

UNIVERSITY OF ENGINEERING AND
TECHNOLOGY, TAXILA

Department of software engineering
HUMAN COMPUTER INTERACTIONS
ASSIGNMENT NO. : 1 and 2

Submitted to:

SIR TASAWWAR

Submitted by:

HUMNA JAMIL (21-SE-26)

AMNA BANO (21-SE-54)

SYEDA HAANIYA FARAZ (21-SE-68)

Section:

Omega

PROTOTYPE FOR UNIVERSITY DASHBOARD

Relevant Stakeholders:

Students, Parents, Government agencies, Job seekers, Researchers, Professionals.

Survey Questions:

Question 1:

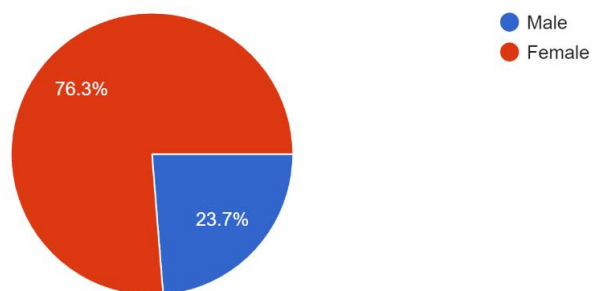
What is your gender?

- ☐ Male
- ☐ Female

Response:

What is your gender?

59 responses



Question 2:

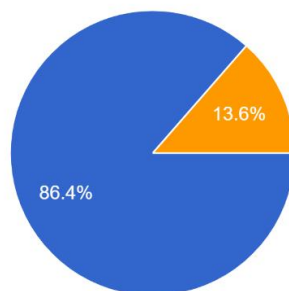
What is your status? *

- ☐ Student
- ☐ Teacher
- ☐ Parent
- ☐ Other

Response:

What is your status?

59 responses



- Student
- Teacher
- Parent
- Other

Question 3:

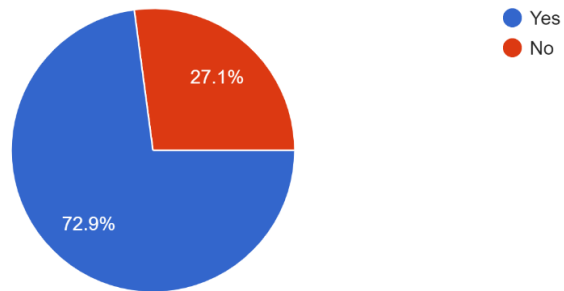
Have you ever used Dashboard? *

- ☐ Yes
- ☐ No

Response:

Have you ever used Dashboard?

59 responses



Question 4:

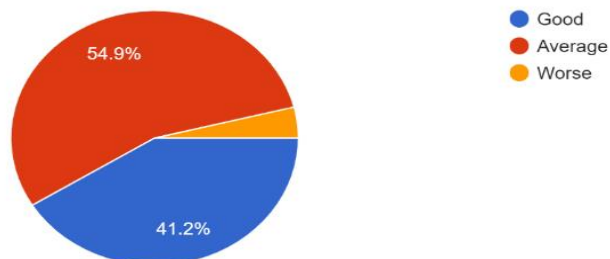
If yes, then please rate your experience.

- ☐ Good
- ☐ Average
- ☐ Worse

Response:

If yes, then please rate your experience.

51 responses



Question 5:

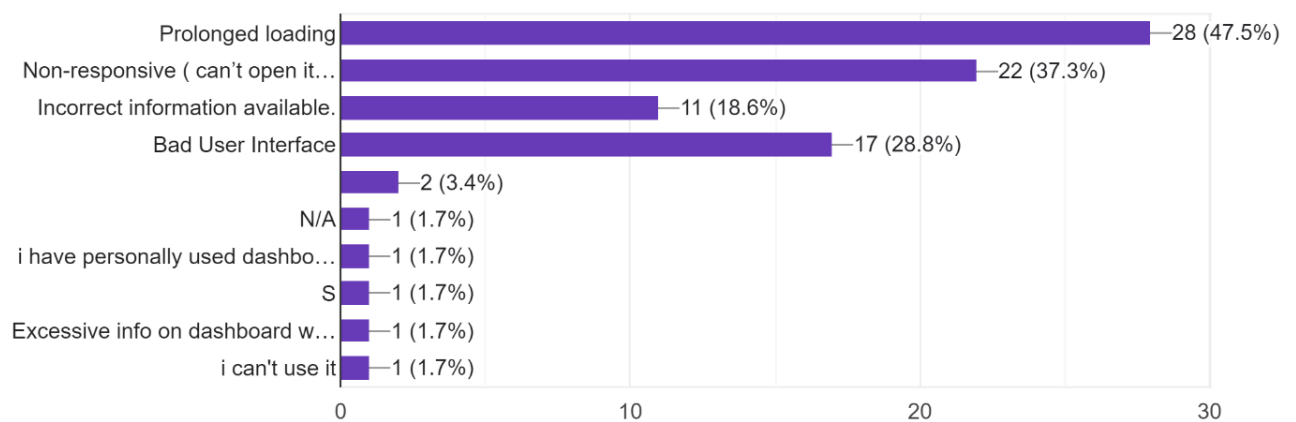
What problems you faced while using dashboard? You can choose Multiple answers. *

- ☐ Prolonged loading
- ☐ Non-responsive (can't open it on different devices)
- ☐ Incorrect information available.
- ☐ Bad User Interface
- ☐ Other...

