the

Task 1 Planning

Mobile Application Development

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5.2

**Description of application**

The application is intended for educational use. Its main goal is to enhance the students’ learning experience and support their academic progress by providing the best possible user experience.

**Target Audience**

The application is primarily designed for:

* Students
* Teachers/lecturers
* Parents/guardians

This audience includes users of different ages and a variety of technical abilities. Therefore, this application will feature a user-friendly interface with easy learnability, consistency, and minimal clicks to complete tasks.

**Goal of the application**

The goal of this application is to make school life simpler and smarter by connecting students, teachers, parents, and administrators through one easy-to-use platform with -

* Innovative design
* Accessible for everyone
* Easy communication between teachers, students, parents, and administration
* Students and parents (for young students) can see attendance and students’ records
* Upload/download files
* A timetable that can be used as a personal calendar
* Attendance
* Different languages (For future)

**Problems and Challenges the Application Solves**

This application solves problems such as –

* Communication/group discussion
* Tracking the students’ records and academic progress
* Prompt notifications
* Submitting assignments from anywhere
* All-in-one calendar
* Accessibility Challenges, including adding alt text, colour contrast, and ease of navigation for all users
* Limited Parental Involvement by giving direct access to information about their children's academic records

**Persona 1**

A person smiling and looking at the camera

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**Persona 2**

A person smiling at camera

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**Persona 3**

A person smiling at the camera

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**Market Research**

**Classter (Android 3 /5 rating & IOS 2 /5 rating)**

The Classter application provides users with the flexibility to communicate with each other, receive notifications, and stay updated with the academic calendar. The application’s purpose is to be synchronised with the website.

**Features for each specific user type.**

**Students**

* Communicate directly with teachers and school staff for help with homework, exams, or assignments.
* Receive announcements about school trips, events, or emergencies.
* Access marks and monitor academic performance.
* Track attendance to ensure compliance with school requirements.
* Check the calendar for upcoming exams, project deadlines, and other important dates.

**Teachers**

* Stay connected with students and parents through email or internal messaging.
* Collaborate with colleagues, including teachers, assistants, staff, and administrators.
* Stay informed about institutional activities and events through notifications.
* Receive reminders for pending tasks such as marking and assessments.
* Check the calendar for upcoming exams, staff meetings, and student or parent meetings.
* Record student attendance, including absences, tardiness, and presence in your classes.

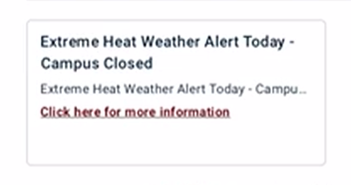
**Parents**

* Access all communications with school administrators and children’s teachers.
* Stay informed through notifications about events, exams, school trips, and more.
* Track your children’s academic performance anytime, anywhere.
* Monitor attendance and homework remotely.
* Use the calendar to stay organised and keep track of your children’s school responsibilities.

**Positive notes**

* Information about school updates is given by the notification box (Figure 1).
* The subjects are shown very clearly, and when clicked on, they open the information page about each subject (Figures 2 and 5).
* The assignment page is very useful since the students can easily upload files in a friendly user interface (Figure 3).
* **Positive reviews** – Some users praise the app for having a personal dashboard, giving real-time updates, and sending quick notifications. It also makes it easy for students, parents, and teachers to stay in touch. Many users also say it’s simple to use and feels safe.

A screenshot of a phone

AI-generated content may be incorrect. A screenshot of a cell phone

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Figure 1 Notifications Figure 2 Subject description Figure 3 Assignment submission

**Negative notes**

* On the calendar, there is a timetable, but students cannot add events to the calendar, such as other appointments away from school (Figure 4).
* When clicking on the Course Enrolment icon, the course title is not shown (Figure 5).
* It will be a good idea if students can see the Brief from the same page of the assignments (Figure 3).
* The Plus icon (+) from the navigation bar is confusing since it is supposed to mean “Send Message” (Figure 6).
* **Negative reviews** - Recent reviews for the Classter mobile app indicate a negative user experience, with many users reporting that the app is not working, buggy, and difficult to use.

A screenshot of a cellphone

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A red circle with a white cross in it

AI-generated content may be incorrect.A screenshot of a calendar

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Figure 6 Navigation Bar

Figure 4 Calendar Figure 5 Enrolment page

**Microsoft Teams (Android 4.6 /5 rating & IOS 4.8 /5 rating)**

Microsoft Teams is a cloud-based collaboration platform that combines chat, video meetings, file sharing, and application integration into a single workspace. Although Microsoft Teams is not a Learning Management System (LMS), it can work well with other LMS platforms and apps to support online lessons, discussions, and teamwork. It includes features like Assignments and Grades, but it doesn’t have the advanced tools of a full LMS, such as tracking student progress.

