1. Brainstorming Session Execution
   1. Implementation Details

* Format: Kano model
* Distribution Method: 10-minute per sessions
* Response Period: May 12, 2025
* Participants: Lai Joon Li (Facilitator), Tan Jun Xian (Student), Soukmead Ong Yu Kang(Student) and Eng Wei Jiun (Student)
* **Tools Used: Discord meeting**
  1. Session Structure

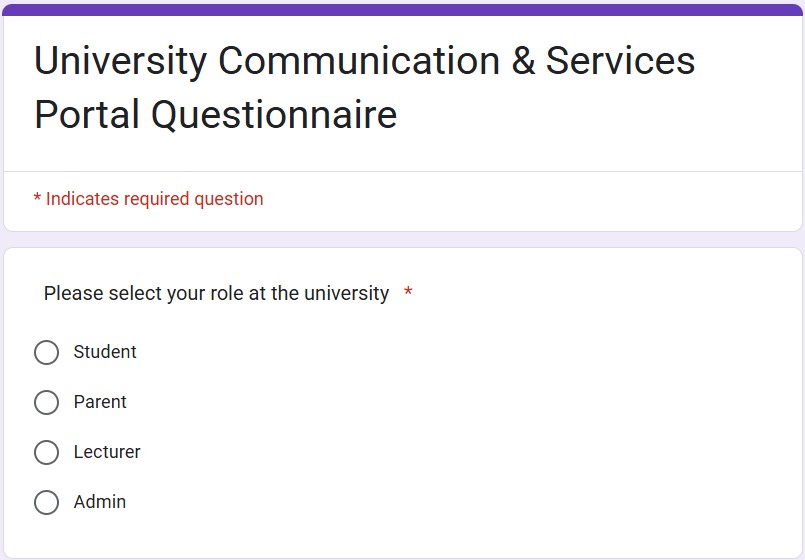


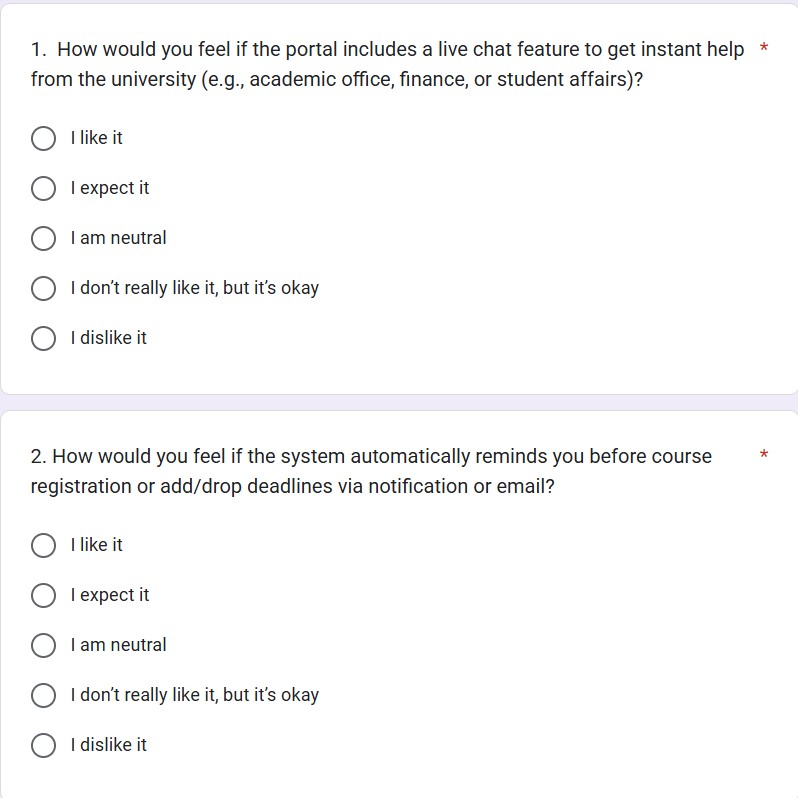
Figure 1:Brainstorming meeting

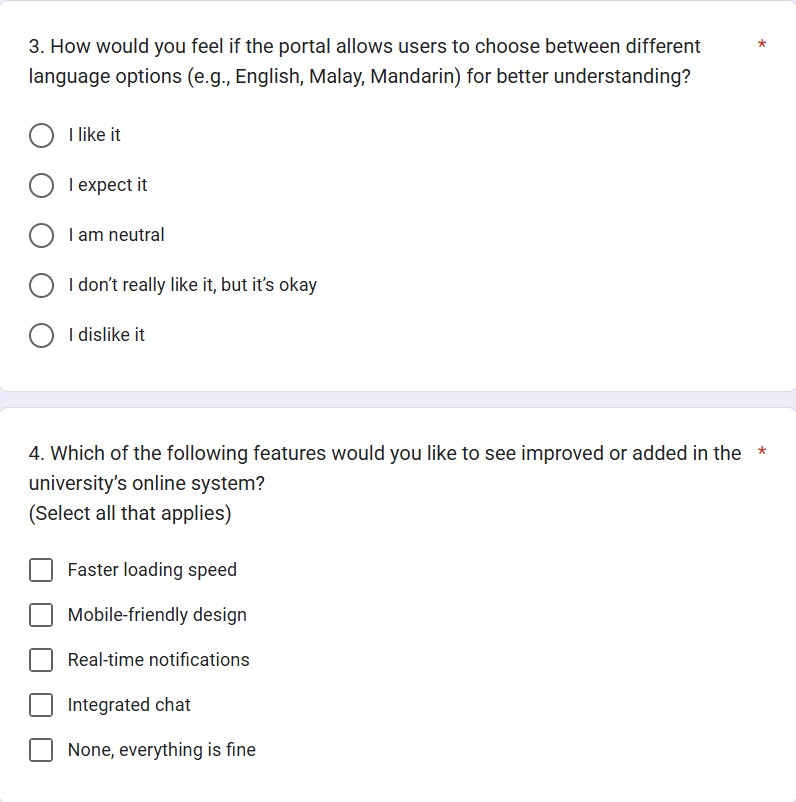
<https://mmuedumy-my.sharepoint.com/:v:/r/personal/tan_jun_xian_student_mmu_edu_my/Documents/2025-05-12%2021-37-39.mkv?csf=1&web=1&e=CZPjU5>

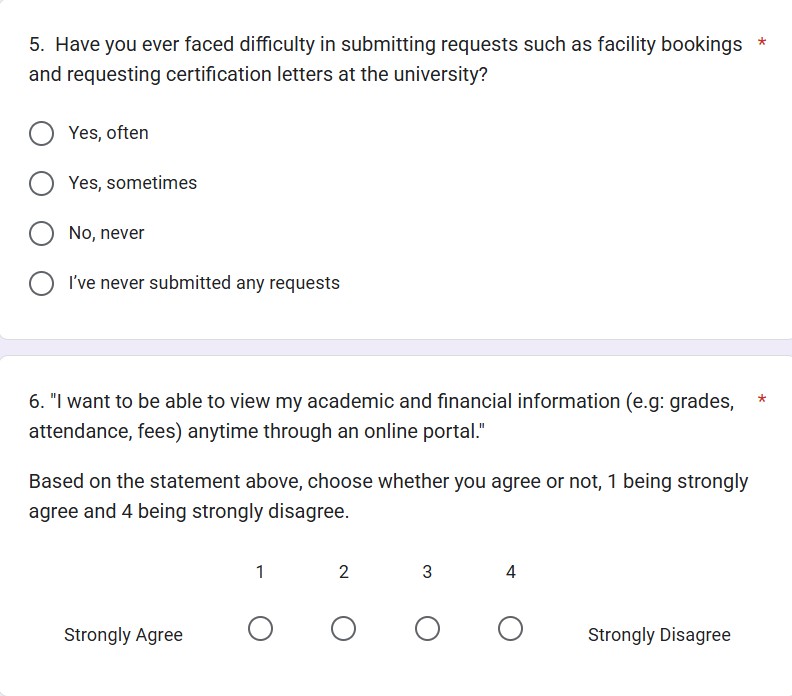
1. Questionnaire Execution
   1. Implementation Details

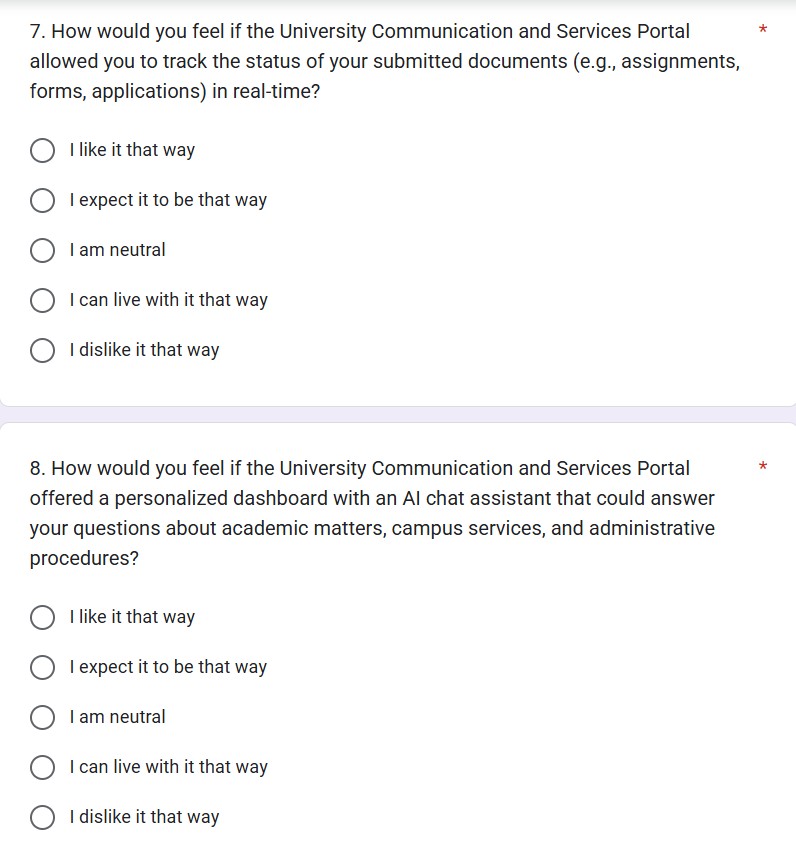
* Platform Used: Google Forms
* Distribution Method: University email lists
* Response Period: 6 days (May 9-13, 2025)
* Total Respondents: 26
  + Students: 14
  + Lecturer: 6
  + Administrators: 2
  + Parents: 4
  1. Sample Questionnaire