Response:

What problems you faced while using dashboard? You can choose Multiple answers.

59 responses



Question 6:

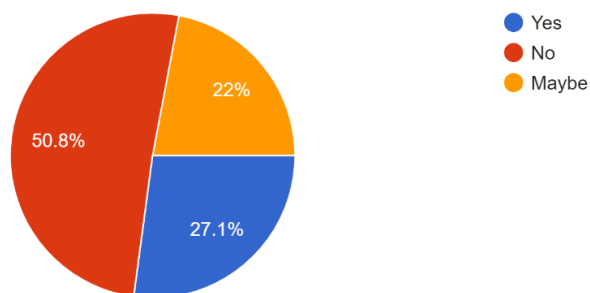
Do you want a lot of information to be shown on one screen? *

- ☐ Yes
- ☐ No
- ☐ Maybe

Response:

Do you want a lot of information to be shown on one screen?

59 responses



Question 7:

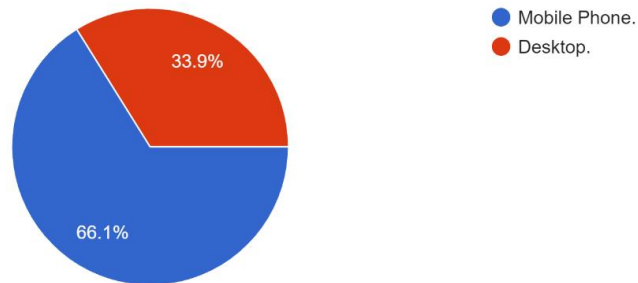
Where would you mostly like to open dashboard?

- Mobile phone
- desktop

Response:

Where would you mostly like to open dashboard?

59 responses



Question 8:

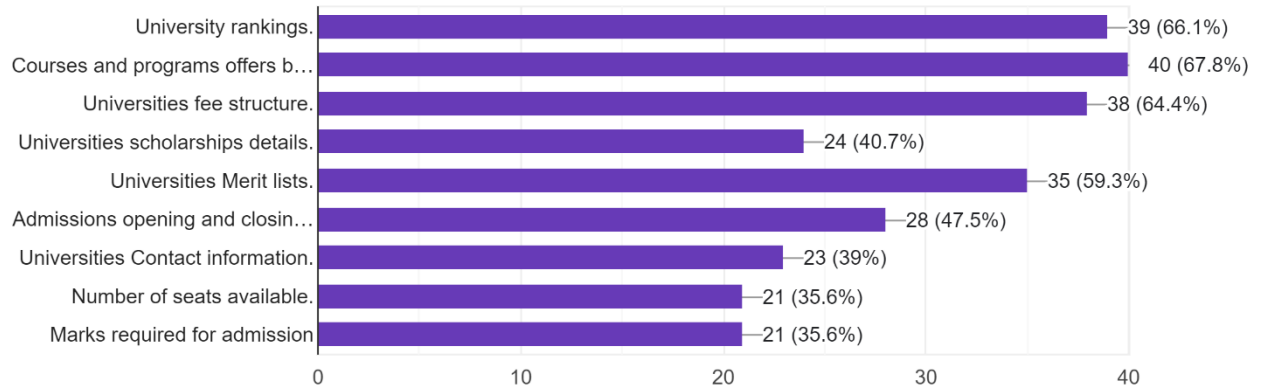
What information must be shown on dashboard? You can choose multiple options.

- ☐ University rankings.
- ☐ Courses and programs offers by universities.
- ☐ Universities fee structure.
- ☐ Universities scholarships details.
- ☐ Universities Merit lists.
- ☐ Admissions opening and closing details.
- ☐ Universities Contact information.
- ☐ Number of seats available.
- ☐ Marks required for admission

Response:

What information must be shown on dashboard? You can choose multiple options.

59 responses



Question 9:

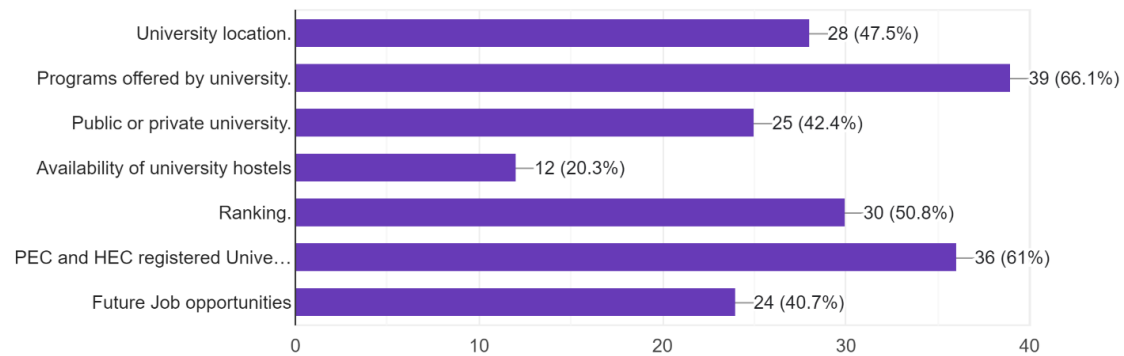
What would you prefer while choosing university? You can choose multiple answers. *

- ☐ University location.
- ☐ Programs offered by university.
- ☐ Public or private university.
- ☐ Availability of university hostels
- ☐ Ranking.
- ☐ PEC and HEC registered University
- ☐ Future Job opportunities

Response:

What would you prefer while choosing university? You can choose multiple answers.