**Feature Comparison**

|  |  |  |  |
| --- | --- | --- | --- |
| **Feature** | **Windows** | **iOS** | **Android** |
| **Meeting Controls** | Includes the most advanced meeting tools such as multiple participant views, enhanced host controls, and built-in background options. | Offers a simplified interface with standard meeting functions similar to a desktop. | Provides streamlined meeting controls that cover all essential features for mobile use. |
| **Screen Sharing** | Supports full-screen and specific application sharing without restrictions. | Enables complete screen sharing functionality. | Allows screen sharing, though it may require compatible browsers like Chrome or Edge, depending on the device. |
| **Virtual Backgrounds** | Provides both built-in and customizable background options. | Supports virtual backgrounds on devices running iOS 12 or later. | Offers built-in and custom virtual background support. |
| **Accessibility** | Generally, more user-friendly on larger screens and supports full keyboard input. | Integrates smoothly with iPhone accessibility features. | It may have more limitations and less consistent accessibility integration compared to iOS. |
| **Performance** | Optimised for desktop performance, multitasking, and high-capacity usage. | Adjusted for mobile efficiency, offering smooth operation and lower battery consumption. | Designed to work effectively across a wide range of Android devices. |
| **Software Integrations** | Allows extensive third-party and custom integrations, such as conferencing systems and productivity tools. | Limited to integrations supported by the iOS environment. | Integration options vary by device manufacturer and Android version. |
| **Device Support** | Fully compatible with Windows 10 and 11. | Runs smoothly on iPhone and iPad with full feature support. | Supported across Android phones and tablets running the latest four OS versions. |

**Positive notes**

* Teams on iOS and Android offer fast access to chats, meetings, and notifications.
* Portable and convenient
* The menu is very neat and concise (Figure 7).
* From the chat, the users can chat, call, video call, add attachments, audio clip, send location, mark chats as important, format text, and send emojis, among other things.
* The chat system is user-friendly, as it resembles other social media platforms (Figure 8).
* The filter button opens a list of features to help you find the needed chat quickly (Figure 9).
* The calendar is very flexible.
* It is easy to create a group chat.
* The Windows version is very similar to the mobile application.
* **Positive reviews** - According to the reviews, the application has seamless integration with other Microsoft products, consistently strong performance in calls and video meetings, advanced AI capabilities like live transcript, unlimited chat and calls, screen sharing, whiteboards, breakout rooms, and mobile access are highly valued, and it is considered an affordable option, especially for companies already using a Microsoft 365 plan.

A logo of a group of people

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Figure 7 Bottom Navigation Bar

A screenshot of a chat

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Figure 8 Chat Page Figure 9 Filter List

**Negative notes**

* Some functional constraints compared to the desktop environment.
* **Negative reviews** - Some users find the interface overly complicated, frequent updates are seen by some as complicating the user experience rather than simplifying it, and tools for administrators can be difficult to manage

**Canvas LMS (Android 4.7 /5 rating & IOS 4.7 /5 rating)**

Canvas is a cloud-based LMS developed by Instructure, which also includes Canvas Network, an open online learning platform. While the main Canvas LMS is used by schools, universities, and organisations for their enrolled students and staff, Canvas Network offers free public courses and learning programs from institutions worldwide.

**Features for each specific user type in Canvas LMS.**

**Students**

* View all Courses (Figure 10), view grades, content, and notifications (Figure 11).
* Submit assignments and download briefs.
* Messaging to instructors and peers (Figure 13).
* Use calendars and to-do lists (Figure 12).
* Take quizzes.

**Teachers**

* Provide feedback and grading with the app-embedded Speed Grader.
* Can send notifications, messages and can participate in discussions.
* Publish assignments, change due dates, and edit course content.
* View submissions and provide feedback.

**Parents**

* View assignment descriptions, due dates, and grades for their child.
* See course notifications and messages.
* Set reminders for assignments.

**Features for Canvas Network.**

* Canvas Network is a separate platform that is linked to Canvas LMS, which provides free and open professional development courses for educators.
* It is an open-source professional development course, not a traditional LMS.
* Students have the same features as in Canvas LMS.
* Teachers can create new courses and assign students to the course.
* The mobile experience is limited because Canvas Network doesn’t have its own app and can only be accessed through a mobile web browser.