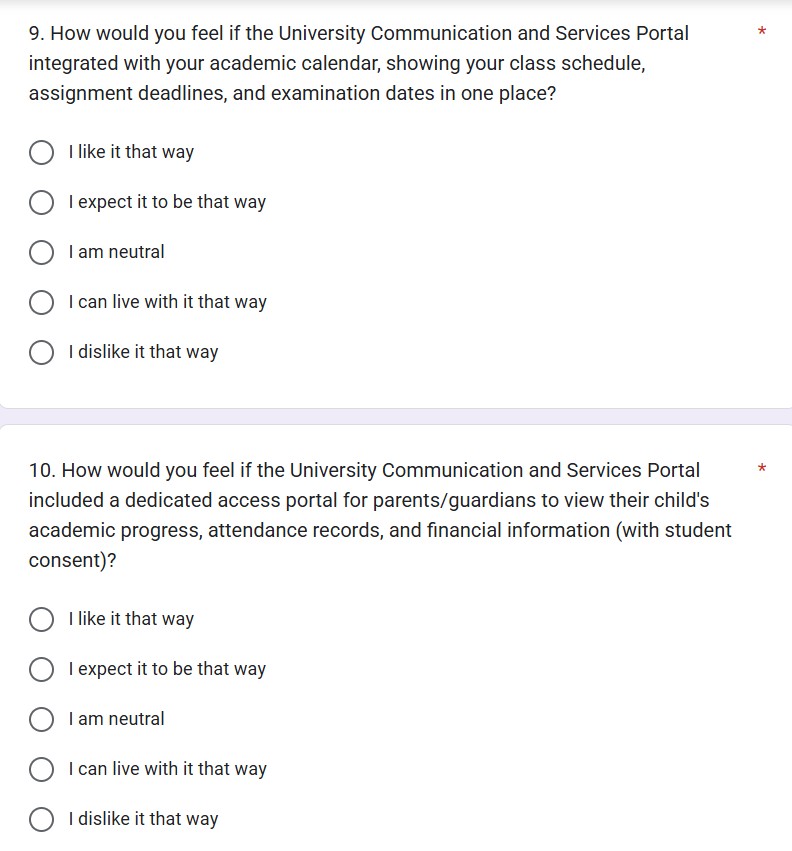












1. Prototyping Plan
   1. Implementation Details

* Tools Used: Figma
* Testing Period: 17 May -21May 2025
* Total participants: 10
  + Students: 10
  1. Sample Prototype Visuals
* Login pages

Figure 3.2.1 displays the Login Pages, it is designed to save login credentials in cookies, so that students do not need to enter their username and password each time they log in.

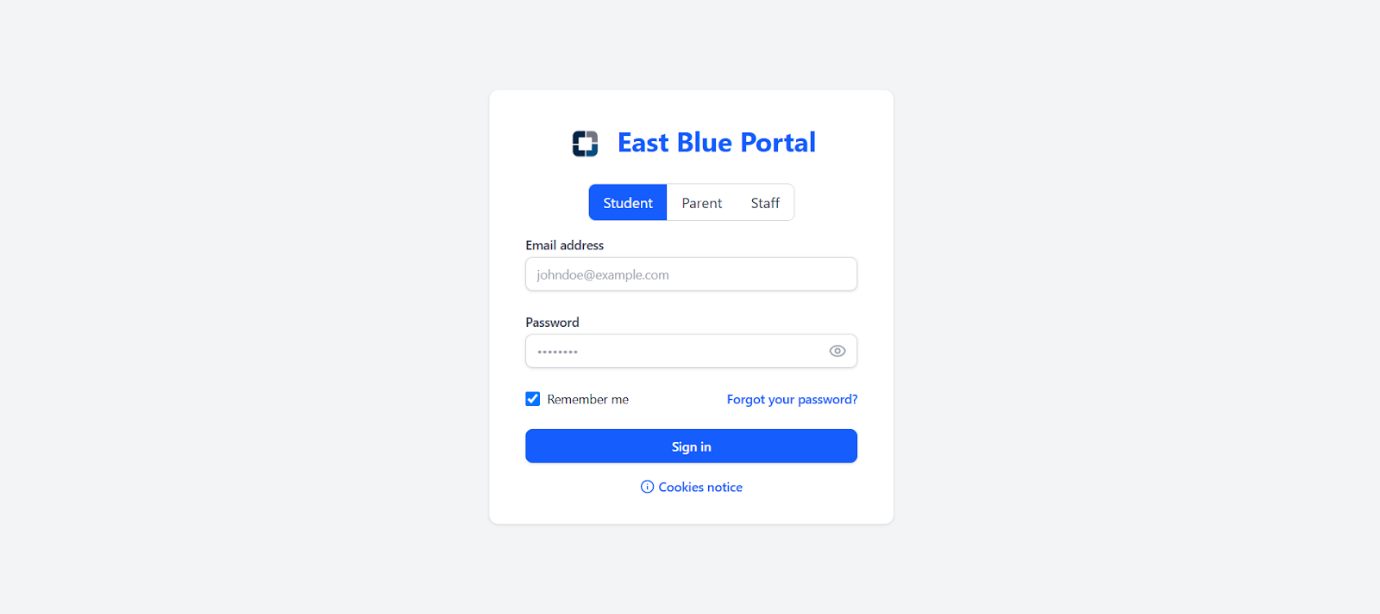


Figure 3.2.1 Login Pages

* Desktop Dashboard Page

After logging in, students are directed to a personalized dashboard Figures 3. 2.2 and 3.2.3. The dashboard has navigation tabs and relevant student information. It also integrates an AI assistant that allows students to ask questions via chat. For instance, students can ask, “When is the SRE assignment due?” and the assistant will respond with the appropriate deadline or information. The customizable layout is similar to the iPhone's widget system, where users can resize components and personalize their dashboard by adding elements such as the timetable, user profile, and today's schedule, as shown in Figures 3.2.2 and 3.2.3.

