

Final report for the software tool to handle student requests.

Group Name: Exceptions

Group Members:

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Available products/tools and their strengths and limitations.

There are some products/tools available to solve this problem. They are not developed only for this problem. Among them, the most familiar tools are Gmail, Moodle. Gmail is a widely used platform for mailing purposes. Even though it has some potential qualities, it is not the best solution for our problem.

Strengths

- Gmail is a common free source.
- As Gmail is maintained by Google, it is a safe and reliable platform.
- Gmail supports any kind of attachment with the mail (e.g.: image files, pdf files, video files), which helps students to submit original evidence for their request.
- We can view the cached version of the inbox even if there is no internet connection.

Limitations

- Gmail is not a specific platform for our unique purpose.
- It is difficult for the lecturer to identify students by their department, batch, module, type of issue.
- It is difficult for the lecturer to keep track of each student's issues.
- Students cannot view the current status of their requests.

Moodle also has a messaging feature. This feature is used to report any issues or any doubts. Even though it is very useful for students, it can be improved with some features. There are some strengths and limitations of it below.

Strengths

- It is easy for users to send the message to a specific person.
- It is easy for the lecturer to identify students by their department, batch, module.
- When receiving any messages, it notifies the webmail.

Limitations

- It supports text messages only. Students can't attach an image or document.
- Users had to log in to their Moodle account to use it.
- Users can't check whether their message has been seen yet and the request is accepted or not.
- Staff can't keep track of each student's issues.

A detailed description of the design and implementation of the product.

In this course, we are required to design and develop a software tool to handle student requests. The development of the product was not easy as we thought.

First, we found the appropriate type of software tool for this problem. Our software tool has convenience for staff and students. So, it can be accessed through any device easily. Our software tool has user accounts and students can send requests to staff. So, our software tool should be web-based. Therefore, we chose a web application to demonstrate our solution.

First, we need to plan what we are going to do. Hence, we can get a clear image of our project. We can easily explain and discuss our design among us. For this purpose, we created a wireframe for our web application. We used Balsamiq (wireframe software) to create our wireframe.

As we are beginners first we need to study new techniques. Therefore, we used an online platform to study those things and we asked help from resourced friends or seniors to clarify our major doubts.

The front-end development was easy thus we were able to make it quickly. The web application is a client-side and server-side software application. It generates dynamic Web pages containing various types of a markup language like HTML, XML. We use HTML (HyperText Markup Language), CSS (Cascading Style Sheets), Bootstrap for frontend since we are beginners.

In front-end development, we decided to use a two-color user interface since we design products for educational purposes. Therefore, we chose the black and white theme. For the logo, we chose the logo of primary school which one of our team members studied.

We fixed it as the user account registration process can be only done by the admin because the product is only limited to members of a specific institute. And we created an admin page to add

users manually and by uploading a file that containing the required details of all users. Admin can inform user id and password to members after creating a user account. Then any type of user can log in and then change their password and profile details.

We created a home page for students and staff that consist of request and sorting options in the sidebar. We created the staff's home page with additional sorting features such as approval status, type of request, and students index number as we required.

We created send "request page" for students. Here students can fill a form and submit a new request. In the form, there are fields for the student to,

- View their name and the index number.
- Select the type of request.
- Type the details of the request.
- Upload any files containing evidence.

We created a "view request" page for students and staff. Here students/staff can view details of sent request/received request. Here staff can Select each student request, view all the relevant details and approve it, decline it, or request missing information from the student as appropriate and make comments on the student request so that the student can see and reply. Here students can view the status of each request already submitted by the student and reply to any comments made by the academic staff on the particular request. The student could only be able to view requests submitted by him/her and not be able to view requests submitted by others.

We created a simple comment box system in a "view request" page for communication between staff and students to ask for additional information. Here all comments regarding a given request are shown in a single thread.

We created two pages "Edit profile" and "Change password" that containing forms for editing profile details and password.

As student account and staff accounts have some pages with similar wire-frames we first coded the student account, then copied the codes and modified it to create a staff account.

In this project, we use PHP as a server-side language and MySQL as a database management system as the most used backend language on the web. It is easier to learn and use. It supports many databases. And it is an object-oriented language. so for this project, we chose PHP as a server-side language. MySQL is a very simple fundamental database system. But it is so much powerful. So, we choose MySQL.

We do back-end development parallelly with front-end development. When we doing the back-end we modified the wire frame of the project to make it convenient in some aspects. After finishing all works we host our application on the free server. Then we made some modifications by considering the opinions of our team members.

