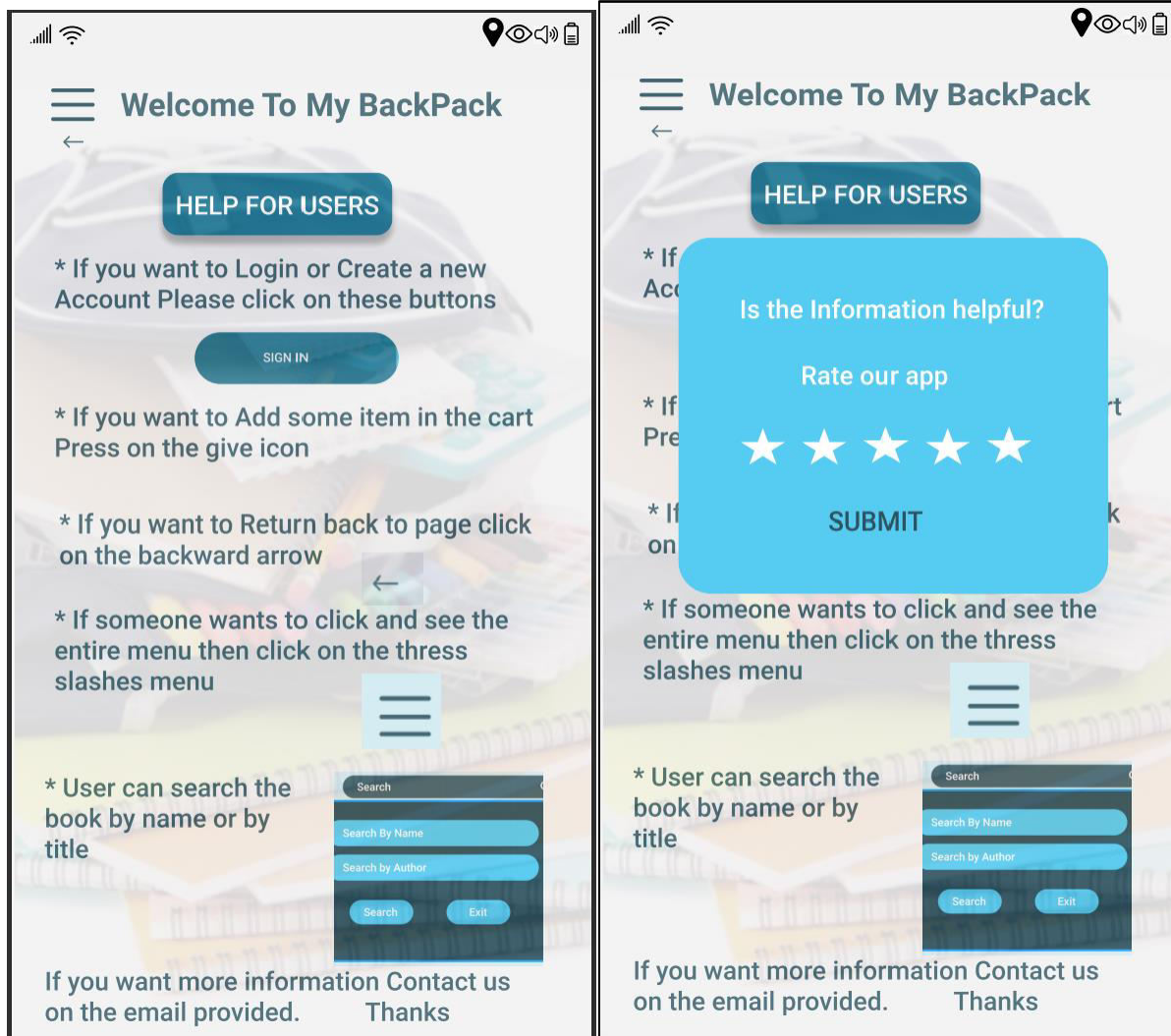
8. USER SUPPORT SYSTEM:

User support is the most basic part of any online app. Since our app has a very traditional kind of usability and online shopping customers/users are usually familiar with this kind of interfaces. But still as the technology expands, everyday new users add to our market and we must have a way to help our customers. So, we must have a way to accommodate our new users at any moment. For that we have used different kind of user support ways in our app.

- We decided to make a user manual to support our users because we believed that people usually find it very time taking and annoying to see tutorials and it is also very irritating to find out their specific issue's solution from a 2-3min long videos. The very first page of our app contains **help** option.