59 responses



Question 10:

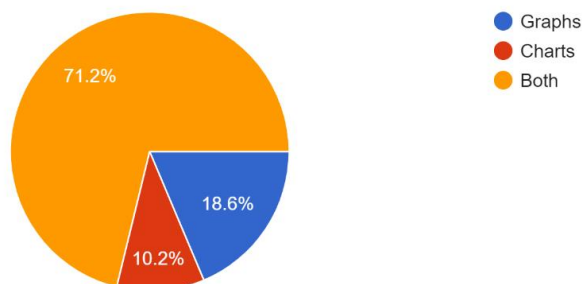
What kind of display would you prefer?

- ☐ Graphs
- ☐ Charts
- ☐ Both

Response:

What kind of display would you prefer?

59 responses



Question 11:

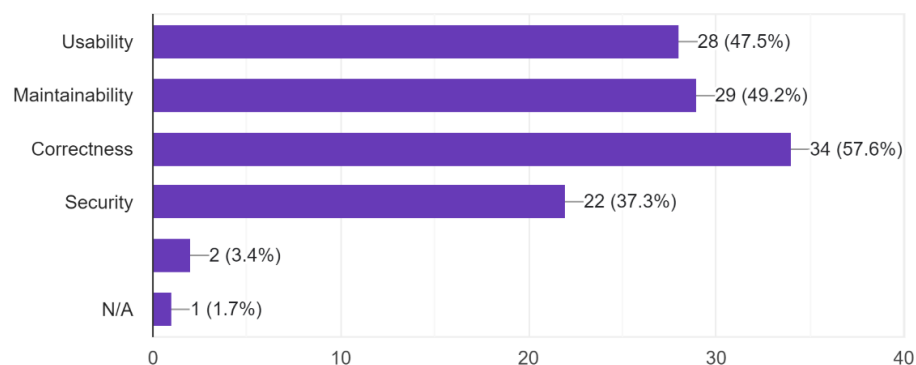
What attributes you want to see in the dashboard?

- ☐ Usability
- ☐ Maintainability
- ☐ Correctness
- ☐ Security
- ☐ Other...

Response:

What attributes you want to see in the dashboard?

59 responses



Requirements Gathered:

1. The dashboard should be easy to use and accessible to all stakeholders, including university administrators, researcher, students, and parents, government agencies, job seekers.
2. The dashboard should provide real-time data, insights and update data, enabling users to make informed decisions in a timely manner.
3. The dashboard should be accessible from mobile devices, allowing users to access the data and insights they need from anywhere, at any time.

4. The dashboard should use clear and concise data visualization techniques, such as graphs, charts, and maps, to make complex data easy to understand.
5. The dashboard should be customizable and configurable, allowing users to select the data and metrics that are most relevant to their needs.
6. The dashboard should be scalable and able to handle large amounts of data, ensuring that it can meet the needs of universities as they grow and evolve.
7. The dashboard should be supported by a team of technical experts who can provide assistance and support to users as needed.
8. The dashboard should provide secure access to sensitive data, such as stakeholders records and universities records, to ensure that the privacy and security of stakeholders and universities is protected.
9. The dashboard should be able to seamlessly integrate data from multiple sources, such as financial systems and universities databases.
10. The dashboard should provide correct and necessary details such as universities rankings, merit lists, fees structures etc.

Conflicting Requirements:

1. It can be difficult to provide a comprehensive and feature-rich dashboard and the need to control costs and stay within budget constraints.
2. It can be difficult to provide accurate and up-to-date data and the need to avoid overloading the dashboard with too much data.
3. It can be difficult to provide access to the dashboard to all stakeholders and the need to control who can access sensitive data while perform certain actions.
4. It can be difficult to provide advanced functionality and the need to ensure that the dashboard can be implemented within the available technical resources with constraints.

PERSONAS:

First Persona:

ALIA HASSAN

2ND YEAR MBBS STUDENT



Introduction and Objectives

AGE: 21
OCCUPATION: student
DEGREE: MBBS at DAW medical college Karachi.
She is highly motivated and goal-oriented, with a focus on completing her degree and advancing in her field. Alia is always eager to learn and takes advantage of every opportunity to expand her knowledge and skills.



Personality And Interests

In terms of her personal life, Jane is a bit of a homebody. She values her alone time and uses it to recharge after a long day of classes and research. She also enjoys reading and hiking, which provide a welcome escape from the demands of graduate school. When it comes to her studies, Alia is dedicated and hardworking. She spends time in the library, pouring over academic journals and conducting research for her thesis. She is well-respected by her professors and peers, who appreciate her insightful contributions to class discussions and commitment to academic excellence.