**Positive notes**

* The way one can create a new account is ideal since the user does not have to be registered with an institution, and users can choose their role as teacher, student, or parent for Free (Figure 14).
* The accessibility of the Dyslexia font, keyboard navigation for motor skills and high contrast UI (figure 15).
* **Positive reviews** - Many users praise its usability for quickly checking grades, assignments, and notifications.

**Negative notes**

* The students have to generate a code for parents to view their child’s progress, but the code expires after 7 days or after the first time it is used.
* The teachers have to generate a code for each student to be enrolled in a course.
* **Negative reviews -** some criticise its occasional slowness, confusing interface for new users, and bugs, particularly with features like messaging. The user experience is heavily dependent on how instructors set up their courses, which can lead to inconsistency.

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AI-generated content may be incorrect. A screenshot of a cell phone

AI-generated content may be incorrect.

Figure 10 View all Courses Figure 11 View grades and contents Figure 2 To-Do-List

A close-up of words

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AI-generated content may be incorrect. A screenshot of a computer screen

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Figure 13 Communication Figure 14 Create Account

Figure 15 Accessibility

**Features**

* Login screens
  + Welcome screen
    - Displays the app logo and branding.
  + Choose Your Path
    - Allows users to log in through an institution or as an independent user.
  + Login page
    - Fields for email and password.
    - There is the Forgot Password link for password recovery.
    - The login button connects to the user's home page after verification.
  + Login Option
    - Option to log in as Teacher, Student, or Parent.
  + Sign-Up Page
    - Fields for name, email, and password.
    - Click the Sign-up button to create a new account.
  + Forgot Password Process
    - User enters email to receive reset code.
    - User enters verification code from email.
    - User sets a new password and confirms it.
    - Confirmation message shows that the password has been successfully updated.

**Supported by Research**:

* Supports flexibility similar to Canvas, which allows signing up without an institution.
* Secure user authentication system similar to Classter’s institutional login.
* Helps tailor the interface and features according to each role, inspired by Canvas, which provides different views for each user type.
* Inspired by modern LMS security flows like Canvas and Microsoft Teams.
* Welcome banner
  + Banner on the home page showing a personalised positive greeting message which includes your name, based on the time of day

**Supported by Research**:

* Inspired by Microsoft Teams’ user-friendly design and positive user engagement tools.
* Plan & Schedule
  + Calendar
    - View your timetable from the calendar icon at the bottom or from the menu.
    - Add your appointments/events/part-time schedule/assignment due dates, etc.
    - Choice between day/week/month view

**Supported by Research**:

* Microsoft Teams’ calendar was found to be flexible and easy to navigate
* Users appreciated the ability to manage schedules in one place.
* Enrolment
  + Shows your course code and name
  + List of your units, including unit name, unit code and lecturer name

**Supported by Research**:

* + - Classter emphasises structured course and unit display for clarity.
* My Units
  + List of units you are enrolled in
  + Click on any unit
  + It opens a new page where you can choose to show Files, Assignments, or Grades
  + From the Files page, you can download the files
  + From the Assignments page, you can upload files and submit them
  + From the Grades page, you can view a list of all subjects that are graded, including unit code, unit name, task title, mark and grade
  + Click on View Details from the Grades page, and it opens a different page showing also the comments

**Supported by Research:**

* + - Canvas offers separate sections for Files, Assignments, and Grades, which users found easy to use.
    - Research showed students appreciate it when all course materials are grouped by subject.
* Grades
  + From the Grades page, you can view a list of all subjects that are graded, including unit code, unit name, task title, mark and grade
  + Click on View Details from the Grades page, and it opens a different page showing also the comments

**Supported by Research:**

* + - Canvas includes a detailed Grades page that was well-liked by users.
* Notifications (sent by admins and teachers)
  + List of notifications
    - Sender's name
    - Subject
    - Date
  + Click on any notification to open the notification on a different page to read more

**Supported by Research:**

* + - Canvas and Classter both use notification systems for assignments, grades, and announcements.
    - Research showed this helps users stay informed and organised.
* Chats
  + List of chats
    - Sender's name
  + Click on any message to read more
  + Click on new chat – to write a new chat
    - search who you want to send the text message to
  + Write a message and send

**Supported by Research:**

* + - Microsoft Teams’ chat system was rated highly for being familiar and user-friendly (similar to social media).
    - This makes communication easier for students and teachers.
* Appearance
  + Choose between Dark and Light Mode with a toggle bar from a pop-up

**Supported by Research:**

* + - Consistent design across screens (as seen in Teams) improves usability.
* Profile
  + Name
  + Upload a photo
  + Delete the photo

