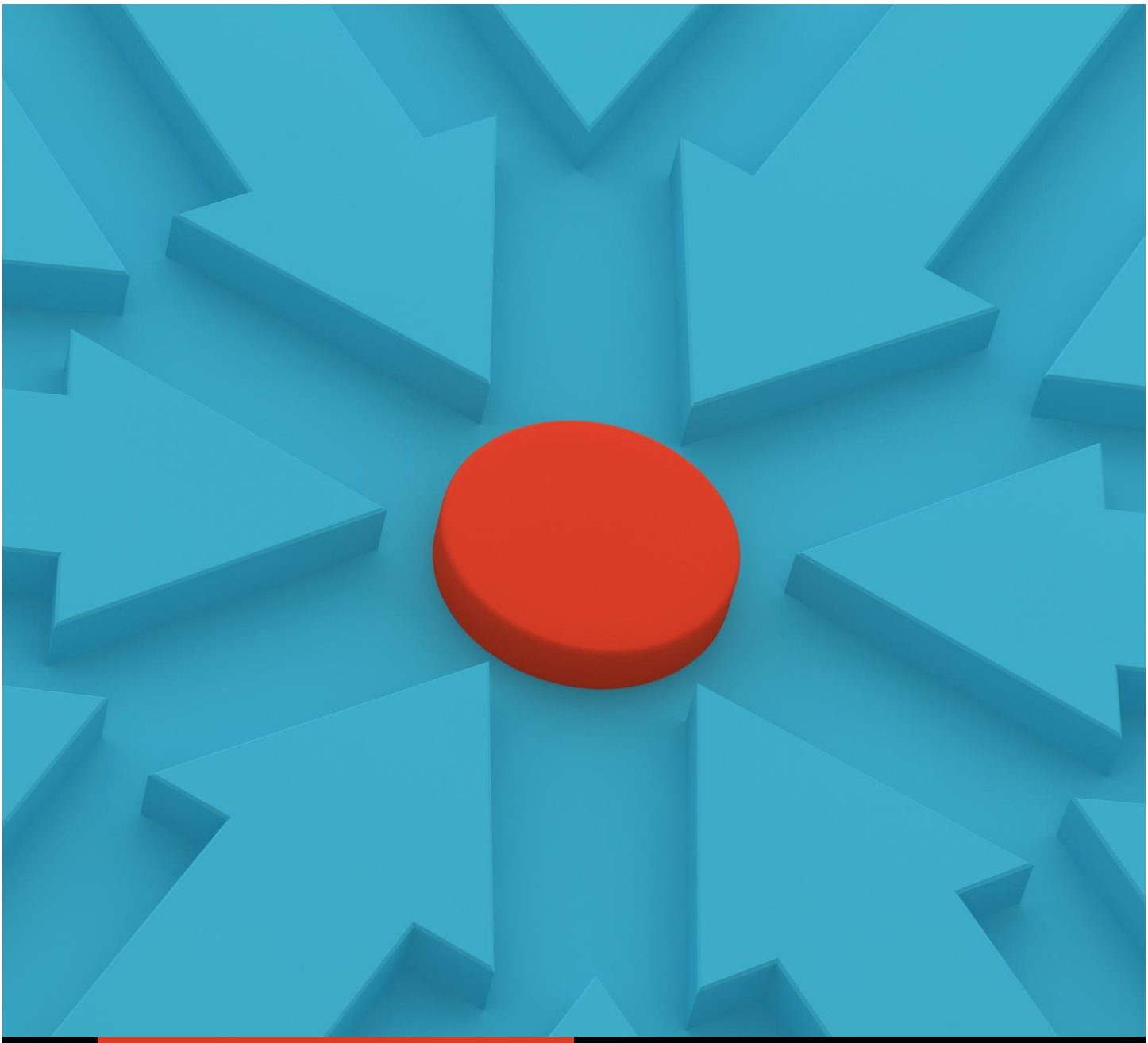