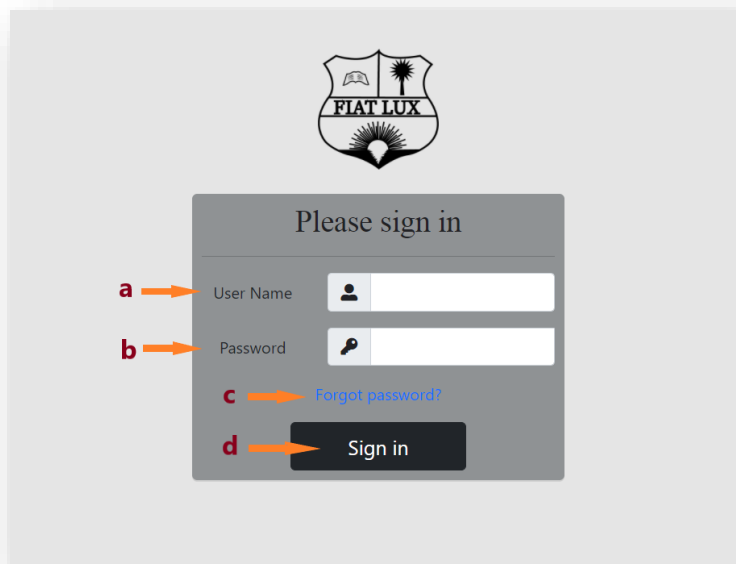
Challenges we faced during the project and how we handled them.

- The sidebar occupies half of the page in smartphone view for that we use the toggle button to hide the sidebar when shrinking the page.
- We face a problem while creating a login page to make the login box vertically and horizontally center. Here we used flexbox to solve the problem.
- The main problem is here to use responsive. For that, we used media queries and refer bootstrap responsive classes also.
- On the login page, we used an icon for username and password. We get icons from the font-awesome website. We create an account in font-awesome to generate our CDN.
- Then we used our account package in website designing. We used the grid in add request page to get the perfect layout.
- We need some validations in form for this we use some JavaScript codes.
- We need to add users to the application, so we created a simple admin page.
- We need to display multiple requests on the same page, so we created breadcrumb.
- We need to hide unchangeable options such as index number, the name so we marked them as disabled.
- We need to send a notification to the user if he receives any comments or requests, so we use a notification bell for this purpose.
- Sorting with an index number, name, and request type was harder. We used the get method using URL to receive data and we brought that feature.
- Database table management was complex. We have to design interfaces for both teachers and students. So, the table design was looked harder. But we made a common table named request. It solved all problems.
- Making the log-in system secure was the big issue. Making a log-in system is easier but for security, we want to make it stronger. We used blind parameters and other types of security methods for PHP for offering better security.
- Pagination: We didn't use any plugins for paginations. We coded the paginations on PHP. this was harder. We used the get URL method to add this.
- Marking read and unread and ordering was harder. We used special SQL code to fix this.

A user manual for our product.

User manual

Sign-in page of teacher and student



The image shows a sign-in page for a system. At the top center is a logo featuring a shield with a book and a sun, with the text "FIAT LUX" below it. Below the logo is a dark gray box with the text "Please sign in" in white. Inside this box, there are two input fields: "User Name" and "Password". To the left of the "User Name" field is a red letter "a" with an orange arrow pointing to the field. To the left of the "Password" field is a red letter "b" with an orange arrow pointing to the field. Below the "Password" field is a red letter "c" with an orange arrow pointing to a blue link that says "Forgot password?". At the bottom of the box is a dark gray button with the text "Sign in" in white. To the left of this button is a red letter "d" with an orange arrow pointing to the button.

a- user name of the user should be given in this field.

b- password of the account should be given in this field.

c- By clicking this users can get help from the system if they don't remember their password.

d- If the username and the correct password are given user can log into their account.

Homepage of teacher



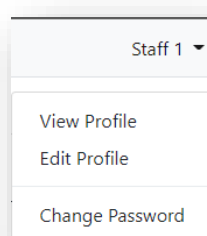
A)



1 - To extend and hide the sidebar.

2 - By clicking this home icon teacher will be directed to his/her home page.

B)



1- By clicking this icon staff will see a drop-down list as shown above where they can see their account information and settings, and edit them.

The screenshot shows a web form titled "Your profile details". It contains several input fields for user information. A red rectangular box highlights the "Email", "Phone NO", "Address", and "Zip" fields, indicating they are editable. Below the highlighted fields is a "Change details" button.