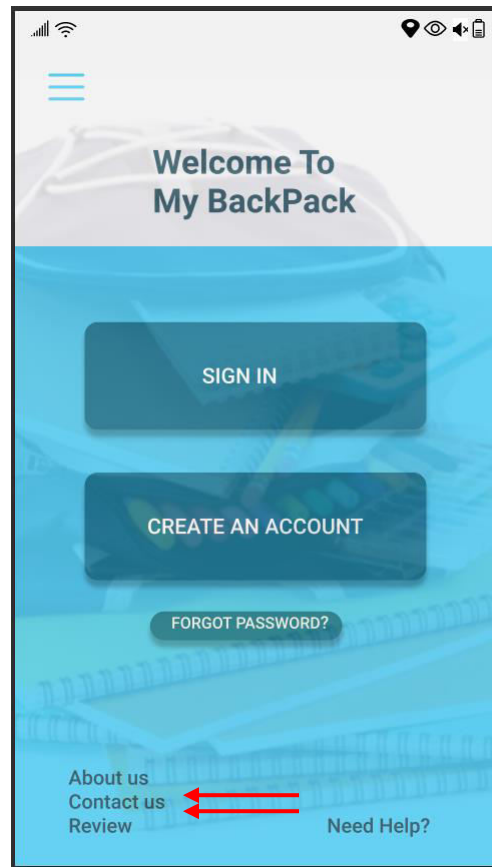
- We gave this option on our very first page as on this page we have no a lot of others options so it will be easy for user to point out the help option. On clicking it a very precise but extremely useful manual will open in another widow which will not affect the task user is performing and he don't have to do it all over again. The manual will address very common issue that could be faced by the users.



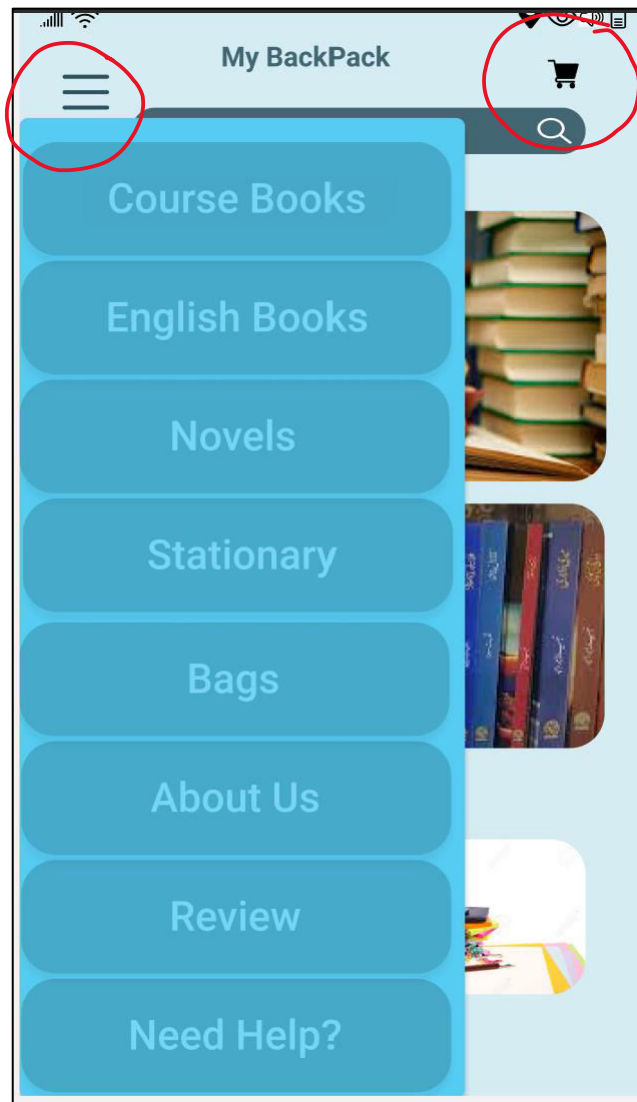
As it can be seen that all the points are explained in small bullets so that user can easily understand what he actually has to do. Secondly, we have used screen shots so that at first glimpse user will find out their required point and can also remember it for later use as pictures remain more in human mind then bare text.

- Also, we'll ask user every time to tell us if information in the help useful so that we can modify it if user is not finding it useful.

- As we know that our user support should be flexible plus dynamic. As our system will keep on adding updates, new issues will arrive and we'll have to address them. For that we have two options:



- In **contact us** user can directly contact us through email and we'll address their issue directly. Also, we have given the option to the user to review our app plus our products. In this way we can address their issues and update our manual accordingly.
- Overall, in our app we have used a very user-friendly interface to provide a continuous support to our users.



- You can see that all the options are very clear. Like cart picture, magnifier picture and menu icons are all very clear that from a first look user can guess what they mean.
- Also, with products category we have not only used text hyperlinks but also, we have attached photos to give symbolic representation that what actually each option is about.
- We have tried to support our users in every possible way without interrupting the task they are performing.