findmytradie

Title: 4th year Functional Specification

Project Name: FindMyTradie

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1. Introduction

1.1 Overview

FindMyTradie is a mobile and web application used by customers who require the services of a tradesperson. The application will allow users to search for tradespeople in their locality and to filter their search based on their specific requirements (e.g Electrician, House Rewire). The customer will be able to see reviews and ratings on tradespeople before selecting and messaging them to organise a job. Our application will then be able filter the job before searching with filters such as job type, date and location to refine the search of tradespersons that are available.

This system will have two ends to it, the customer side and the tradesperson side. The application will allow tradespeople to manage their own profile, take job requests and handle payments from customers. The tradesperson will be able to set times that they are not available so that they will be taken off the search. The tradesperson end will also be able to receive messages in the app.The application will make life easier for both the tradesperson and the customer.

1.2 Business Context

1.2.1 Competitors Analysis

We researched a number of different applications and websites that shared the same ideas and functions of our project and found both a variety of good and bad. Firstly we looked at the competitors which had the same target idea as ours which was finding a customer a tradesman, but we found more cons than pros in these websites and apps.
The first competitor we found was that the customer would post that they needed (e.g Electrician for a house rewire). This post would then go out to all the tradesmen in the area of the customer and they would then get in contact with the customer. We found this very poor as firstly you didn't need to verify your phone number while signing up so that could lead to a potential malicious spam, secondly the main issue we found was that we the customer didn't get to choose the electrician we wanted. This was concerning because I was spammed within 2 days of posting the job with phone calls and texts from ten plus tradesmen about my post. I then tried to delete my post and account but I was unable to within the website.

In our application you will need to verify your phone number. We will use twilio which is an SMS verification API.

The other competitors we found felt very outdated and had the same idea as above where I would post on a job feed rather than getting in direct contact with the electrician I would like.

Although we did find some booking applications that did have good UI design features that we feel we could incorporate into our design.

1.3 Glossary

React Native - Javascript library for building UI

MongoDB - database

Stripe - online payment system

Twilio - SMS verification API

2. General Description

2.1 Product / System Functions

The general functionality of the application is to allow every day people who are looking to get in contact with a tradesperson by signing up to the application and getting in contact with them via message or call. The customer will be able to then describe through text and photos what type of job they are looking to be done. Once the job is completed the customer will be able to pay for the job through the application using a payment system.

The application relies on user interaction, most of the data is user entered so below is a brief breakdown of each user's functions on the application.

2.1.1 User Flow

Log In / Register

- *Email*
- *Password*
- *Name*
- *Address*
- *Phone Number*

Forgot Password

- *Provide Email*

Search For Tradesperson

- **Filter search by:**
  - *Trade*
  - *Type of work*
  - *When*
  - *Location*

Select Tradesperson

- *Message*
- *Call*
- *Leave review*

Edit Account Details / Delete Account

2.1.2 Tradesperson Flow

Log In / Register

- *Email*
- *Password*
- *Name*
- *Address*
- *Phone Number*
- *Trade*
- *Qualification ID’s*

Forgot Password

- *Provide Email*

Edit Account Details / Add Details / Delete Account

- *Qualifications*
- *Skills*
- *Previous Work*
- *About me*

2.2 User Characteristics and Objectives

The goal for FindMyTradie is to make it easier for both the tradesperson and user to connect with each other with ease. The expectation of the customer is that they sign up to the app and within minutes they would have found a potential tradesperson in their area that they can get in touch with as soon as possible. Their expectations as well would be to see reviews of tradespeople so that they can get a rough estimate of their work (e.g. the tradesperson profile has pictures uploaded of their previous work).

On the other hand, the expectations of the tradesperson for the application is that they sign up to the application and make themselves available for potential customers by creating their user profile and waiting for customers to message or call them about potential job opportunities.

2.3 Operational Scenarios

2.3.1 - Use Case 1

Customer or Tradesperson Signs Up to FindMyTradie

A ***customer*** is looking for an electrician so it will sign up to the application with either google sign in or manually entering the details into the application itself. The customer will then accept that the application can use their location to determine what area they are interested in finding a tradesperson in.

A ***tradesperson*** is looking for work so signs up to the application. The tradesperson will have to sign up using the “tradesperson” section where it will be brought to a different sign up page to the customer. The electrician for example will have out information about themselves and can also include a company logo for their profile picture. Upon signing up the worker will be asked for information such as their name, about them, address, trade, skills, work experience (past companies) and they can also include some photos of previous work they have completed.