Motivation

She has always been a motivated and driven person who has her career goals set. However, she has been looking out for some good medical colleges in Islamabad as she is planning to make a shift with her families. She is hopeful and determined that she will be successful in this process.



Second persona:






SAMIA DANIEL

AGE
18

STUDENT

SOCIAL NETWORKS



PERSONALITY AND INTERESTS

Samia is an 18-year-old undergraduate student studying in 10th grade. She is outgoing, energetic, and always up for a good time. She enjoys meeting new people and is always the life of the party.

Samia's love for socializing extends to his involvement on campus. She is a member of several clubs and organizations and holds leadership positions in a few of them. She is known for his organizational skills.

JOBS AND ACTIVITIES


In addition to his busy schedule on campus, Michael also works part-time at a local coffee shop. He enjoys the opportunity to interact with customers and learn about their lives. He is also an avid gamer, often spending his free time playing online with friends.

MOTIVATIONS AND SKILLS

Despite many commitments, Samia prioritizes her studies and works hard to maintain good grades. She is well-liked by her professors and peers and is known for her positive attitude.

In terms of technology, Samia is tech-savvy and enjoys using her phone and other devices to stay connected with friends and family. She is also searching for best engineering institutes for her future.

Third persona:



SARA FARIS

28 • Marketing Manager


Interests

Sarah enjoys running and practicing yoga in her free time. She also loves to travel and explore new cultures. She is an avid reader and enjoys learning about new topics, especially in the fields of marketing and psychology.

Location

Islamabad

Frequently Used Apps



Bio

Sarah is a highly motivated and driven individual. She is creative and enjoys taking on new challenges. She is a natural leader and excels in managing and motivating her team. She is also very analytical and detail-oriented, always looking for ways to optimize her work and improve her results. While she is a hard worker, she also values work-life balance and makes sure to take time for herself and her loved ones.


Major Requirements:

1. Dashboard should provide courses, rankings, status (public or private), HEC and PEC registered, Fees structure, Merit lists and Scholarship opportunities.
2. Data provided on dashboard should be correct and updated.
3. Dashboard should be easy to use.
4. Dashboard should not show every information on single page.
5. Dashboard should be responsive and should be available on phone.

This university dashboard covered 1,2 ,3,4 points.

PROTOTYPE

Log In:



University Dashboard

Log In to Uni Dashboard

Enter your email and password below

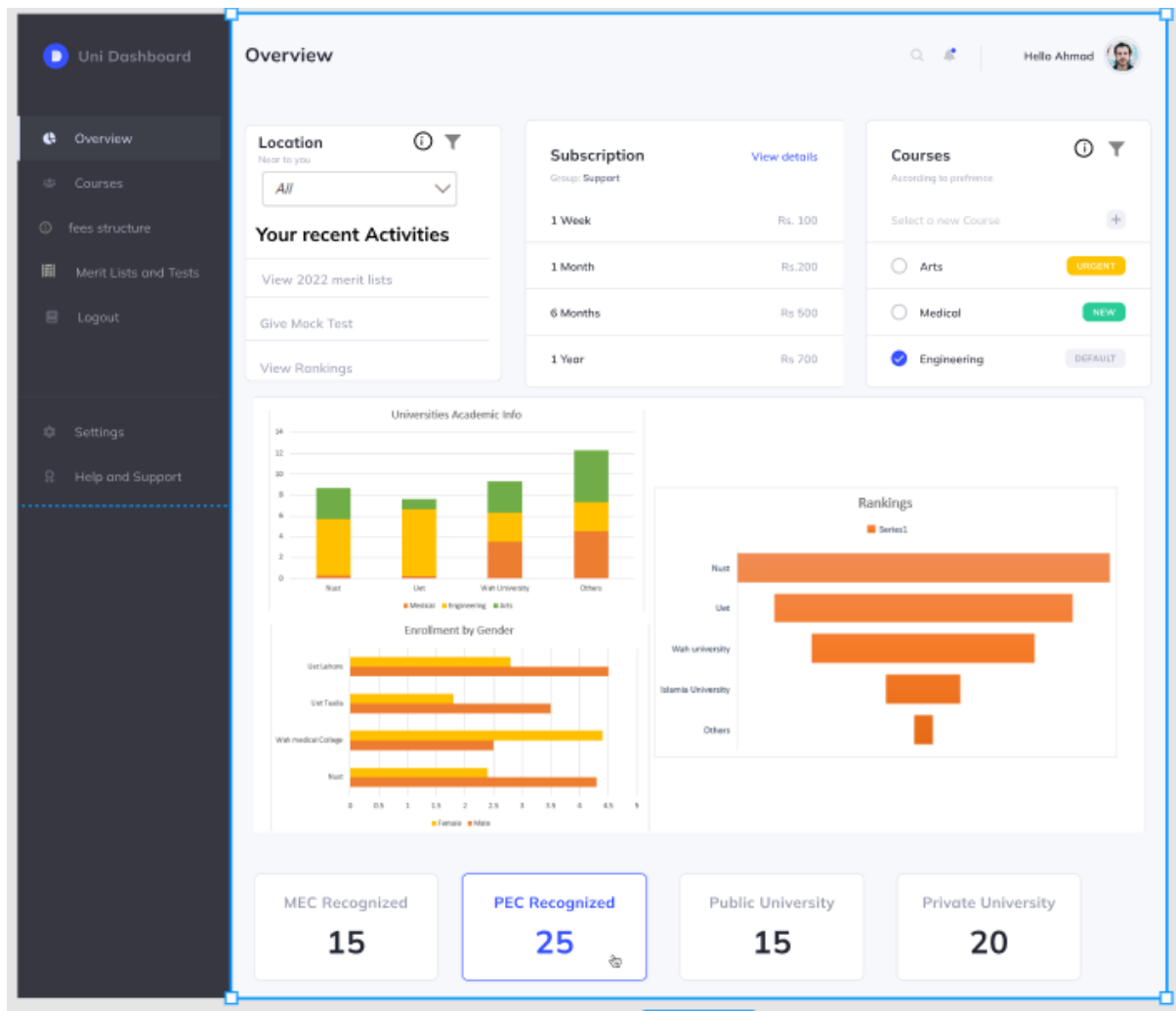
EMAIL

PASSWORD

[Forgot password?](#)

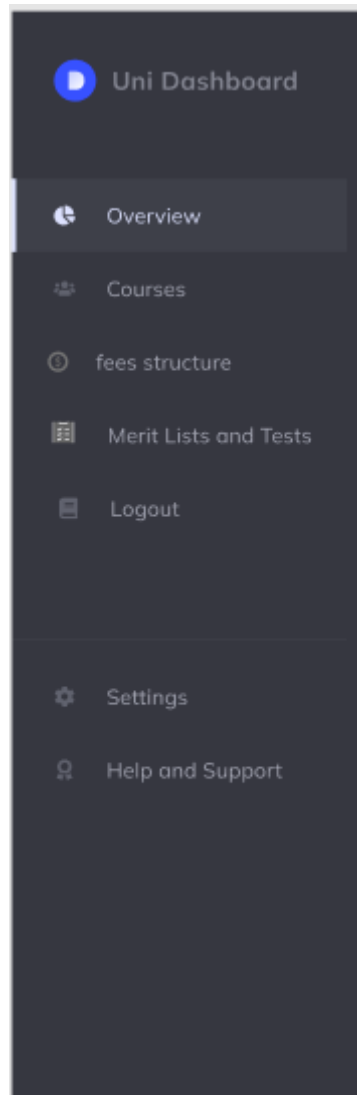
Don't have an account? [Sign up](#)

Overview:



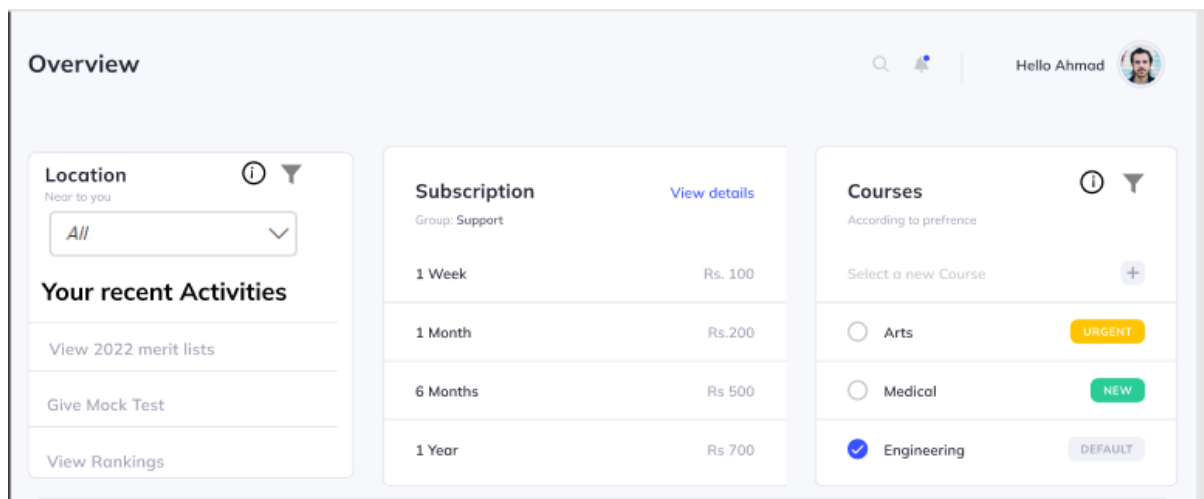
Part 1: Left Side

The selected page will be highlighted.