**Supported by Research**:

* + - Canvas and Classter both allow simple account customisation, which users find helpful for identification and engagement.
* Teaching Units (from the teacher's view)
  + List of units and classes you are enrolled in
  + Click on any unit
  + It opens a new page where you can choose to show Files, Assignments, or Grades
  + Files button
    - You can see a list of files, if any, with the option to delete them
    - Upload a file
    - From the upload page, it opens a form
      * Select File
      * Category (dropdown menu)
        + Homework
        + Assignment
      * Class
      * Notes (add notes)
      * Send button
      * Cancel button
  + Assignments button
    - It takes you to the Class List page
    - Click on any student name
    - The teacher can view the student’s assignments
    - Download or open in browser
    - Grading Button
      * Opens a new form that includes Unit name, Task title, Mark, Grade and Comments
      * Save button
  + Grade button
    - It opens a page with the class list and marks

**Supported by Research:**

* + - Canvas allows teachers to create courses, upload materials, and manage grades easily.
    - Microsoft Teams supports file sharing and team organisation, which inspired this structure.

**IPO of Login**

|  |  |  |
| --- | --- | --- |
| **Input** | **Process** | **Output** |
| Loading app | Loads app | App loaded |
| User chooses Login with Institution or Login as Independent User | System redirects the user to the correct login screen | The login screen for the chosen path is displayed |
| Login with Institution | System assigns the correct role-based login path | The specific login page appears |
| Independent users select a role between Teacher, Student or Parent | System assigns the correct role-based login path | The specific login page appears |
| From the Login Page, the user enters their email and password | System validates login credentials in the database | If correct, the user is directed to the Home Page  If incorrect, an error message is shown |
| Log in without having an account | System checks if you have an account | If no account is found, an error message is shown |
| Click the sign-up link | Loads sign-up page | The sign-up page is shown |
| From the sign-up page, the user enters their name, email, and password | System validates data and creates a new account in the database | The Home page is shown |
| Click the Forgot password link | Loads Forgot password page | The forgot password page is shown |
| From the Forgot Password page, the user enters their e-mail and clicks the Reset password button | The system will send a Code to the user's email | Code received, and the Enter Code page is shown |
| User enters verification code and clicks the Verify Code button | System matches code with the database | If valid, proceed to the Set a New Password page  If invalid, an error message is shown |
| From the Set a New Password page, the user enters the new password and confirms it. Click update password | System matches passwords | If it matches, proceed to the Password Updated page  If it does not match, an error message is shown |
| From the Password Updated page, click Login | Loads the First Login page | Login page loaded |

**IPO of the Master Layout**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Input** | | **Process** | | **Output** |
| Click on the Home link | | Loads the Home page | | The Home page is shown |
| Click on the Plan & schedule link | | Loads the Plan & Schedule page | | The Plan & Schedule page is shown |
| Click on the Enrolment link | | Loads the Enrolment page | | The Enrolment page is shown |
| Click on the My Units link | | Loads the My Units page | | The My Units page is shown |
| Click on the Grades link | | Loads the Grades page | | The Grades page is shown |
| Click on the Notifications link | | Loads the Notifications page | | The Notifications page is shown |
| Click on the Chats link | | System loads chat list | | Displays recent messages |
|  | |  | |  |
| Click on the Dark/Light mode | | Loads the Dark/Light mode | | The Dark/Light mode is shown |
| Click on the Logo | Loads the Home page | | The Home page is shown | |
|  |  | |  | |
| Once you are logged in | The system detects the username and time of day | | Displays a personalised greeting | |
|  |  | |  | |
| Click on the Profile picture | Loads the Profile page | | The Profile page is showing profile image, name & surname & role | |
| Click on the Upload icon | Loads the photo gallery | | It opens the photo gallery | |
| Choose a photo | Check the size and file format | | The photo is uploaded | |
| Click on the Bin icon | System asks for confirmation (e.g., “Are you sure you want to remove your profile picture?”). | | If confirmed, the profile image will be deleted | |
| Click on the Sign out button | The system will end the user’s active session. | | The Login page is shown | |

**IPO of Bottom Navigation Bar**

|  |  |  |
| --- | --- | --- |
| **Input** | **Process** | **Output** |
| Click on the Calendar icon | System retrieves the timetable and allows the user to add personal appointments | Calendar view showing timetable and saved events |
| Click on the Enrolment icon | System fetches the user’s course, units, and lecturer details | Displays course info (unit code, name, and lecturer) |
| Click on the My Units icon | System retrieves the list of enrolled units | Displays unit names, codes, and lecturer names |
| Click on the Notifications icon | System retrieves updates from admins/teachers | Displays a list of messages |
| Click on any notification | Expand the notification | All message is shown |