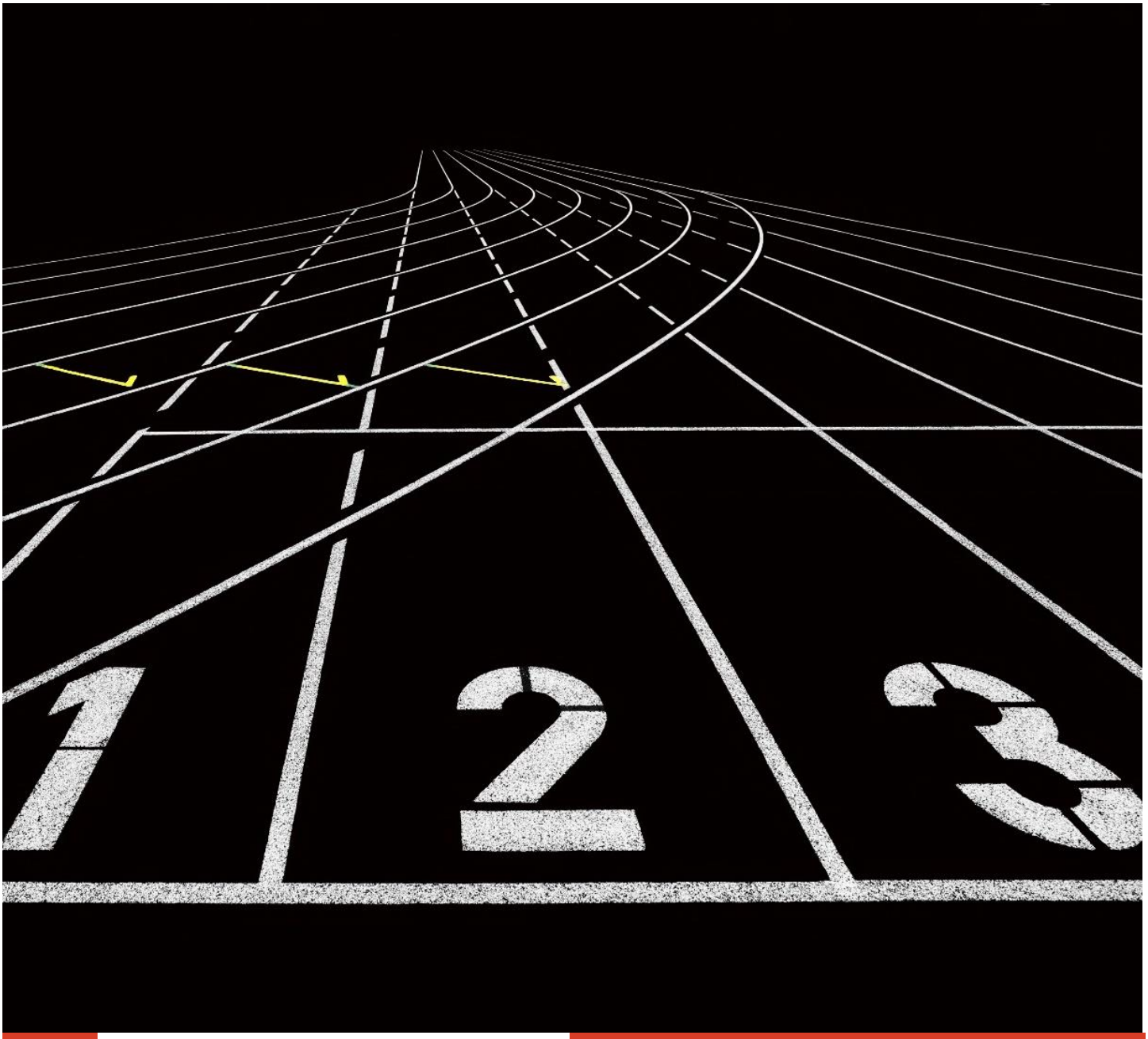