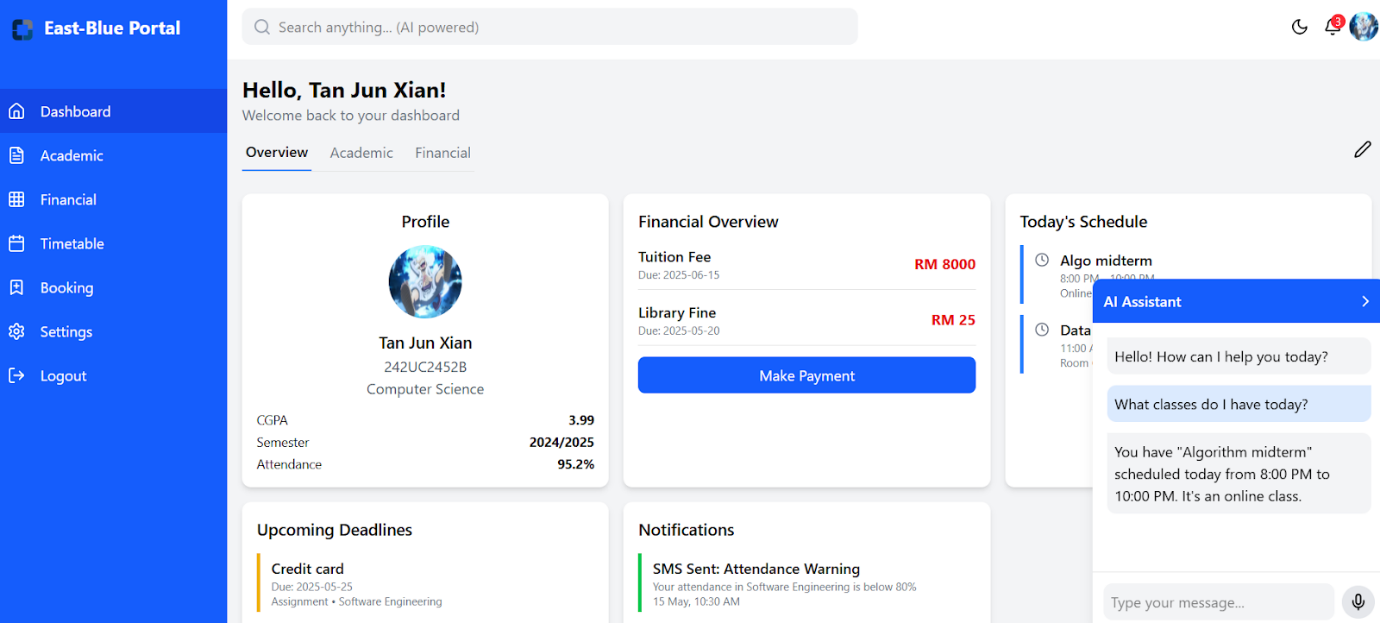


Figure 3.2.2 Desktop Dashboard Page

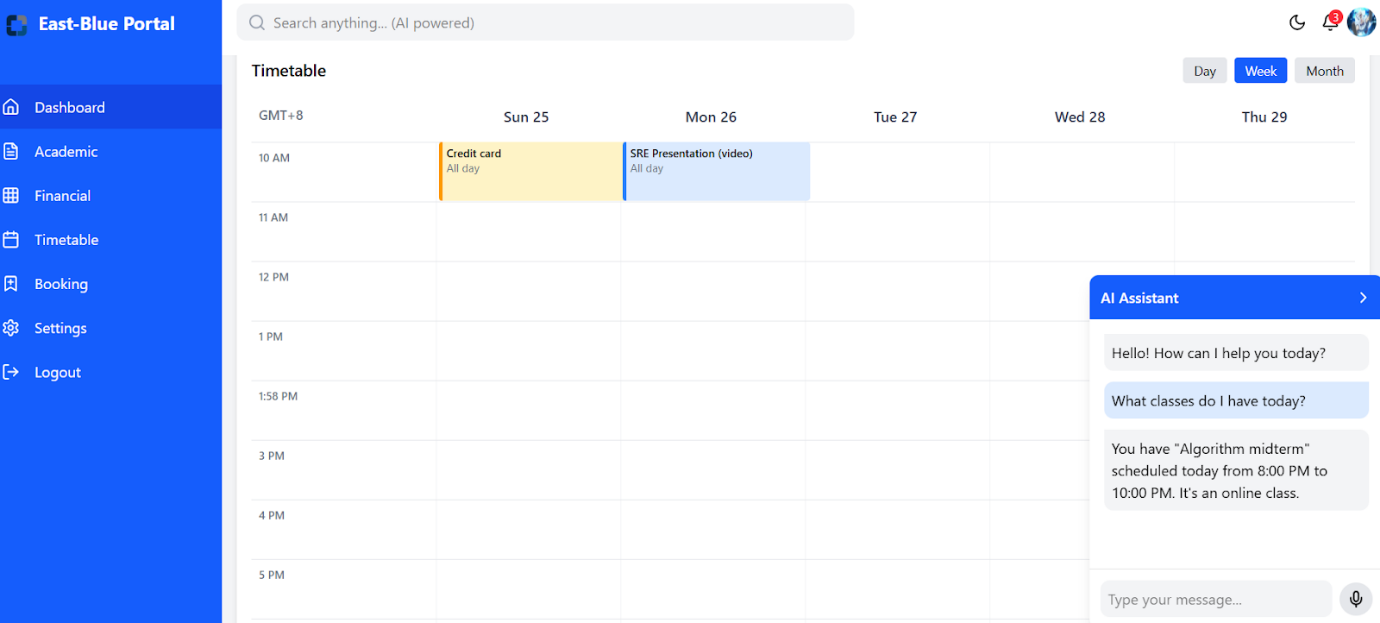


Figure 3.2.3 Desktop Dashboard Page

* Mobile Dashboard Page

Figure 3.2.4 displays the mobile dashboard page, which has the same layout and features as Figures 3.2.2 and 3.2.3 but is optimized for viewing within the mobile application.

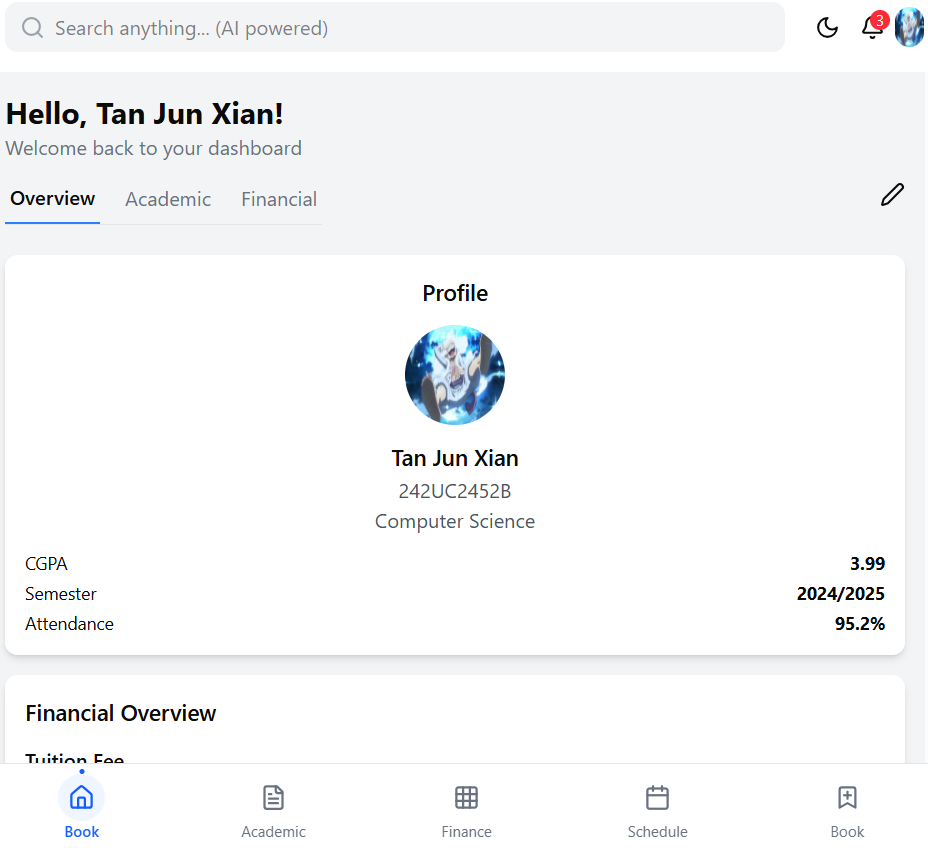


Figure 3.2.4 Mobile Dashboard Page

* Desktop Academic Page

Figures 3.2.5 and 3.2.6 display the desktop view of the Academic page. The interface includes a complete academic record showing both current and past grades, along with a CGPA progression chart that visualizes performance across semesters. It also features real-time course enrollment status, a degree progress tracker, a detailed breakdown of attendance for all enrolled courses, and a section highlighting academic achievements and recognitions.

