

Software Design Ongoing Documentation

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Initial Technology Choices

Architecture

Deployment	Azure	All of our members know this system best. Less chance of making critical mistakes.
Database Management	Firebase	This system has the most successful use between our members' other projects.
Version Control	GitHub	All of our members know this system best. Less chance of making critical mistakes.

Key Feature Integration

User Authentication	Google	Since this is a system based at the university, using Google and students' Wits emails makes the most sense.
Virtual Sessions	Google Meet or BigBlueButton	Google Meet integrates well with other Google based systems, with a whole host of services provided with some limitations. BigBlueButton is open source but difficult to set up.
Resource Sharing	Google Drive or Dropbox	Google Drive integrates well with other Google based systems, with a whole host of services provided with some limitations. Dropbox allows for easy file transfer outside the university's allotted Drive space per user, but with severe space limitations.

Workflow Management

UI/UX Design	Figma	Fairly simple to setup and use collaboratively.
Task Tracking	Taiga	Easy to track task assignment and status at a glance.
Meetings	Discord or WhatsApp or In Person	Will aim mostly for in person meetings with the client and major check in meeting, while other shorter meeting are held online via Discord. Day-to-day communication is facilitated via WhatsApp.

Complications Encountered

There have been several complications throughout the course of this project. Of the required six members, only three (Danielle, Karabo, and Kwanele) have responded to emails and actively contributed to the work. Prior to the marking of Milestone 1, we were informed that either new members would be added to our group or the current group would be dissolved, with each member reassigned to different groups. This uncertainty about the future of our group caused a significant delay in progress as we were unsure whether to continue working on the project.

On Thursday, 12th September, we met with our lecturer, Lucky Nkosi, who stated that the project would be scaled down, with some requirements being removed from the rubric. We were told to expect a list of these requirements over the weekend. However, we only received a response on Monday, 16th September, and it did not include the descoped features. Instead, we were told that these changes would be discussed during the marking of Milestone 2. Because of this, we are unaware of which API's to create as well as integrate with other subsystems.

Integration With Other Subsystems

For In Person tutoring sessions, we initially planned on integrating with the Campus Transport and Venue Booking (Infrastructure) subsystems in group D. This will primarily comprise of booking a venue for large in person sessions and then getting directions to that venue based on the user's current location, or possibly a well-known location to the user. Details still need to be discussed with the other teams.

Feature Documentation

Local versions of the Student Dashboard, Tutor Dashboard, and the Sign-In/Login page have been created and uploaded onto the GitHub repository, and they are in the process of being deployed using Static Azure Web Apps. The database has been created using Firebase.

Tutor Profiles

A tutor can indicate their fields of expertise, either by naming the field or listing specific courses they are willing to tutor others in. Here, tutors can set their availability each month for students to book sessions.

Tutoring Session Booking

Students can search for tutors that teach their field or subject, along with their biography, rating from other students and reviews from other students. Then the student can schedule a session with the tutor, picking a time and date that the tutor indicated they would be available.

This session request is then sent to the tutor in question to either accept or reject. If they accept, the tutor will indicate a location for the session, either by choosing a public space like in the Matrix or a study hall, or by booking a venue via the Venue Booking subsystem.

This information is then sent to the student.

Resource Sharing

Tutors and students can share resources relating to specific topics or courses via Google Drive links. These links will be sorted in house for easy access.

User Stories

0.1 Student

As a student, I must be able to sign up and log into the Campus tutoring web app.

As a student, I must be able to have access to resources that my tutors have uploaded for the module that they assist me in.

As a student, I must be able to book a session with the available tutors.

As a student, I must be able to cancel/reschedule sessions so I can adjust my timetable.

0.2 Tutor

As a tutor, I must be able to sign up/log into the Campus Tutoring web app.

As a tutor, I want to set my availability so that students can book sessions when I'm free.

As a tutor, I want to view my upcoming tutoring sessions in a calendar format so that I can keep track of my commitments.

0.3 General Users

As a user, I must be able to upload a Google Drive link to resources that could be useful to other users.

As a user, I must be able to search for specific resources by title.

As a user, I must be able to filter all resources to make it easier to find resources related to my courses, subject of study, or other user I'm either tutoring or being tutored by.

Meetings

2024-08-13

Initial planning meeting. Only three members were present, which was an on-going issue.

We contacted our tutor/client via email, with no response yet.