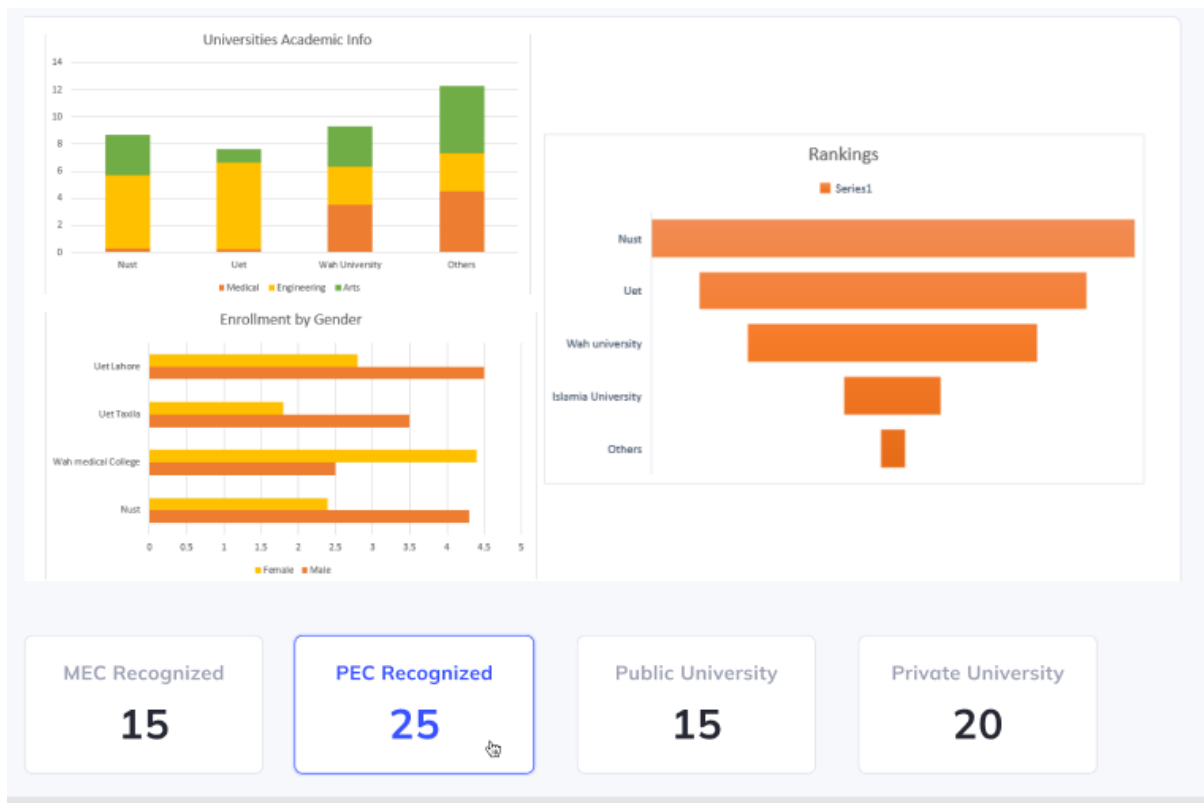
Part 2: (Upper part of the page Overview)

- It contains features like Location, Subscription and choice of courses.
- Location feature allows users to choose the location of universities near to their house.
- Subscription feature is provided to help the team working behind dashboard.
- Courses features is available to users to filter the University Dashboard according to their preferences. For example, if a student wants admission in engineering university, they can filter dashboard that will provide information accordingly.
- Courses features also have default, new and urgent buttons.
- For example, Student is confused about program they want to do. So, they can categorize their preferences and notification will be provided according to them.
- Record of recent activities is provided by University Dashboard.



Part 3: (Lower part)

- This provides graphical view of collective data of universities such as their rankings, Academic information, Gender enrollment etc.
- According to Survey, One and foremost requirement is that dashboard should tell how many and which universities are affiliated with PEC, HEC and also their statuses (public or private).



Courses: Second page

- Universities name are written on left side of the page, in the middle Courses provided by those universities, in the right Universities Ranking is provided according to their programs offers.
- High ranking shows excellent opportunities and studies in those programs.
- Low ranking shows below average.
- Normal means okay and fine.
- Data will be filter, updated and sorted as information changes.

Dashboard Kit

Overview

Courses

Fee and Scholarship

Merit Lists and Tests

Logout

Settings

Help and Support

Courses

Search

Notifications

Hello Ahmad!