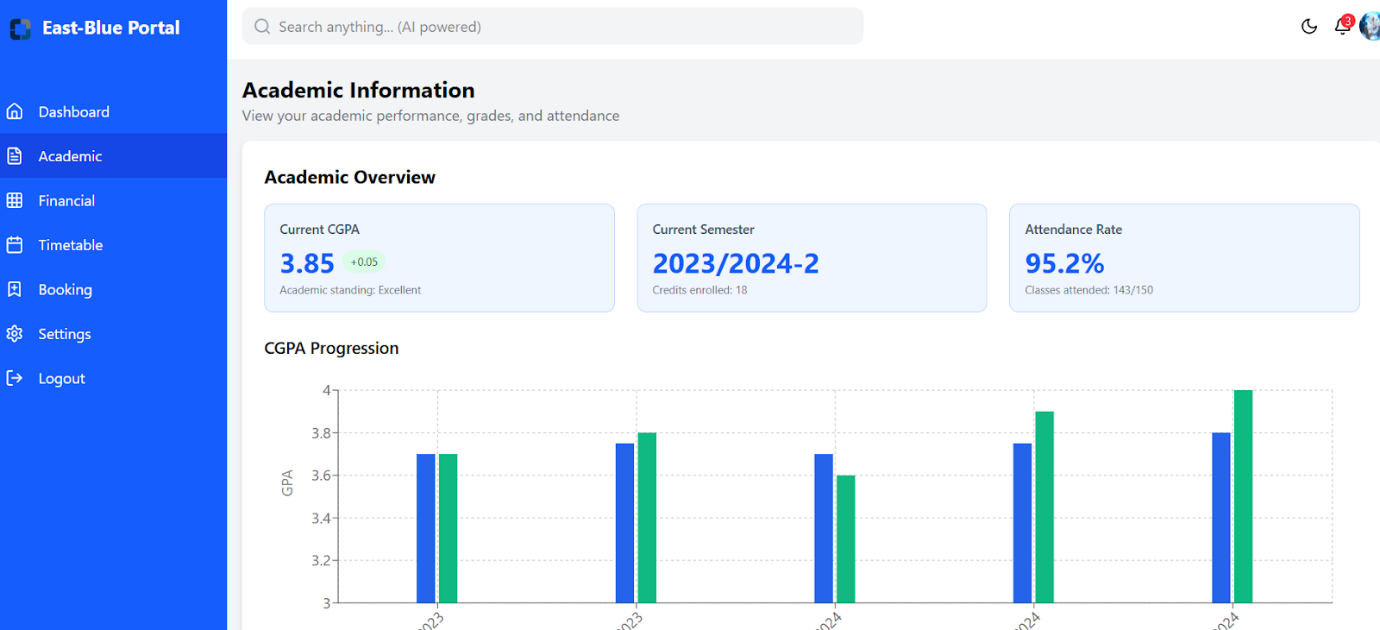


Figure 3.2.5 Desktop Academic Page

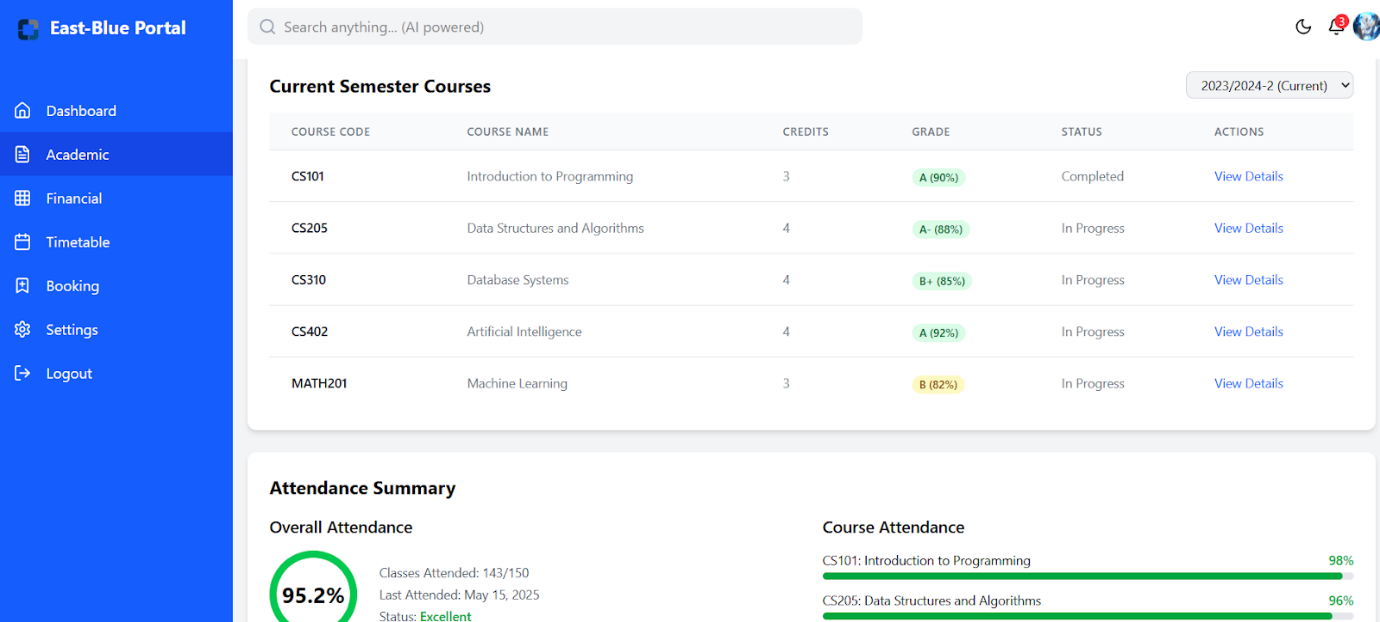
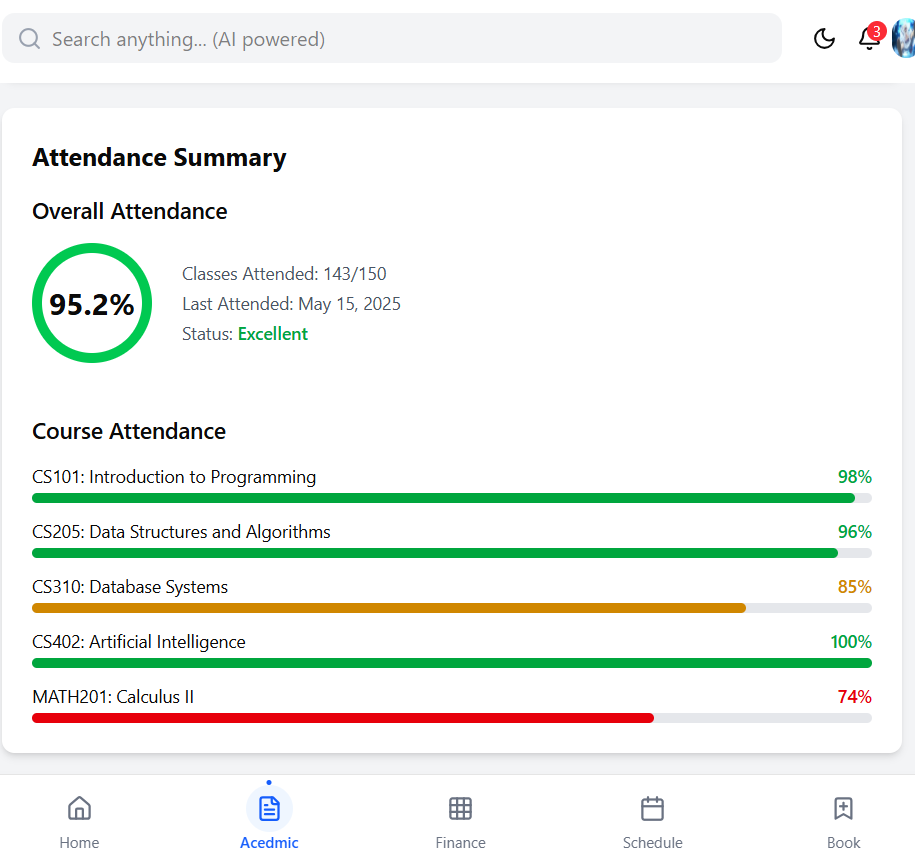


Figure 3.2.6 Desktop Academic Page

* Mobile Academic Page

Figure 3.2.7 displays the mobile academic page, which provides the same features as shown in Figures 3.2.5 and 3.2.6. However, it is optimized for viewing within the mobile application.



* Desktop Timetable Page  
  Figures 3.2.11 and 3.2.12 display the Desktop Timetable Page, featuring an interactive calendar with daily, weekly, or monthly views, color-coded events for classes, exams, and deadlines, schedule export capabilities, and visual indicators for upcoming events. Figures 3.2.13 and 3.2.14 display the Desktop Timetable Page, showcasing the auto-enrollment feature that recommends optimal course schedules. Users can set preferences such as minimum and maximum credits, required and recommended courses, and optional schedules.