We delegated tasks to all present members to set up certain environments needed for this project:

- Karabo - Taiga + Initial UI design
- Danielle - GitHub repository + Initial deployment to Azure
- Kwanele - Firebase setup + connection

The following items were discussed regarding the design of the application:

- Most of our members had problems with user authorization with previous projects, so getting it right this time was top priority.
- Contact the Campus Transport and Campus Venue Booking teams to discuss integration with their APIs
- Try to convince the client that resource sharing should be a stretch goal.

2024-08-15

We met with our client, Lusanda Mdhloso, to discuss specific requirements from him for this project, as well as our plan up to this point.

At this point, we have had no contact with the other three members of our group. We emailed our lecturer, Lucky Nkosi, about this issue and asked for his

assistance.

Lusanda had no specific requirements beyond what was given in the project brief document.

2024-08-19

We met to discuss and confirm certain tech choices in preparation for our first milestone marking.

- Virtual Sessions - Integration with MS Teams/BigBlueButton
- UI Design - Figma
- Database - Firebase
- Hosting - Azure
- Version Control - GitHub
- Resource Sharing - Google Drive / DropBox

We discussed how to plan out the architecture for our application.

At this point, it's been four days since we emailed our lecturer about our missing group members, with no response.

2024-08-20

Our first milestone marking was today.

Our lecturer told us that we would be marked as a three-man team today, and that he would let us know what the plan was going forward, which could include splitting us up into other groups, changing our project topic, or reducing our project scope.

2024-08-29

At this point, we have had no communication with our lecturer regarding a plan about our future. We emailed him again, reminding him about our predicament and what he said during our marking session. We reasoned that if we were to split up, we would not want to waste time creating something just to scrap it.

2024-09-03

At this point, we still had no communication with our lecturer, so we assumed for now that we would not be split up. We emailed him again to remind him of our situation.

Kwanele started working on the database integration and the user authentication.

2024-09-12

We finally got in touch with our lecturer in person, who said that we would descope our project so that any work from the past month would not go to waste. He told us to email him again so that it is at the top of his inbox, which we did twice a day from now on until he responded.

2024-09-16

After repeated emails, our lecturer responded a day before our next milestone marking session to inform us that we would discuss our new scope during the marking session.

We discussed what we could present during the marking session since we were juggling the uncertainty of this project with several other academic demands.

2024-09-17

We met before our marking session to consolidate all of our efforts for the marking session.

During the session, we discussed descopeing our project with our lecturer:

- We removed virtual sessions from the scope with the prerequisite that all of the tutoring sessions would be booked somewhere on Main Campus in person.
- We reduced the scope of the Resource Management to linking to resources saved on Google Drive rather than managing in-house.

Since we were severely disadvantaged by missing half our members, our lecturer graciously allowed us to prepare for this second milestone for three more days, postponing our marking session to 2024-09-20.

2024-09-20

We had our Milestone 2 marking session online today. Since our project was not up to date even with the added time and descopeing, our lecturer will waive the Milestone 2 marks and either use Milestone 3's marks or the overall project mark as a replacement. This was on the condition that we could get a working product by Milestone 3.

2024-09-24

Tasks:

- Send Lusanda an email to confirm descopeing (*Danielle*)
 - No login security
 - Milestone 2 not marked

- Moved from Taiga to Notion for task management
- Build Resources page with Google Drive links (*Danielle*)
- Talk to other teams about API specs (*Danielle*)

Need Pages:

- Tutor details
- Availability setting
- Venue booking
- Student notifications of approvals
- Tutor notifications
- Feedback and Ratings – 5-star system (*Kwanele*)

Security:

- Hash for passwords

Priorities for the day:

- Karabo - Writing (*due tomorrow*)
- Danielle - Resources page
- Kwanele - Link DB to Azure page

2024-09-25

Kwanele and Danielle both had other academic commitments.

Danielle got a local version of the resource page running with dynamically created resource cards, but it doesn't link to the database.

2024-09-26

Danielle finished the resource page framework. She plans on adding a filter feature to filter the shown resources by subject, course or uploader.

Kwanele is still working to get the database connected to the Azure page.

2024-09-27

Danielle is finished with a local version of the resource page. She plans to help Kwanele with the database connection.

2024-10-01: Milestone 3 Preparation with our client

In this meeting, we showed Lusanda our progress in developing the Web App, and his feedback was the following:

- Tutor availability must be able to be set for multiple days not just one.
- Tutors must be able to tutor more than one subject
- Add a google calendar to sync the bookings to the tutors' and students' email
- Make the application mobile friendly
- Marking to take place Saturday, 11AM.