VIRTUAL VELOCITY

SPRINT 1

SOFTWARE DESIGN PROJECT 2022



WITS OVERFLOW

In this project you will be designing and implementing an online forum for the school of CSAM, in the vein of other such forums like Stack Overflow. Among other features, users should be able to:

- Ask and answer questions
- Comment on questions and answers
- Vote on questions and answers
- Mark answers as correct (question asker)
- Moderate questions and answers (moderator)
- Earn achievements for participating in the forum

REQUIREMENTS ENGINEERING

Requirements Gathering

Met with the client on where we were informed what the client needed done for the project. 5 user stories were specified.

- A log in screen
- A registration page for admin
- A registration page for users
- A homepage that will have a navigation bar.
- A personal profile page.

Requirements Analysis

There is no need to refine the client's requirements as the realism and feasibility of the requirements are just. The client's requirements for login and the registration user stories are simple and achievable. They focus mainly on data collection during the registration process and data verification during the login in story. No complex or unnecessary functionalities were requested. The client's requested user stories are practical & achievable goals

Requirements Specification

- A log in screen where a user will input their details which will be authenticated before being granted access to the platform
- A registration page for new admins. They will input their relevant information which will be stored on the database
- A registration page for new users. They will input their relevant information which will be stored on the database.
- A homepage that will have a navigation bar on the top left corner
- A personal profile page that will be available when the navigation bar is selected. The personal profile page should have basic information about the user

Functional Requirements

Business Rules

1. Only current undergraduate or postgraduate students enrolled in the School of CSAM at the University of Witwatersrand can create a profile on the WitsOverFlow platform.
2. If you want to use a cell phone number when registering, you must use the cell phone number listed under your student details on the wits self-service portal
3. If you want to use an email address when registering, you must use the student email provided by the university wits self-service portal
4. To create an account if you are not in the school of CSAM you must contact the moderator with a valid reason why you want access the platform. E.g., you are part of a coding interest group
5. People who are not currently studying at the University of Witwatersrand cannot create an account, besides Wits CSAM alumni exclusively

Authentication

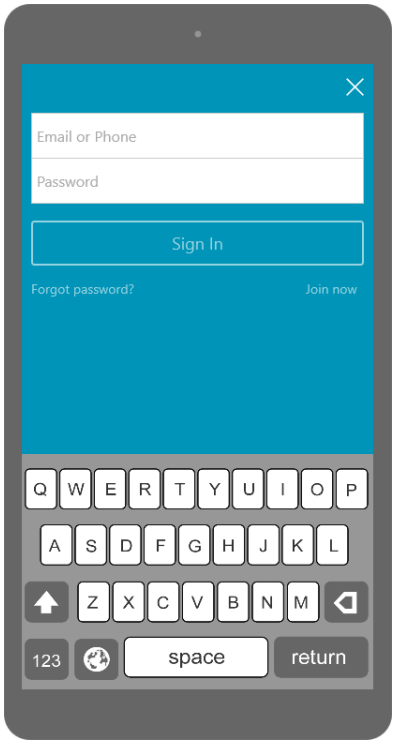
1. The first page that should be displayed when a user opens the app, is a page with a login button (for users who already have accounts), and a “register” button for new users.
2. When a user presses the **login button**, they are directed to **log in** screen which will accept 2 text input values namely the user’s email address/phone number and the password from associated with their account. After entering the password, the user must press the **sign in** button which verify the username and password entered with the information in the database. If the information is correct, the user is granted access to the home page. Otherwise, they’ll be prompted with a text **“incorrect username or password**”. If the one of the text input fields is left blank, a prompt will be returned stating “**please enter username/password”**. During login process a check box is available for “save password” which saves the password for future login so that the user does not having to enter their password every time they login to the platform.