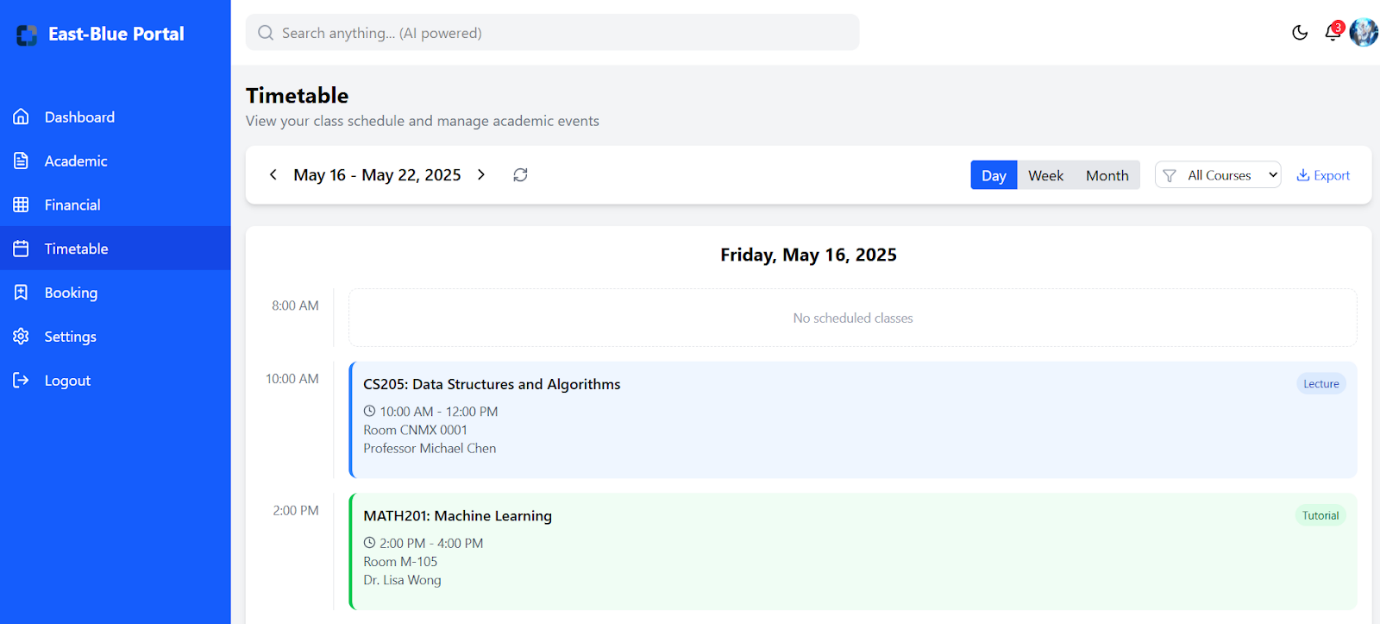


Figure 3.2.11 Desktop Timetable Page

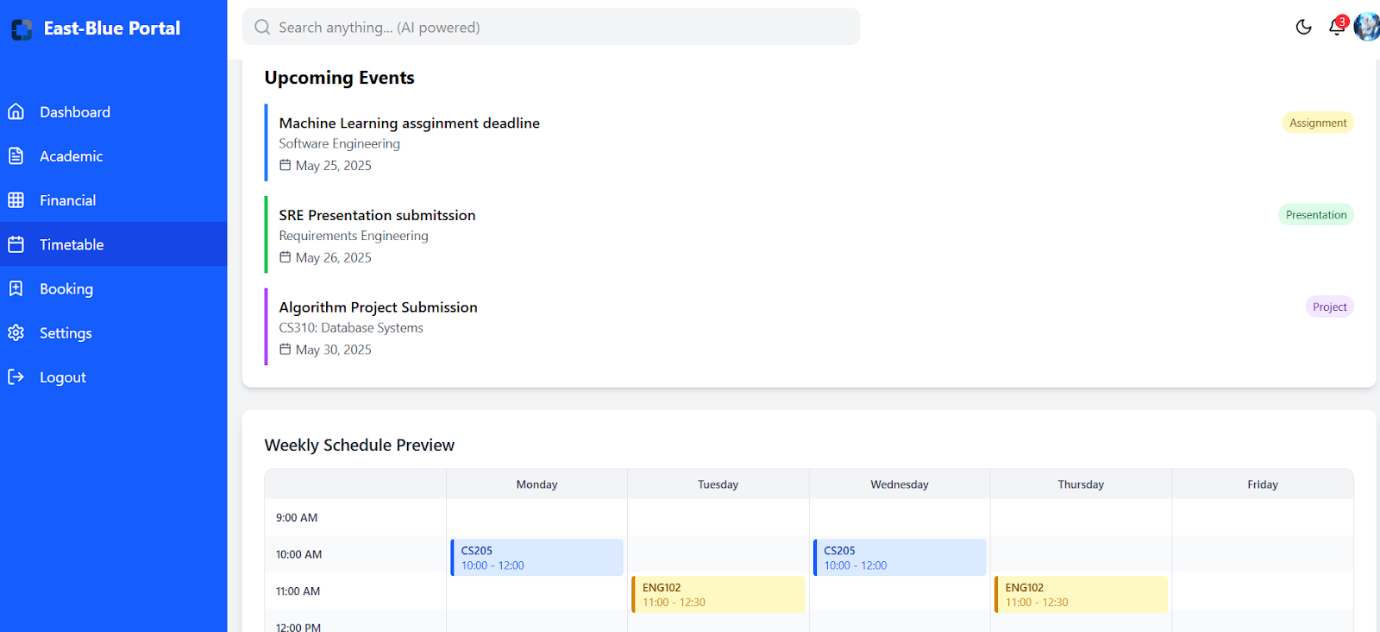


Figure 3.2.12 Desktop Timetable Page

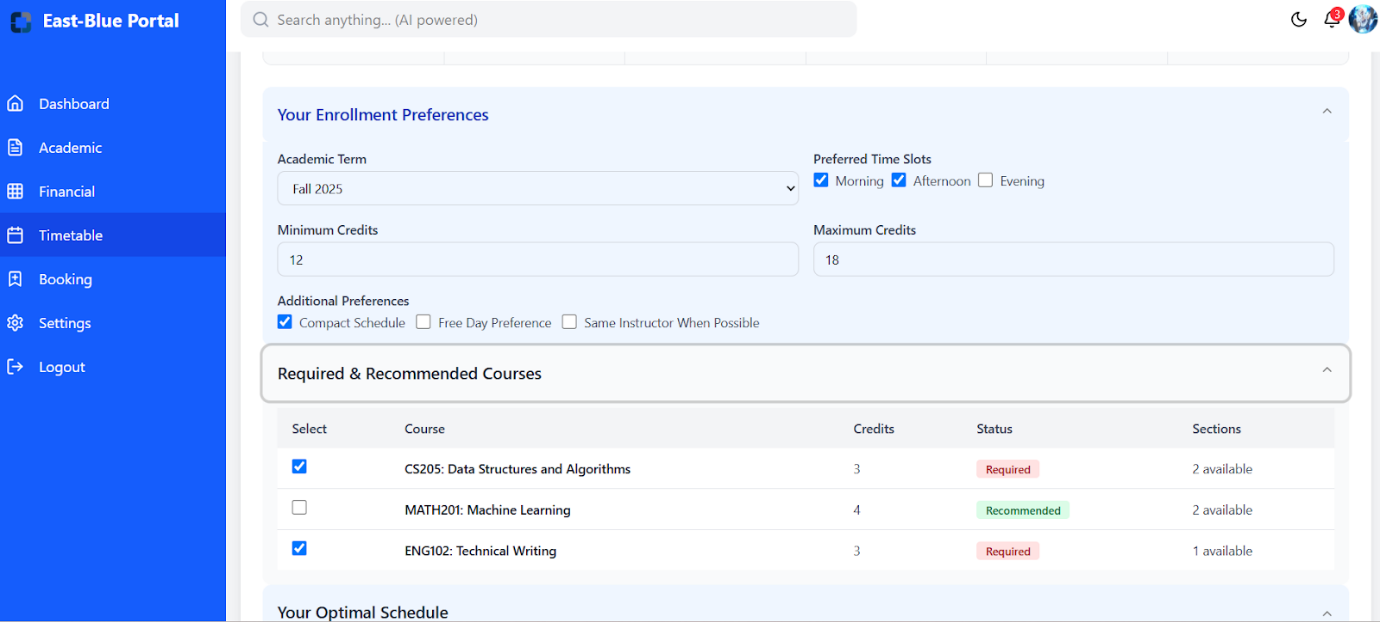


Figure 3.2.13 Desktop Timetable Page

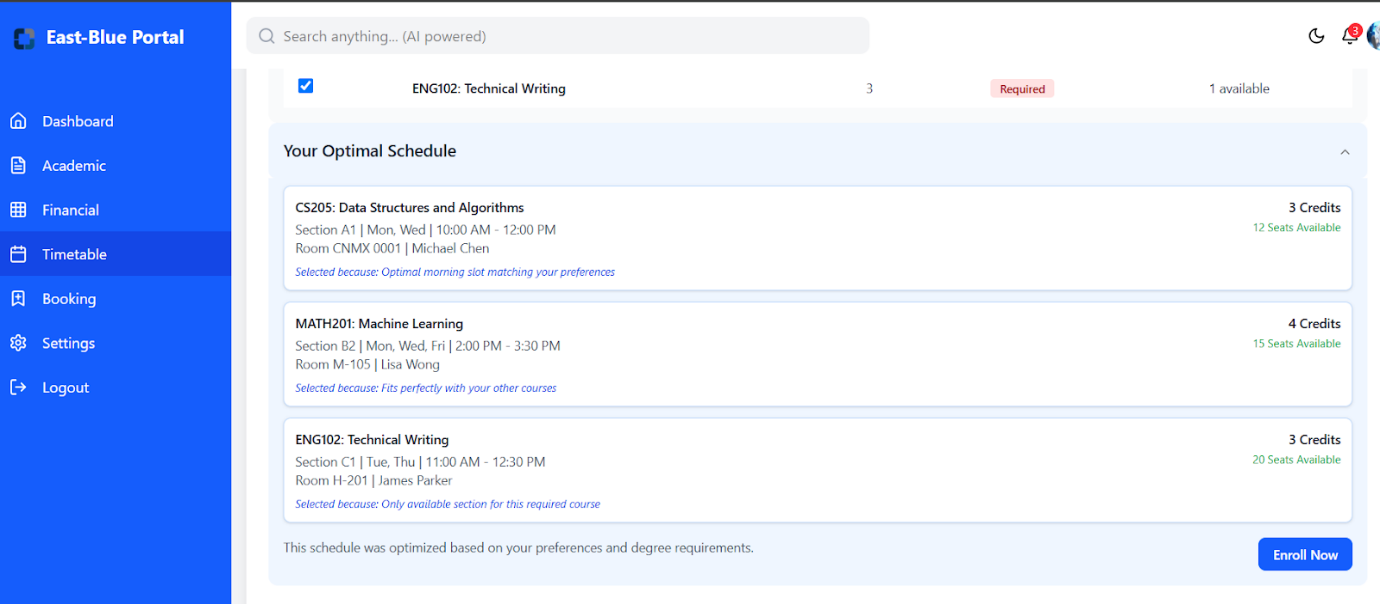


Figure 3.2.14 Desktop Timetable Page

1. Requirements Categorization Summary
   1. Must-Be Requirements (Essential Baseline)

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement | Source | Kano Category | Description |
| Login and sign up | Brainstorming, Prototyping | Must-Be | Student able to login and sign up |
| Forgot password | Brainstorming | Must-Be | Student able to |
| Add, Edit, Delete user information | Brainstorming, Prototyping | Must-Be | Student are able to modify their basic information |
| Ability to view student info | Brainstorming | Must-Be | Student ability to view their student basic information |
| SMS warnings | Brainstorming, Prototyping | Must-Be | SMS Low attendance warnings to parents or students |
| Web-apps | Brainstorming | Must-Be | Implement Web-apps is more convenient portal platform to a user |
| Online service request process | Questionnaire | Must-Be | Users often faced difficulties in submitting request such as facilities booking and certification letters |
| Access to academic and financial information | Questionnaire | Must-Be | Access to academic and financial information anytime through an online portal |