2.3.2 - Use Case 2

Customer wants to get in contact with an electrician for a rewire.

The customer will click on the search bar and will click on “Electrician” in the trade box, they will then pick the job type from a (e.g. rewire), the customer will then be asked for a rough estimate of a date (e.g. today, this week, two weeks etc.). This will narrow down the search of possible electricians they could find and then they can enter the location of where they are looking for the work to be done or also use their own location. The customer will then be provided with a list of electricians where they can see their profiles and can determine which one they want off the profile the electrician has set up and also the rating past customers have given them in the reviews. When the customer decides on (e.g. Larry), they will click on Larry’s profile and have an option to ring Larry through their own phone, or get in contact with Larry through our app.

2.3.3 - Use Case 3

A plumber gets a message from a client and wants to communicate with them.

A plumber gets a notification on their phone that “Paul” has sent them a message. The plumber will go into the app and go to their message where they will see they have one new message from Paul. They will click into the message and can now reply to Paul and sort out details of the job for example, date, time and cost.

2.3.4 - Use Case 4

Tradesperson wants to verify their qualifications.

Tradesperson signs up and is given the option to upload their documents for admins review. If the documents are approved, the tradesperson will be flagged as verified.

2.3.5 - Use Case 5

User wants to delete their profile

If the user is looking to delete their profile they can do so by going into the app settings and clicking on **“Delete Account”**. This will remove their profile from our database and their account will no longer be able to log into our app.

2.4 Constraints

2.4.1 - Data protection

One of the issues we will have to face is privacy of users' information. The user will be entering their details into our system so it is our responsibility to ensure that their data is not leaked.

2.4.2 - Usability

The application should be very responsive and ensure that when sending messages through the application that they send. An issue that could stop messages not sending would be a poor internet connection.

2.4.3- Time and Deadlines

We need to allow ourselves time to use the application and test it thoroughly to ensure that all features work smoothly for the user.

2.4.4 - Budget

As of now our application has no costs but in the future some technologies and software we might implement might cost money so it is important to keep the budget low.

3. Functional Requirements

3.1 Login

3.1.1 - Description

The login feature provides secure access to the application. If the user has an account created they can enter their email and password to gain access, there should be two options: a customer sign in and a tradesperson sign in.

3.1.2 - Criticality

Login is crucial for our application, without a specific login for each type of user we can not differentiate between a customer and a tradesperson. If the tradesperson was logging in as a user they wouldn't be able to access the necessary features and vice versa.

3.1.3 - Technical Issue

We would need to encrypt the passwords of users and we would have to compare the password entered with the saved passwords in the database so this would have to be done by comparing two encrypted passwords for data protection.

3.2 Register

3.2.1 Description

In order for anyone to use the application they must be a registered user so the registration feature will prompt users to enter their information and select the account type they want to open, the details needed will be different for the tradespeople as we will need to know their trade etc.

3.2.2 Criticality

We collect all the information from the users here, without this functionality we would have no data and no users.

3.2.3 - Technical Issue

As we stated before we will need to encrypt the users password for storage in the database.

3.3 Forgot Password

3.3.1 - Description

This function will allow users to request to change their password, if the user is an existing customer they can enter their email address and we will send an email prompting them to change their password, which we will then encrypt and enter into the database.

3.3.2 - Criticality

This is important because users tend to forget passwords or need to change them for various reasons.

3.3.3 -Technical Issue

Not much technical issues here, more user issues, if the user forgot what email they used or entered the wrong one.

3.4 - Search For Tradesperson

3.4.1 - Description

The application must allow customer users to search for tradespeople and filter their search by their specific needs and date.

3.4.2 - Criticality

This is important because users would spend way too much time looking through all of the available tradespeople if we had no search and if they don't provide a date range the tradesperson may not be available so this cuts out time wasting on both ends..

3.4.3 - Technical Issue

We will need to search the database and match the search criteria with the data we have in our database, there could be an instance where no results are available for the user because there is no tradesperson matching the criteria.

3.5 - Select Tradesperson

3.5.1- Description

Users must be able to select a tradespersons profile and interact with them by either messaging or calling them, these options will be available when the user has entered the tradespersons page.

3.5.2 - Criticality

Without this feature, users will not be able to interact with tradespeople and tradespeople will not be able to take jobs from users.

3.5.3 - Technical Issue

We will need to make this feature available for both the customer and the tradespeople.

3.6 - Edit Account

3.6.1 - Description

Both the customer and the tradesperson must be able to edit their account, this is email, phone, address, pictures(tradesperson), skills(tradesperson) and previous work(tradesperson).