All Courses

Sort

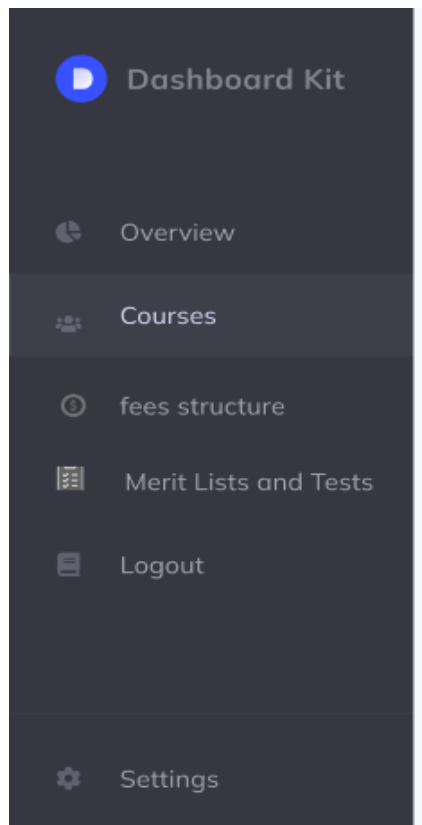
Filter

Universities details	Courses name	Ranking
<div></div> <div><div>Nust</div><div>Updated 1 hour ago</div></div>	<div>BSC Engineering</div> <div>on 24.05.2022</div>	<div>HIGH</div> <div>5.0</div>
<div></div> <div><div>Nust</div><div>Updated 1 hour ago</div></div>	<div>BSC Business</div> <div>on 24.05.2022</div>	<div>HIGH</div> <div>5.0</div>
<div></div> <div><div>Nust</div><div>Updated 1 hour ago</div></div>	<div>BSC Architecture</div> <div>on 24.05.2022</div>	<div>LOW</div> <div>5.0</div>
<div></div> <div><div>UET Taxila</div><div>Updated 2 hour ago</div></div>	<div>BSC Maths</div> <div>on 24.05.2022</div>	<div>NORMAL</div> <div>5.0</div>
<div></div> <div><div>UET Taxila</div><div>Updated 2 hour ago</div></div>	<div>BSC Engineering</div> <div>on 24.05.2022</div>	<div>HIGH</div> <div>5.0</div>
<div></div> <div><div>Quaid - e-Azam</div><div>Updated 3 hour ago</div></div>	<div>BSC Business</div> <div>on 24.05.2022</div>	<div>HIGH</div> <div>5.0</div>
<div></div> <div><div>Wah Medical College</div><div>Updated 4 hour ago</div></div>	<div>BSC Engineering</div> <div>on 24.05.2022</div>	<div>LOW</div> <div>5.0</div>
<div></div> <div><div>Wah Engineering College</div><div>Updated 1 day ago</div></div>	<div>BSC Medical</div> <div>on 23.05.2022</div>	<div>NORMAL</div> <div>5.0</div>





Rows per page: 8

1-8 of 1240

Part 1:





Part 2:

All Courses			Sort	Filter
Universities details	Courses name	Ranking		
 Nust Updated 1 hour ago	BSC Engineering on 24.05.2022	HIGH	...	
 Nust Updated 1 hour ago	BSC Business on 24.05.2022	HIGH	...	
 Nust Updated 1 hour ago	BSC Architecture on 24.05.2022	LOW	...	
 UET Taxila Updated 2 hour ago	BSC Maths on 24.05.2022	NORMAL	...	

Part 3:

The bottom shows rows per page, and amount of information per pages available.

 UET Taxila Updated 2 hour ago		BSC Engineering on 24.05.2022	HIGH	
 Quaid - e-Azam Updated 3 hour ago		BSC Business on 24.05.2022	HIGH	
 Wah Medical College Updated 4 hour ago		BSC Engineering on 24.05.2022	LOW	
 Wah Engineering College Updated 1 day ago		BSC Medical on 23.05.2022	NORMAL	
Rows per page: 8 ▾ 1-8 of 1240 < >				

Fee and Scholarship:

Fee and Scholarship of irrespective university can be view.

Dashboard Kit

Overview

Courses

Fee and Scholarship

Merit Lists and Tests









Logout

Settings

Help and Support





Fee and Scholarship

SortFilter






Universities details	Courses name	Fee and Scholarship
<div></div> <div>Nust Updated 1 hour ago</div>	BSC Engineering on 24.05.2022	<div>VIEW</div> <div>0/0</div>
<div></div> <div>Nust Updated 1 hour ago</div>	BSC Business on 24.05.2022	<div>VIEW</div> <div>0/0</div>
<div></div> <div>Nust Updated 1 hour ago</div>	BSC Architecture on 24.05.2022	<div>VIEW</div> <div>0/0</div>
<div></div> <div>UET Taxila Updated 2 hour ago</div>	BSC Maths on 24.05.2022	<div>VIEW</div> <div>0/0</div>
<div></div> <div>UET Taxila Updated 2 hour ago</div>	BSC Engineering on 24.05.2022	<div>VIEW</div> <div>0/0</div>
<div></div> <div>Quaid - e-Azam Updated 3 hour ago</div>	BSC Business on 24.05.2022	<div>VIEW</div> <div>0/0</div>
<div></div> <div>Wah Medical College Updated 4 hour ago</div>	BSC Engineering on 24.05.2022	<div>VIEW</div> <div>0/0</div>
<div></div> <div>Wah Engineering College Updated 1 day ago</div>	BSC Medical on 23.05.2022	<div>VIEW</div> <div>0/0</div>

Rows per page: 81-8 of 1240

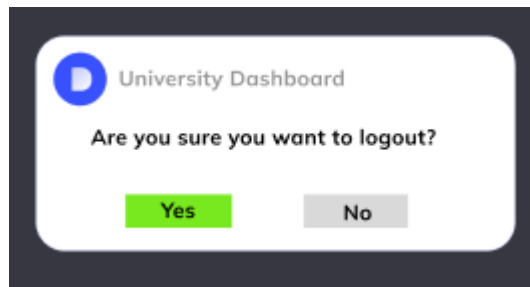
Part 1:

Fee and Scholarship			17 Sort	Filter
Universities details	Courses name		Fee and Scholarship	
 Nust Updated 1 hour ago	BSC Engineering on 24.05.2022		VIEW	...
 Nust Updated 1 hour ago	BSC Business on 24.05.2022		VIEW	...
 Nust Updated 1 hour ago	BSC Architecture on 24.05.2022		VIEW	...
 UET Taxila Updated 2 hour ago	BSC Maths on 24.05.2022		VIEW	...