Non-functional Requirements

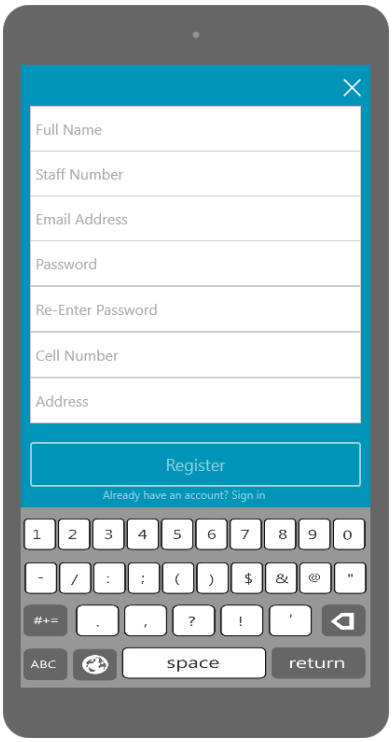
Security:

To prevent unauthorized access to the WitsOverFlow app the system will require users to create accounts to gain access to the application. The registration process will require one’s cellphone number, email address and their preferred password. This information will be stored in the database and will be use later to authenticate users and grant them access to the platform. The system requires user to create a strong password (**1 Upper case letter,1 symbol,1 lower case letter, and a minimum of 8 letters**) for the password to be acceptable. This is to ensure that a user’s password is not easy to guess, and someone else’s credentials cannot be used to gain access to the platform. The system will lock the user's account after 3 login failed attempts to protect the user's information. A user can choose to save password in order to grant access next time when using the app without entering details