* 1. One-dimensional (Performance) Requirements

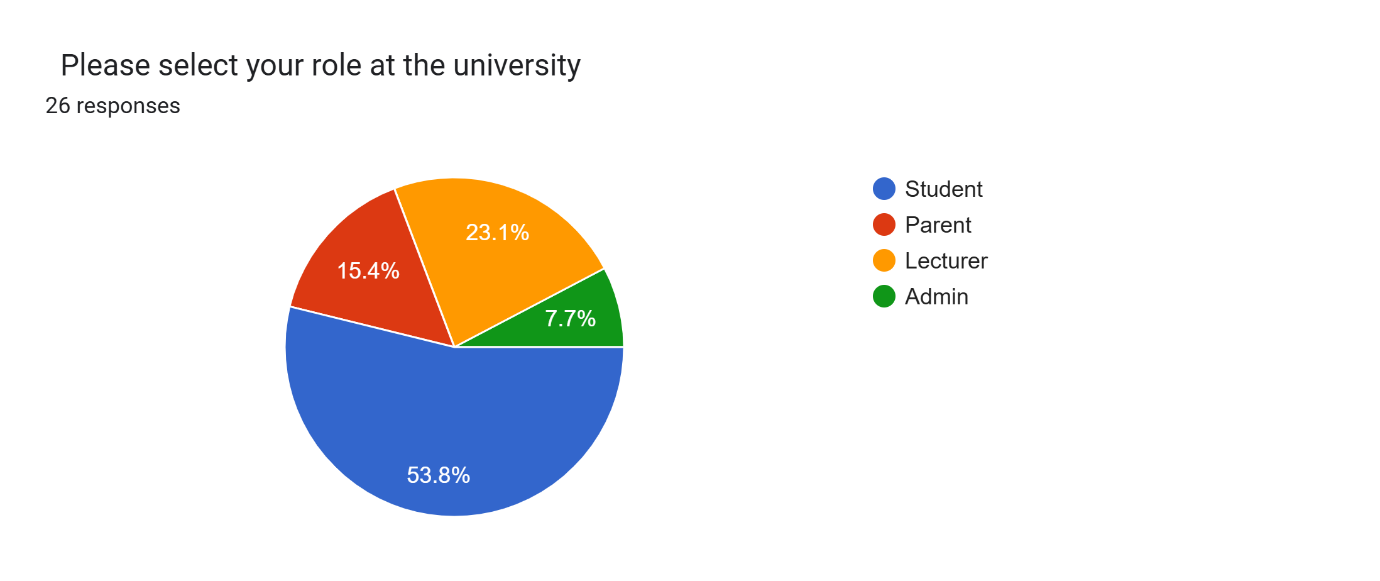
|  |  |  |  |
| --- | --- | --- | --- |
| Requirement | Source | Kano Category | Description |
| Loading time | Brainstorming | One-dimensional | Portal loading time must be in an acceptable range |
| SMS reminders | Brainstorming | One-dimensional | SMS reminders for upcoming deadlines |
| Student booking ability | Brainstorming | One-dimensional | Ability to book Lecturer, Admin consultation time or borrow classroom online |
| Document application | Brainstorming | One-dimensional | Document application (such as transcripts, proof of enrollment) can be tracked online |
| Faster loading speed | Questionnaire | One-dimensional | Faster loading speed in the university’s online system |
| Mobile-friendly design | Questionnaire | One-dimensional | Mobile-friendly design option for the university’s online system |
| Real-time notification | Questionnaire | One-dimensional | Real-time notification in the university’s online system |
| Real-time document tracking | Questionnaire | One-dimensional | Track status of submitted documents |
| Integrated academic calendar | Questionnaire, Prototyping | One-dimensional | University Communication and Services Portal integrated with academic calendar |

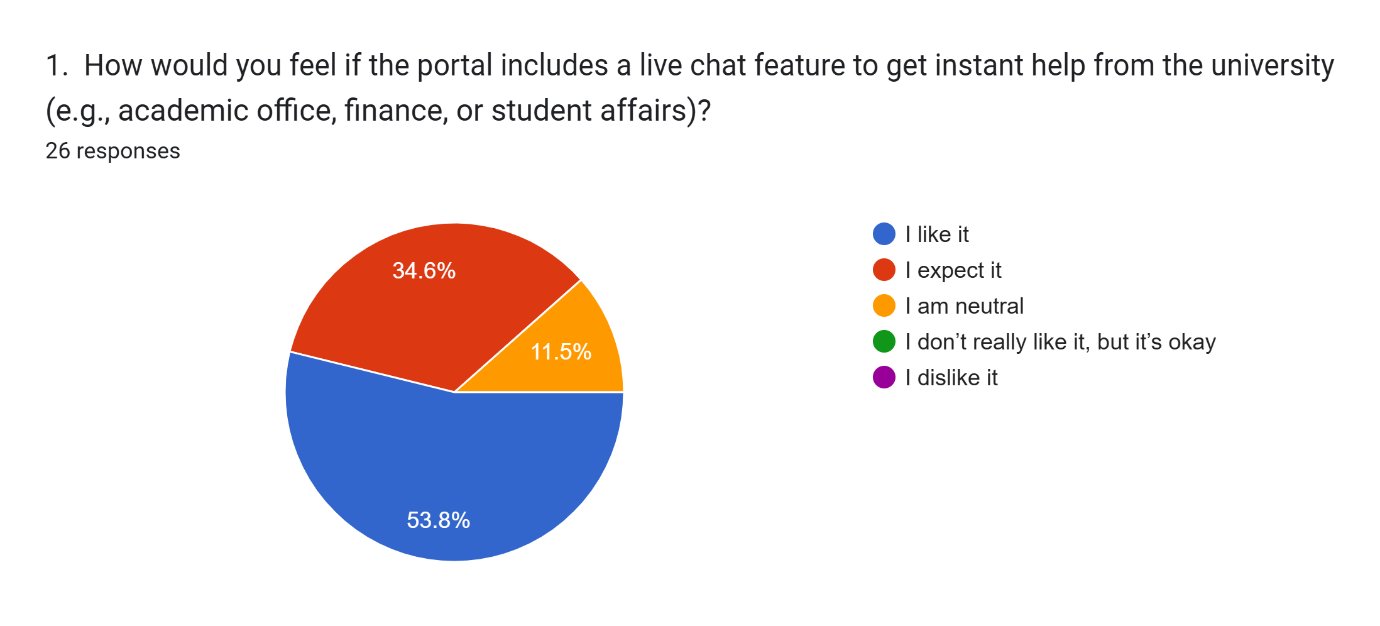
* 1. Attractive (Delighter) Requirements

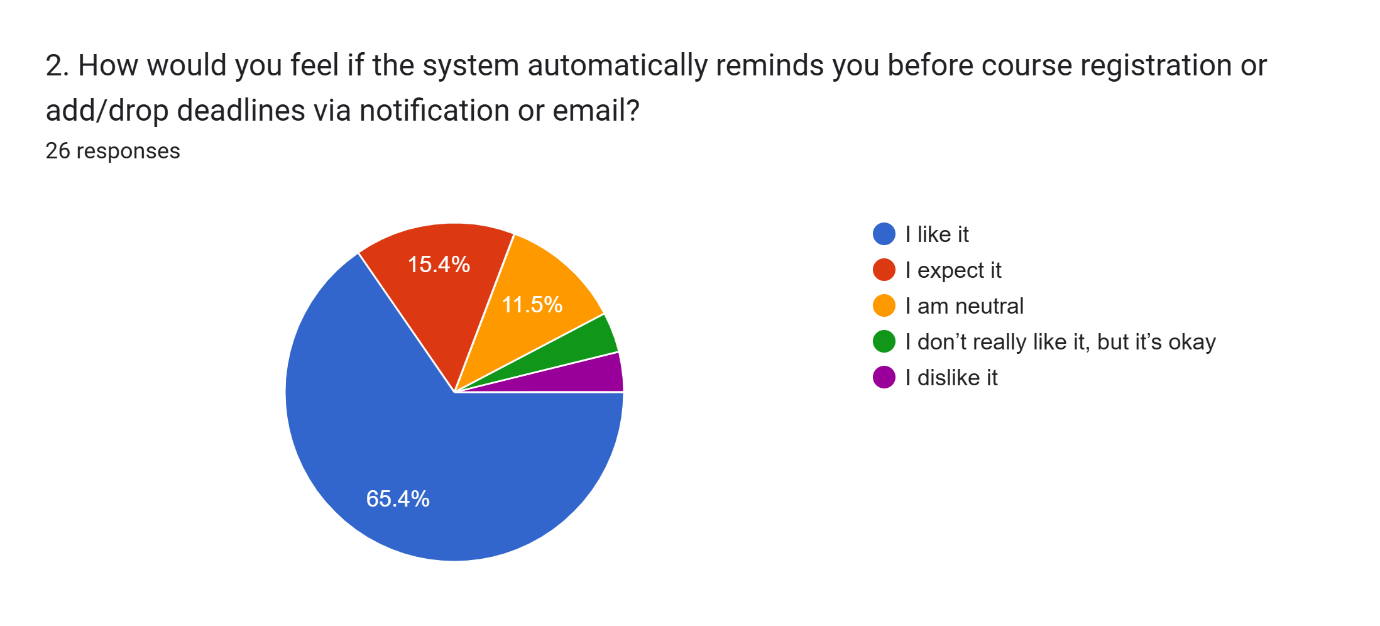
|  |  |  |  |
| --- | --- | --- | --- |
| Requirement | Source | Kano Category | Description |
| Personalized dashboard | Brainstorming, Prototyping | Delighter | Personalized dashboard, automatically display the next homework, payment, exam reminder |
| SMS messages | Brainstorming | Delighter | An SMS saying “Congrats! You scored the highest in class” |
| Portal chatbot | Brainstorming, Prototyping | Delighter | Chatbot, can quickly answer questions about courses, payment, office hours |
| One-click export | Brainstorming | Delighter | One-click export of personal semester progress report |
| Live chat | Questionnaire, Prototyping | Delighter | Live chat to get instant help from the university |
| Automated deadline reminders | Questionnaire | Delighter | System reminder before registration deadlines |
| Multi-language support | Questionnaire | Delighter | Portal supports multiple language |
| Integrated chat | Questionnaire | Delighter | Integrated chat system for students and lecturers |
| Personalized dashboard with AI assistant | Questionnaire, Prototyping | Delighter | Personalized dashboard with an AI chat assistant that could answer questions about academic matters, campus services, and administrative procedures |
| Parent/Guardian Portal | Questionnaire | Delighter | Dedicated portal for parents/guardians to view their child's academic progress, attendance records, and financial information |