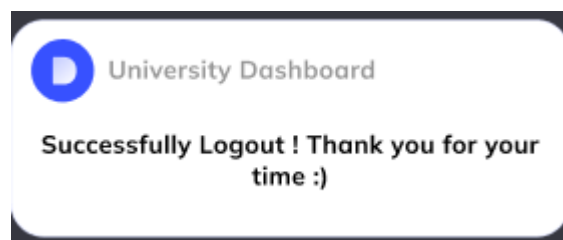
Part 2:

 UET Taxila Updated 2 hour ago		BSC Engineering on 24.05.2022	VIEW	...
 Quaid - e-Azam Updated 3 hour ago		BSC Business on 24.05.2022	VIEW	...
 Wah Medical College Updated 4 hour ago		BSC Engineering on 24.05.2022	VIEW	...
 Wah Engineering College Updated 1 day ago		BSC Medical on 23.05.2022	VIEW	...
Rows per page: 8 1-8 of 1240 < >				

Log Out:



Successfully log out message:



EVALUATION

Evaluators:

In the evaluation of our university dashboard prototype, the major focus groups who evaluated and gave feedback about the interface experience were the student groups who were users of such dashboards, the experienced groups of people who are developers and users of dashboards and future users of the dashboards. They respond to and use the prototype and give valuable feedback. Through which the evaluation is carried out. The evaluators are given the initial background and use of the dashboard and clearly briefed that evaluation is to be done with respect to a prototype and not the actual system. They are provided with the user personas (described earlier) as well.

Out of the total 20 participants who were involved in evaluation, the age groups of the people involved are:

- 10 individuals of ages 15-20
- 5 individuals of ages 21-25
- 5 individuals of ages 25-40

The individuals were divided into three respective focus groups for the evaluation process.

Tasks Assigned:

Task 01: Open the dashboard and login yourself.

Task 02: Choose the preferable courses and filter the dashboard.

Task 03: Go to the courses page and view the courses.

Task 04: Select the location you want to prefer more for your undergraduate studies.

Task 05: Refresh the page.

Task 06: Check for notification.

Task 07: View Fee and Scholarship provided by Quaid-e-Azam university.

Task 08: Log out yourself.

Environment:

The environment used is the controlled environment. Where the user sat in front of the evaluator on a chair and on a screen could use and interact with the prototype. The user used the dashboard and continuously recorded feedback during the using and after he has gone through the entire prototype. All this is recorded and there is no external involvement of opinion or feedback from anyone else during the recording process.

Techniques:

Majorly the process used for evaluation is through the **Neilson's Heuristics**.

Visibility of the system's status. Users should be given feedback on what is happening within a reasonable timescale.

Match between the system and real world. Information should be presented in a means familiar to the user including language and conventions rather than terms developed for the system. Information should be presented in a logical order.

User control and freedom. Users make mistakes. There should be an "emergency exit" which is easy to find and exit the current system state without having to jump through hoops. Undo and redo functions are essential.

Consistency and standards. Words, actions, situations, etc. should always mean the same thing and users should be able to understand that.

Error prevention. Preventing error is better than clear error messages. Eliminate error conditions or make users aware that they may be about to occur and ask them if they want to proceed.

Recognition rather than recall. Reduce the load on a user's memory. Make actions, options, and objects visible. Users shouldn't have to remember things from one screen to the next. Instructions should be easy to access when needed.

Flexibility and efficiency of use. The use of accelerators, where appropriate, may be invisible to new users but improve the efficiency of use for experienced users. Actions could be customized by users.

Aesthetics and minimalist design. Dialogue should not give irrelevant or rarely useful information. The more data in dialogue the more it diminishes the overall visibility of individual points for the user.

Help users recognize, diagnose and recover from error. This means error messages should be in clear language and avoid the use of codes. They should explain the problem and offer a solution to that problem.

Help and documentation. The best approach is to construct a system which needs no help or documentation but if it is necessary – it should be easy to search, be based on the tasks the user wishes to execute, offer concrete steps to follow and be kept to a minimum.

The evaluation is done with keeping in mind these heuristics and they are explained to the focus groups as well. The prototype is analyzed and then results are generated.



FEEDBACK AND USER EXPERIENCE:

After the interview sessions we had some suggestions and feedback from the participants which helped in the evaluation process. These are enlisted below:

- The major feedback from the users through this interview process was that 5 out of 20 people could not read subtext written below headings in the dashboard. It was not visible due to light color and small text size
- The users that is almost 10 out of the 20 complained that some of the features of the dashboard were not convenient for example they could not download fee structure

files and documents from the dashboard if they want to keep them in their systems for later.

- A positive feedback however was this that the dashboard is helpful and provides detailed information of various features. Certain headings have an option with them which gives further details about that feature for better understanding.