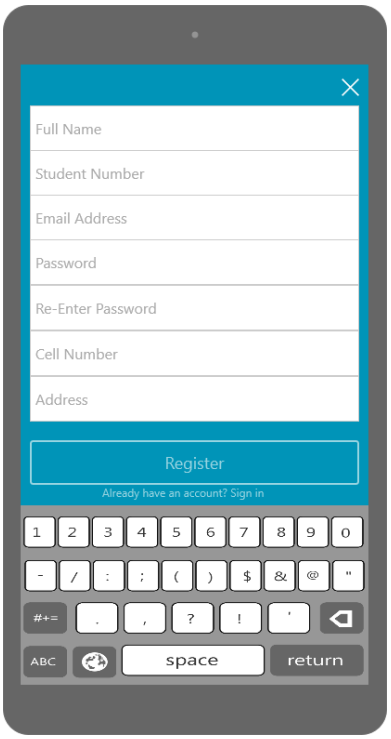
On-Screen Requirements



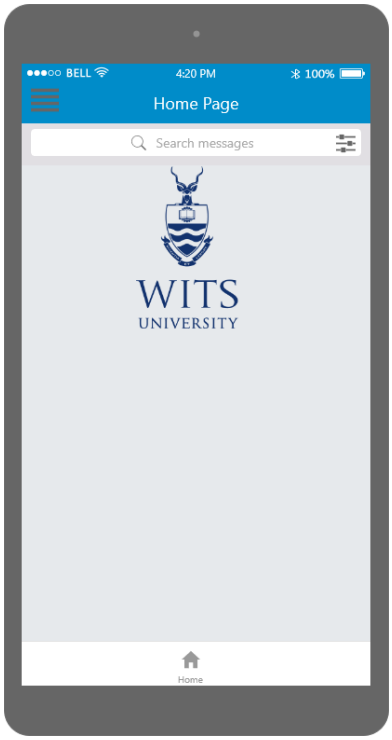
Sign In Screen



Registration For User

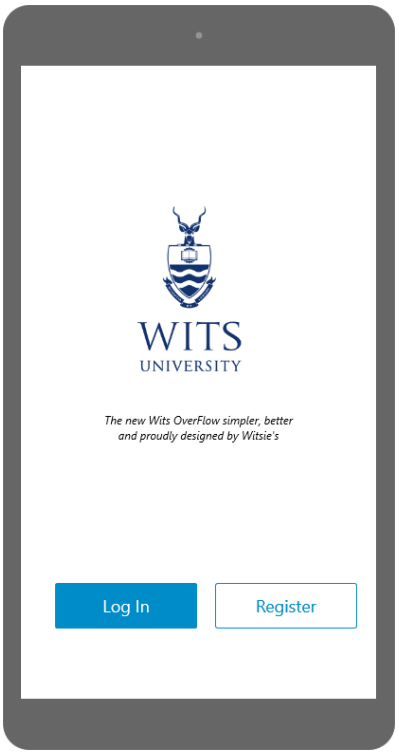


Registration For Admin

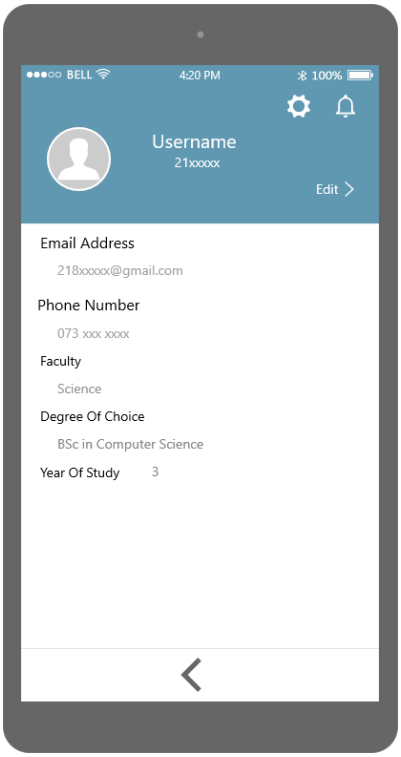


Home Page

On-Screen Requirements



Start



Personal Profile

User Stores & Respective User Acceptance Tests

Requirements	User Stories	User Acceptance Test	Functional Requirements
Login Page	As a user who already has an account, I want to be directed to a login page and login, so that I can continue from where I left of without having to create an account again.	Given I am currently logged out from the application, When I fill in a correct username/email and password and press the login button, Then I should get logged into the application.	The system must check if there entered username and password are present in the database and belong to the same person
Admin Registration Page.	As a new and potential **admin user**, I want to be able to see the admin registration page and register an account, so that I can start using the application from the **admin user** side	Given I am a new potential **admin user** without an account, When I fill in my correct registration details and press the register/sign up button, then my **admin account** should be created, and I can start using the application.	The system must allow admin user to provide their details for registration of their account. The system must be able to store the admins account details in the database for admin users.
User Registration Page	As a new user, I want to be able to see the registration page and register an account, so that I can start using the application.	Given I am a new user without an account, When I fill in my correct registration details and press the register/sign up button, then my account should be created, and I can start using the application.	The system must allow user to provide their details to register their account. The system must be able to store the user's account details in the users' database.
Homepage with navigation tab.	As a logged in user, I want to be able to see a homepage with a navigation bar, so that I can navigate to different places of the application.	Given that I am logged in the application, When I go to the homepage, Then I should see a navigation bar that will redirect me to different pages of the application.	The system must be able to direct the user to the pages/interfaces they wish to see/use. The system must be able to take the user to the previous page(s).
Personal Profile Page.	As a logged in user, I want to be able to see my profile page, so I can see, read and or update information about my account.	Given that I am logged in and I am on the homepage, When I press the label of Profile Page on the navigation bar, Then I should be redirected to the personal profile page where I can see information about my account.	The system must display the user's account details. The system must allow the user to update their account information. The system must allow the user to delete their account.

Software Architectural Style for The System:

A multi-tier (3-tier) architectural style will be used for the software-to-be. The 3-tier architectural style organises software components into 3 logical tiers. The 3 logical tiers will be:

1. The **presentation tier** – the user interface (UI)
2. The **application tier** – this is where the data is processed
3. The **data tier** – the database management system (DBMS) which is where data processed by the application is managed and stored.

Why this architectural style chosen?

1. Faster development: Each tier can be developed simultaneously; this will allow the team to meet the client's time deadlines for a functional final product.
2. Improved Reliability: This style will satisfy the client's needs for a functional and reliable system. The performance of a tier is less likely to be affected by the failure of a separate tier.
3. Scalability: Tiers can be scaled independently