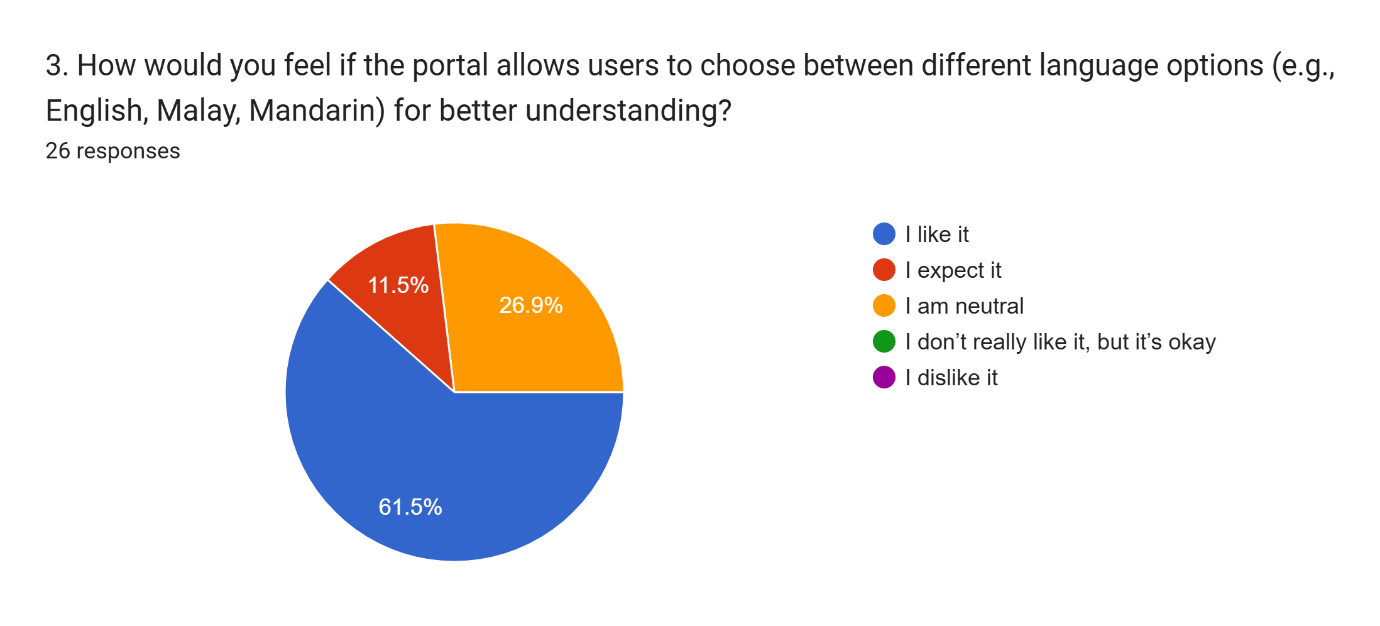
1. Execution Evidence and Documentation
   1. Questionnaire Analytics

The questionnaire results are visualized in the charts below. Each response was classified according to the Kano model to help determine which features are essential, expected, or appreciated extras. While full analysis and requirement breakdown is detailed in Section 3, this section presents the visual evidence supporting those classifications.