3.6.2 - Criticality

This is important because details of users and tradespeople change frequently so we must allow them to change their details.

3.6.3 - Technical Issue

If the user wants to change their email or phone number we will have to verify that it is theirs.

3.7 - Delete Account

3.7.1 - Description

If the user has no need for an account on the application anymore they should be able to go to the settings on the application and have the option available to be “delete account”. This means their account will no longer be active on our system.

3.7.2 - Criticality

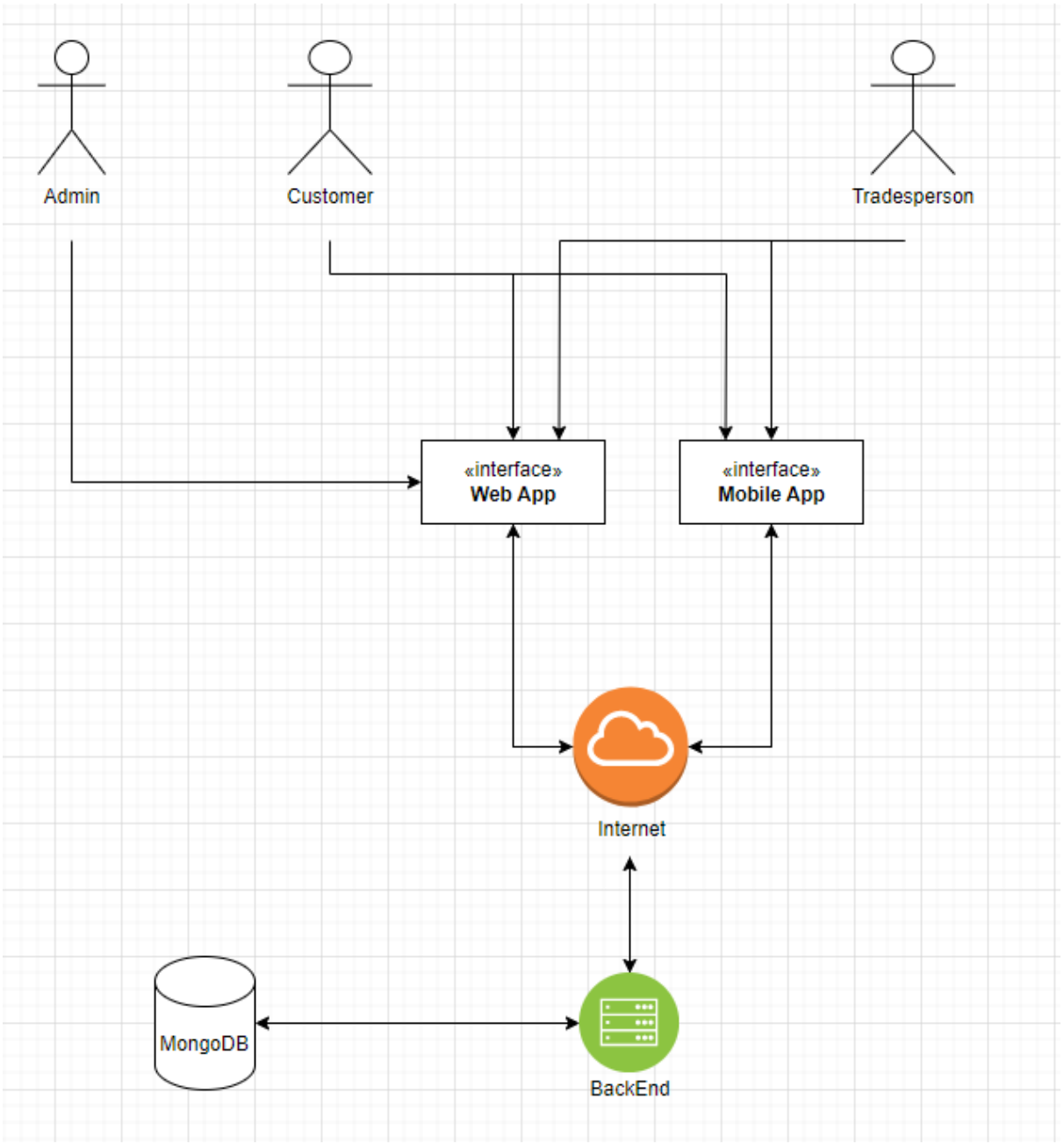
There are a few reasons why it is important to have a "delete account" option on all mobile apps. First, it gives users the ability to control their own data. If a user wants to delete their account, they should be able to do so without having to contact the company or app developer.
Second, it helps to protect the user's privacy. If a user's account is deleted, their data is no longer accessible to the app.
Finally, it helps to keep the apps data clean and organised. If users are able to delete their accounts, it will help to keep the apps data more accurate.