**IPO of the Plan & Schedule page**

|  |  |  |
| --- | --- | --- |
| **Input** | **Process** | **Output** |
| Click on the Day, Week, or Month view | System updates the calendar layout based on the chosen view. | Calendar view changes accordingly (Day/Week/Month) |
| Click on the + icon and fill in the event details: Title, Date, Starting Time, Finishing Time, and Description. Click the Save button | System validates all fields, and the Event is saved in the user’s schedule. | A new event has been added and is displayed on the calendar. |
| Click on a personal event to delete or add the event | System updates the calendar accordingly | The event is deleted or added |

**IPO of My Units**

|  |  |  |
| --- | --- | --- |
| **Input** | **Process** | **Output** |
| Click on any unit | The System retrieves info of the specific unit (code, name, lecturer name, credits), Unit page | The unit page is shown with all info, including Files, Assignments and Grades buttons |
| Click on the File button | The system retrieves the files of that unit | The Files page is loaded, showing the retrieved files |
| Click on the download icon | System downloads a file from the database | The file is downloaded |
| Click on the Assignments button | The system retrieves the assignment forms for that unit | The Assignments page is loaded, showing the retrieved submission forms |
| Click on the Submit button | File uploads to the server | File uploaded |
| Click on the Grades button | The system retrieves the marks and grades of that unit | The Grades page is shown |
| Click on the View Details button | The system retrieves the comments of that unit | A detailed view of grades is shown |

**IPO of Teachers’ View of Enrolment**

|  |  |  |
| --- | --- | --- |
| **Input** | **Process** | **Output** |
| Click on the Enrolment icon | System fetches the user’s courses, units, and class details | Displays courses info (unit codes, names, and class details) |
| Click on any class name | System retrieves class details from the database | The list of students’ details is shown, including name and ID |
| Click the back arrow | Loads the Enrolment page | Enrolment page is loaded |
| Click on any student’s name from the Class page | The system retrieves students’ assignments from the database | The students’ assignment page is shown |
| Click on any file from the Assignment page and select Download or view in Browser | System downloads/opens a file from the database | The file is downloaded or opened |
| Click on the Grading Button | System fetches the grading form (Unit code and name, Task title, mark, grade and comments) | The grading form is shown |
| Click the Save button | System saves the grading form | Grading is saved |

**IPO of Teachers’ View of Teaching Units**

|  |  |  |
| --- | --- | --- |
| **Input** | **Process** | **Output** |
| Click on the Teaching Units icon | System fetches all units the teacher is enrolled in | List of all units (Unit code/name and class name) |
| Click on any unit | The System retrieves info of the specific unit (code, name, class name, credits), Unit page | The unit page is shown with all info, including Files, Assignments and Grades buttons |
| Click on the File button | System retrieves files loaded for the specific unit | List of loaded files shown |
| Click the Delete icon | Deleting file | The file is deleted |
| Click on the Upload file icon | System fetches the Upload file form (Select a file, category, class, notes, Send and Cancel button) | Form is shown |
| Fill in the form and click the Send/Cancel button | The system sends the file to the respective class or cancels it | The file is sent or cancelled |
| From the Teaching Unit page, click on the Grades button | System retrieves the respective class Grades page | The list of students’ names, ID and marks is shown |

**IPO of Chat**

|  |  |  |
| --- | --- | --- |
| **Input** | **Process** | **Output** |
| Click on the Chats link | System loads chat list | Displays recent messages |
| Click on any message | System loads the history chat with that sender | Displays the history chat page |
| Clicks the new chat icon | Loading a new page | The new page is shown |
| Clicks on the Search icon to search for a username | System searches the user from the database | Displays the history chat page of that user |
| Write a message | Sending message | Message sent |

The Home page displays a personalised welcome banner with the student’s name, and a positive greeting message based on the time of day. This page is designed to create a friendly and motivational experience when users open the app. The Enrolment page displays the user’s course title, course code, and a list of enrolled units with their respective unit names, unit codes, and lecturer names; therefore, these screens are informational only.

**Style Guide Light Mode**

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**Style Guide Dark Mode**

**A screenshot of a computer

AI-generated content may be incorrect.**

Wireframes

**Login Pages**

A close-up of a black and white photo

AI-generated content may be incorrect.

**Student’s View**

A screenshot of a cell phone

AI-generated content may be incorrect.

**Teacher’s View**

A screenshot of a cell phone

AI-generated content may be incorrect.