Field	Value
User ID	1
Full Name	Gihan Dias
Account type	Teacher
Email	shanmathujan@gmail.com
Phone NO	2147483647
Address	Keraliwathai Road,
Zip	43355

Change details

It shows the user's details.

Only the user can edit details in the red box.

After the user edit, the details, click the Change details icon to save them.

There is a separate option that directs them to the page where they can change their password.

Use the form below to change your password.

a → Current Password

b → New Password

c → Repeat New Password

d →

e →

a- Enter the current password in the given box.

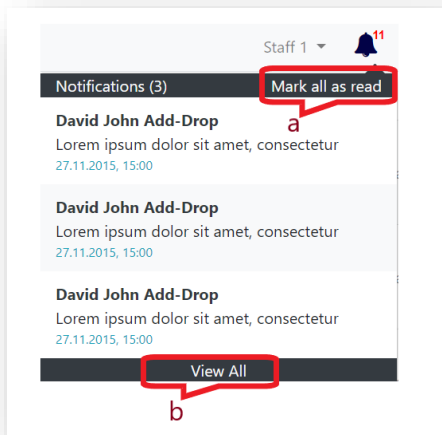
b- Enter the new password in the given box.

c- Again enter the new password correctly.

d- After filling the given boxes, click this icon to change the password.

e- By clicking this icon user can go to the home page.

2- By clicking this icon staff will see a dropdown list as shown below. The small number above the bell icon indicates the number of unread notifications.



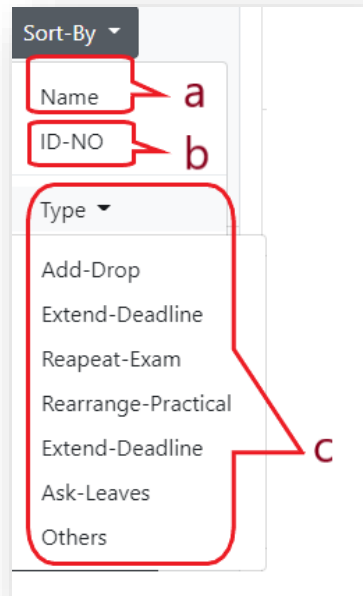
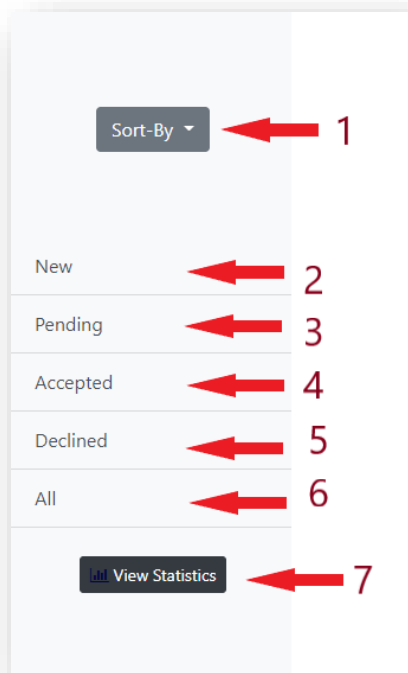
a- mark every notification as read and the small number above the bell icon disappears.

b- Staff can view all the notifications.

3- Help icon to direct staff to the page where they can get solutions for problems.

4- Staff will get logged out from the system.

C)



1- Staff can sort out requests by students' name(a) or students' ID(b) or by the type of issues(c).

2- To view the new requests

3- To view the pending requests

4- To view the accepted requests.

- 5- To view the declined requests.
- 6- To view all requests.
- 7- By clicking this staff can view the statistical representation of all the requests.

D) Shows all the requests where new requests appear first.

Student 1	-	Add-drop
Lorem ipsum dolor sit amet consectetur adipisicing elit. Praesentium impedit molestias saepe recusandae quas enim culpa, incidunt tenetur quidem tempora, fugiat vero ducimus voluptas! Ab corporis eveniet corrupti dolores iusto.		
Student 2	-	Extend-Dead line
Lorem ipsum dolor sit amet consectetur adipisicing elit. Praesentium impedit molestias saepe recusandae quas enim culpa, incidunt tenetur quidem tempora, fugiat vero ducimus voluptas! Ab corporis eveniet corrupti dolores iusto.		
Student 3	-	Repeat-Exam
Lorem ipsum dolor sit amet consectetur adipisicing elit. Praesentium impedit molestias saepe recusandae quas enim culpa, incidunt tenetur quidem tempora, fugiat vero ducimus voluptas! Ab corporis eveniet corrupti dolores iusto.		