3.7.3 - Technical Issue

We will need to ensure that when the user clicks the “delete account” button that all their data is removed from our database to ensure that their privacy is protected.

4. System Architecture

This section describes a high-level overview of the anticipated system architecture showing the distribution functions across (potential) system modules. Architectural components that are reused or 3rd party should be highlighted.

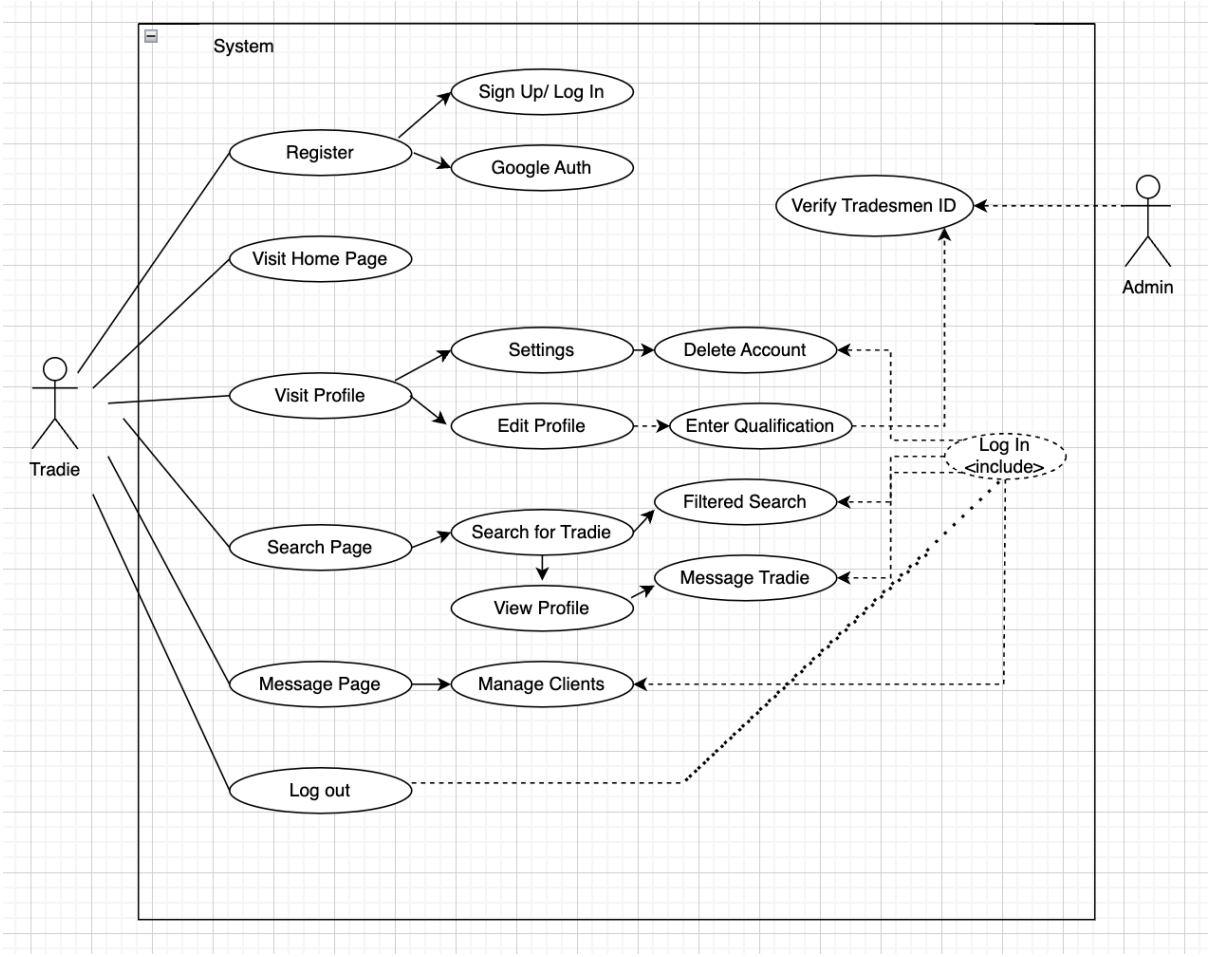


5. High-Level Design

This section should set out the high-level design of the system. It should include one or more system models showing the relationship between system components and the systems and its environment. These might be object-models, DFD, etc.