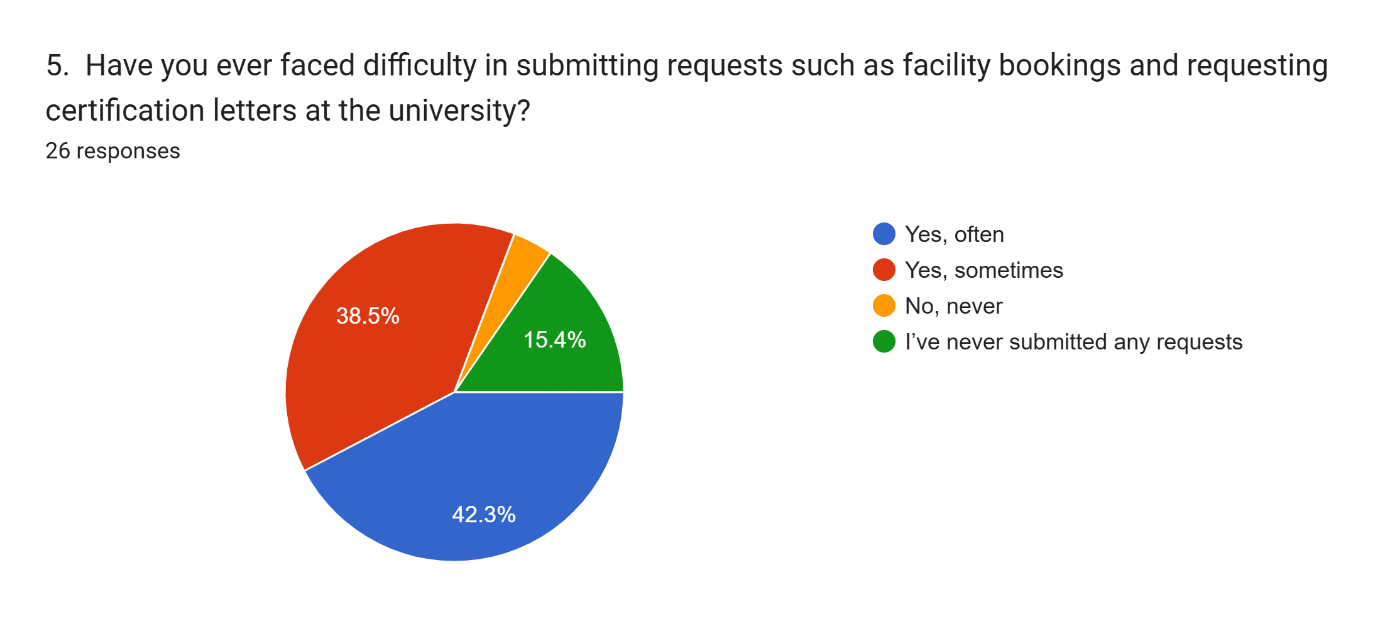






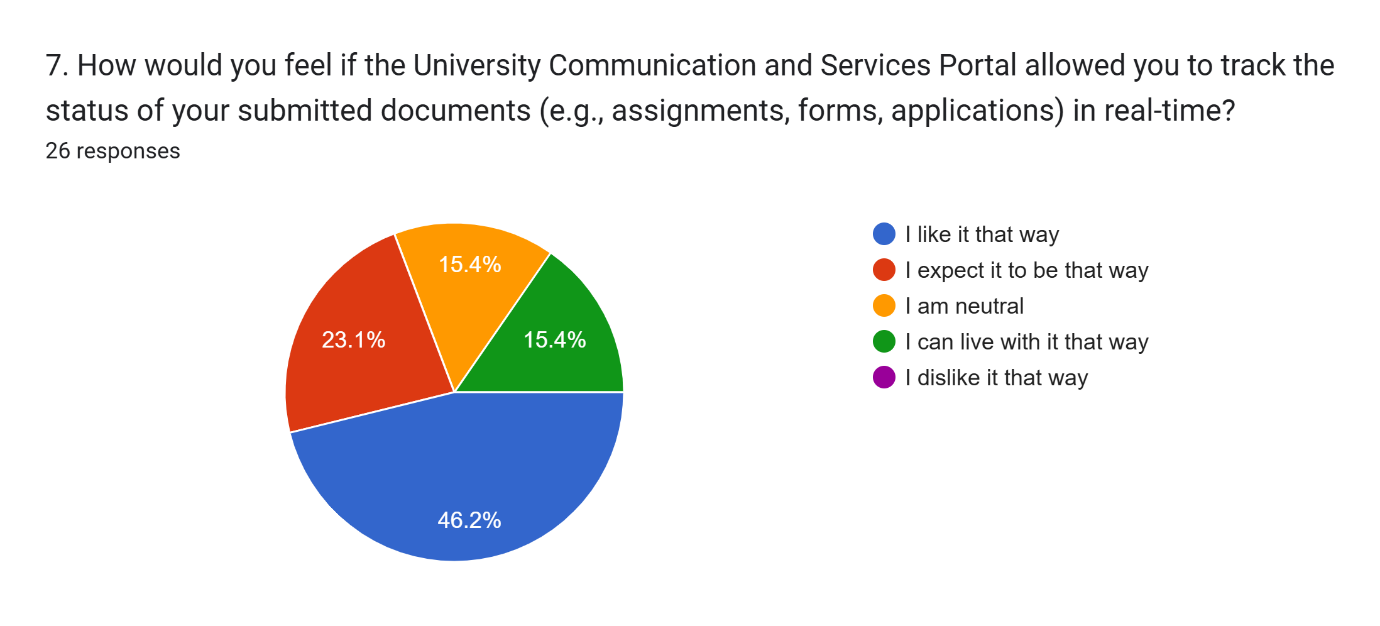


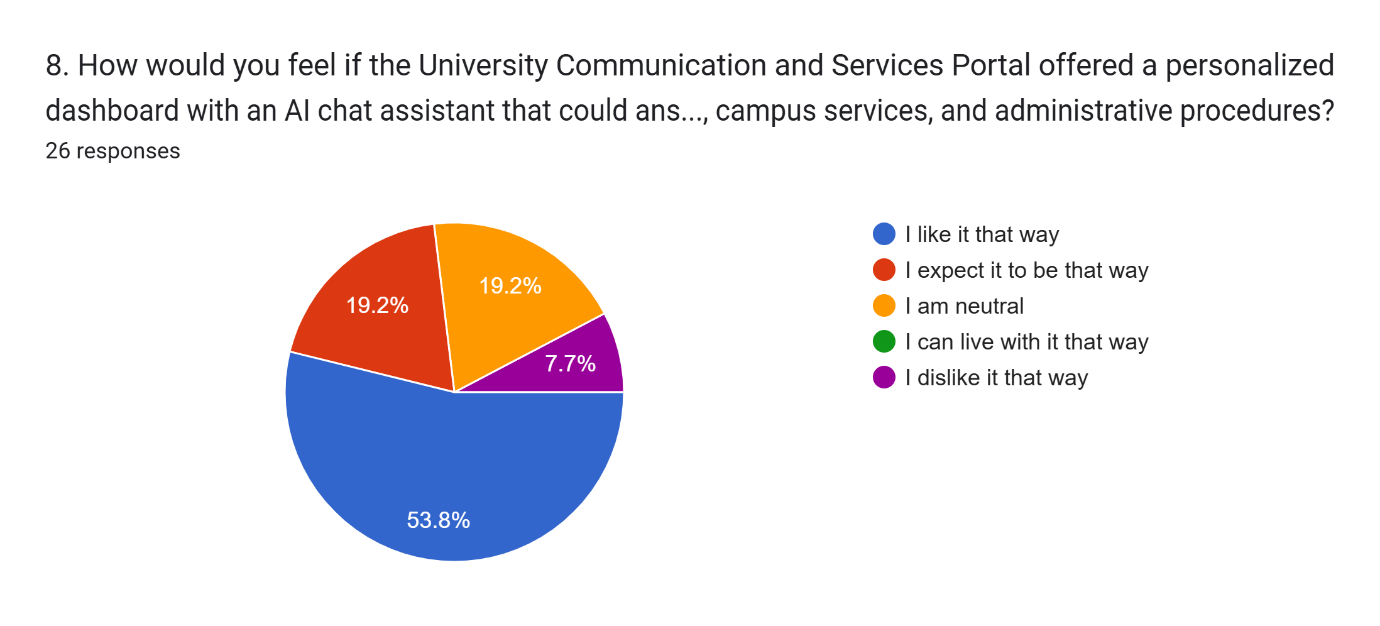
Forms response chart. Question title: 4. Which of the following features would you like to see improved or added in the university’s online system?
(Select all that applies). Number of responses: 26 responses.

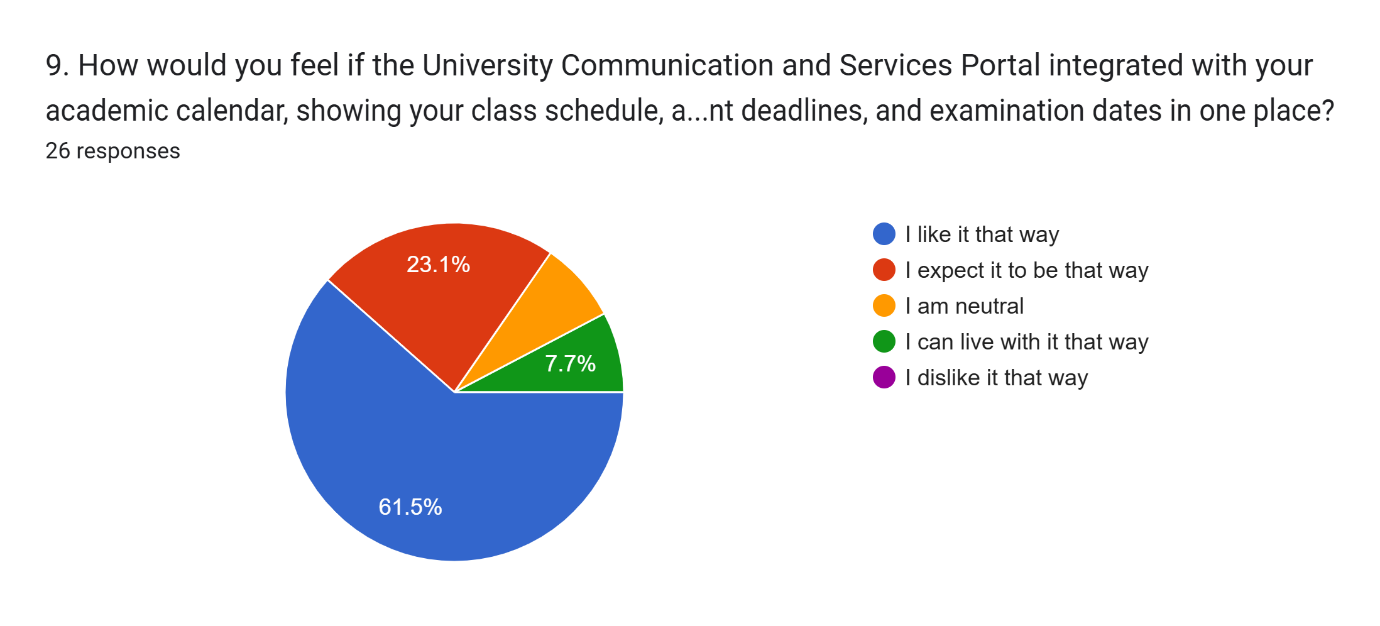


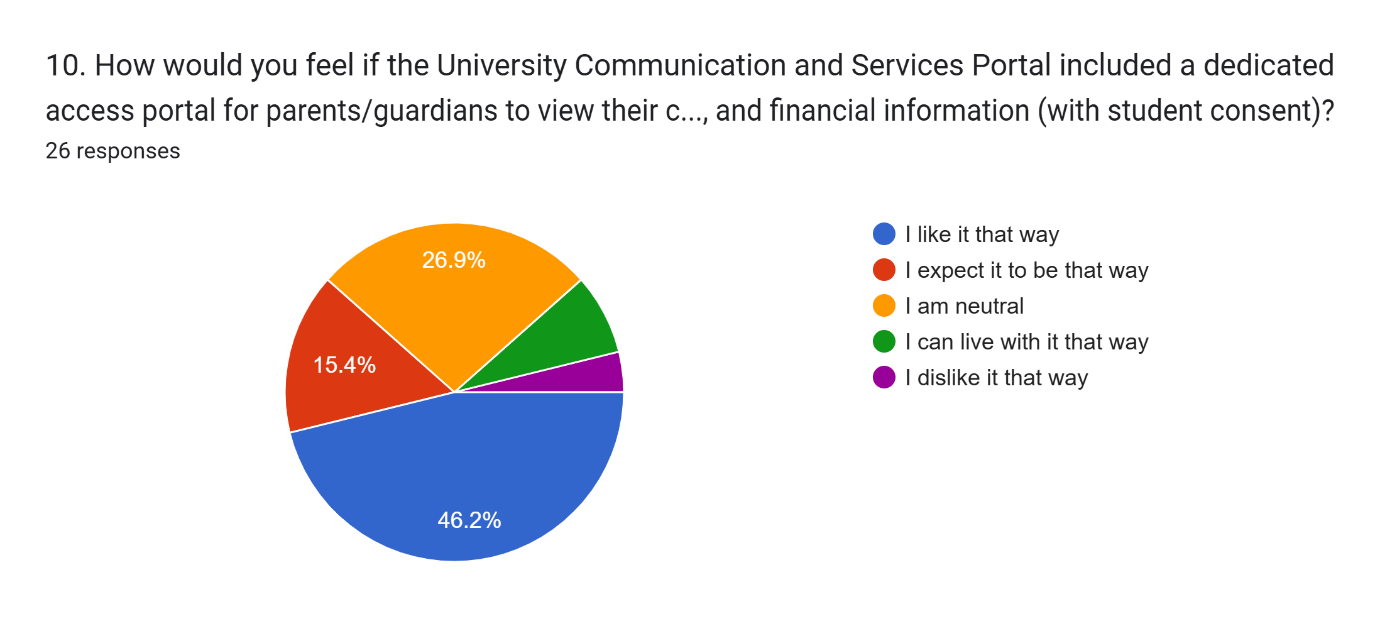
Forms response chart. Question title: 6. "I want to be able to view my academic and financial information (e.g: grades, attendance, fees) anytime through an online portal."

Based on the statement above, choose whether you agree or not, 1 being strongly agree and 4 being strongly disagree.. Number of responses: 26 responses.









* 1. Brainstorming Artifacts

The brainstorming sessions were conducted based on the Kano model and categorized into Must-Be, One-Dimensional, and Attractive (Delighter) requirements. Participants included students and facilitators, and the session was held over Discord, lasting approximately 10 minutes.

Artifacts collected:

* Meeting Recording: A session was recorded and is accessible via: <https://mmuedumy-my.sharepoint.com/:v:/r/personal/tan_jun_xian_student_mmu_edu_my/Documents/2025-05-12%2021-37-39.mkv?csf=1&web=1&e=CZPjU5>
* Notes and Observations: During the brainstorming, participants shared challenges they faced with current systems and suggested improvements such as SMS alerts, faster loading time, and integrated dashboards
* Visual Tools: Ideas were grouped and captured using sticky note-style tools during the call and later transcribed into categorized requirement tables

Documentation Summary:

All responses from the brainstorming session were reviewed and translated into clear, actionable requirements. These were categorized using the Kano framework and cross-checked with questionnaire results to reinforce consistency.

* + 1. Prioritization Matrix

A prioritization matrix was created to determine which features should be prioritized during development. The prioritization matrix is based on two key factors:

* Importance to stakeholders. This can be seen in brainstorming and survey
* Implementation complexity

Prioritization Method:

* Must-Be requirements were given highest priority, regardless of complexity
* One-dimensional requirements were prioritized based on ease of implementation
* Delighters were considered lower priority unless they could be implemented with low effort

Matrix Categories:

* **High Importance & Low Effort:** Immediate priority, an example is login, and SMS alerts
* **High Importance & High Effort:** Plan for phased implementation such as dashboard
* **Low Importance & Low Effort:** Implement if time allows such as one-click export
* **Low Importance & High Effort:** Consider for future releases such as chatbot

**Figure 2** visualizes these categories and helps guide development planning.



Figure 2: Prioritization matrix for identified requirements.