By clicking a request, the user can see the details about this request.

Student 1 - Add-drop

ID-NO : 1900xx
Year : 2
Course : Engineering

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Magni quis numquam id asperiores odio rerum, illum eligendi veniam? Odit autem animi earum officiis rerum ut ipsam molestiae culpa consequatur tenetur dolor reprehenderit, pariatur nulla deserunt saepe optio possimus placeat quas ex a temporibus non iure dignissimos magnam? Minima, perspiciatis illo ipsam unde sapiente exercitationem! Veritatis possimus fugiat officiis, reiciendis dolorem quas eius repellendus dicta? Totam, dolores fugit, animi deserunt sint nemo doloribus, magni sequi sapiente incidunt aperiam autem nostrum repudiandae eum reprehenderit. Obcaecati quis maiores accusamus. Molestias itaque veritatis ratione dolore velit, fugit atque at culpa mollitia id totam voluptas facilis sequi magnam, quibusdam voluptatibus? Corporis corrupti quo similique quisquam beatae, placeat dolores explicabo illo hic at, maiores ullam nemo minus voluptates distinctio quod velit fuga, quam deserunt tenetur officiis temporibus praesentium quae? Nesciunt, provident vel perferendis autem ut rem quas. Fugit molestias recusandae quaerat, consequuntur unde quos tempore adipisci!

image.png

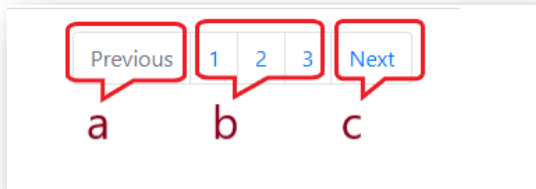
Accept

Decline

- a- Shows the name of the student and the request type.
- b- Button to delete the request.
- c- Shows the details of the student which he/she submitted.
- d- Request details and explanations submitted by the students appear in this box.
- e- The evidence submitted by the student to support his/her request.

- f- To accept the request.
- g- To decline the request.

E)



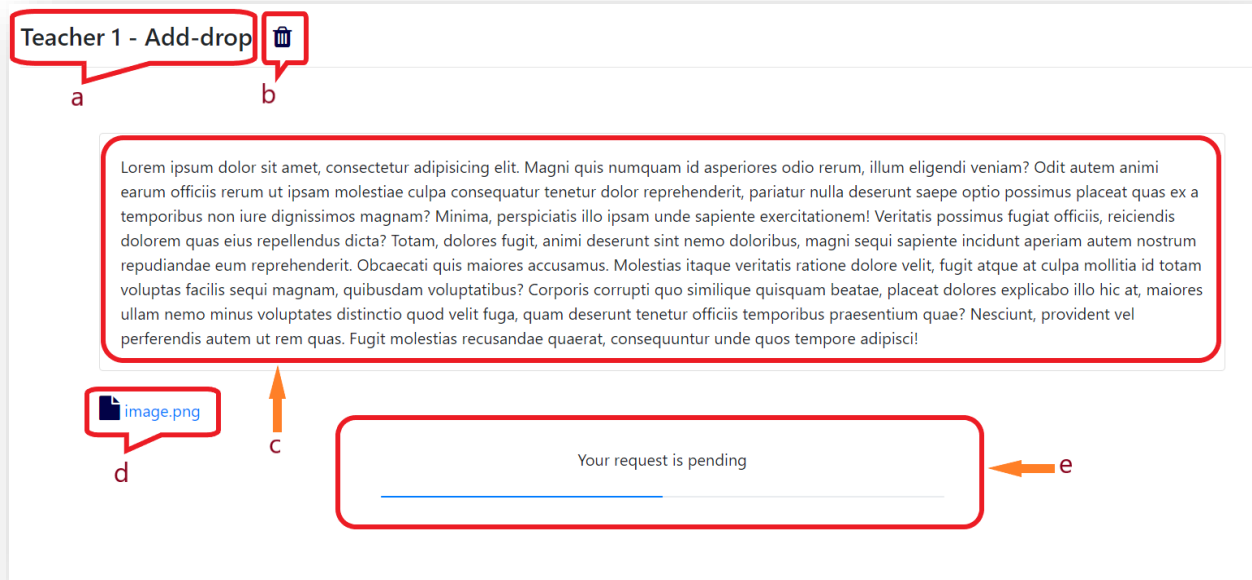
- a- Can go to the very previous page.
- b- Can select a specific page
- c- Can go to the very next page

Home page of student



1- Students will be directed to the page to submit their request with evidence. (Add request page is given -in next page)

2- Students can view their submitted requests in chronological order (newest to oldest). By clicking a request, the user can see the details about this request.



- a- The submitted request type and the teacher to whom the request was made.
- b- Button to delete the request.
- c- Details submitted by the student.
- d- The evidence submitted by the student to support his/her request.
- e- Request progress bar.


3- Students can view all the requests they have submitted in the past.

4- Students can particularly view the pending requests.

5- Students can particularly view the accepted requests.

6- Students can particularly view the declined requests.

Add Request page



+

Add Request




All

Pending

Accepted

Declined

Student 1



TO

Staff

ID No

Name

Request Type

Add-Drop

Year

1

Course

Engineering

Detail

Total word count: 0 words. Words left: 150

Upload any required documents

Choose Files

No file chosen

Submit Request

1 → TO Staff

2 → ID No

3 → Name

4 → Request Type Add-Drop

5 → Year Course Engineering 6

7 → Detail

Total word count: 1 words. Words left: 149

8 → Upload any required documents

Choose Files

No file chosen

9 → Submit Request

1- Students can select staff from all the staff in contact with him/her in the current semester, and this list will keep changing automatically each semester.

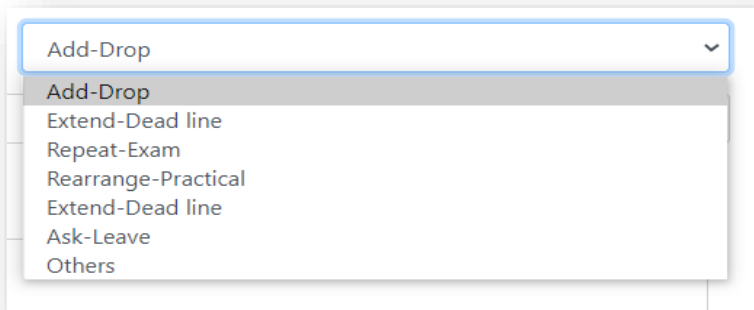
Staff

- Staff
- Staff 1
- Staff 2
- Staff 3
- Staff 4
- Staff 5
- Staff 6

2- Students should provide their ID number in this field.

3-Students should provide their name in this field.

4- Students can select a request type from the common request types, and if it is not in the list they can simply click the other option.



A dropdown menu with a blue border and a downward arrow on the right. The menu is open, showing a list of options. The first option, 'Add-Drop', is highlighted with a grey background. The other options are 'Extend-Dead line', 'Repeat-Exam', 'Rearrange-Practical', 'Extend-Dead line', 'Ask-Leave', and 'Others'.

- Add-Drop
- Add-Drop
- Extend-Dead line
- Repeat-Exam
- Rearrange-Practical
- Extend-Dead line
- Ask-Leave
- Others

5- Students should select their year of study in this field.

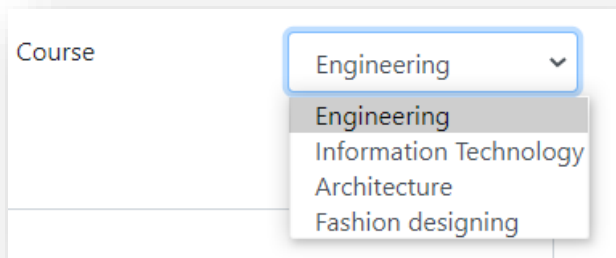


A form field with the label 'Year' on the left and a dropdown menu on the right. The dropdown menu is open, showing the number '1' as the selected option.

Year

1

6- Students should select their course in this field.



A form field with the label 'Course' on the left and a dropdown menu on the right. The dropdown menu is open, showing a list of options. The first option, 'Engineering', is highlighted with a grey background. The other options are 'Engineering', 'Information Technology', 'Architecture', and 'Fashion designing'.

Course

Engineering

Engineering

Information Technology

Architecture

Fashion designing

7- Students should provide the reasons and details for their requests.

8- Students can provide any evidence to support their request.

9- Students can submit their requests by clicking this button.

Individual Team Member Responsibility.

We are going to do everything together, but we have given the responsibility of completing different tasks to different people so that they will make sure that it will get done.

Design, test, and demonstration	-	T.Sakeerthan
Student's front end development	-	S.Ashokkumar
Staff's front end development	-	K.Aravinthan
Student's back end development	-	S.Gopinath
Staff's back end development	-	S.Kandeeban