5.1 Use Case Diagram

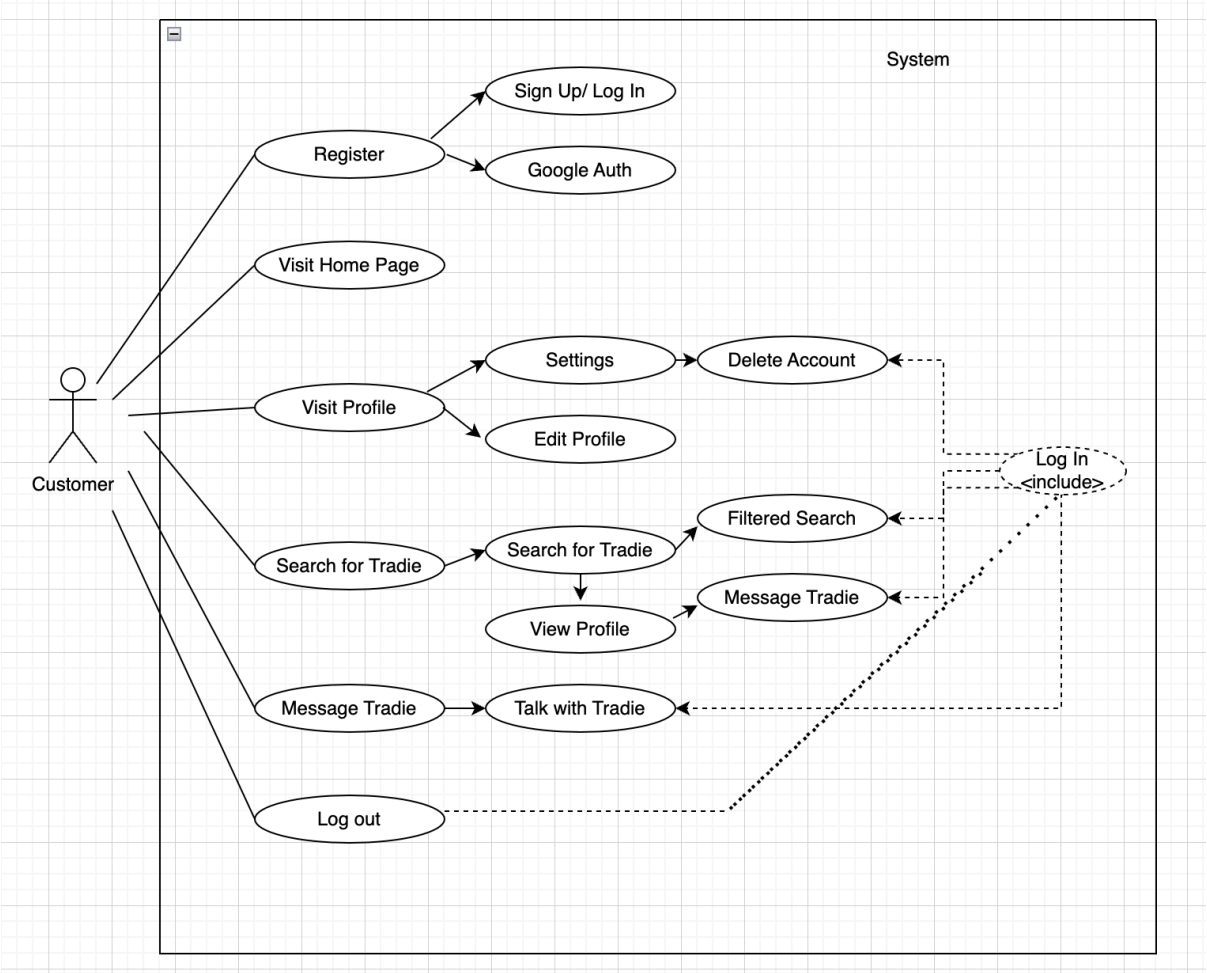
5.1.1 Tradesperson



Here we can see a case diagram of the tradesperson's side of the application. This explains the relationships between the objects in the system. We can see that the tradesperson will have a different side of the application to the customer where they can deal with all incoming messages etc. Also this side of the system will have an admin where the system administrator can verify the tradespersons qualification details. This will be done by where the Tradesperson will upload a photo of their details or provide their ID and the admin will then look it up and see if they are qualified or not. They will then say true or false in the database and a verification tick will appear beside the tradesperson

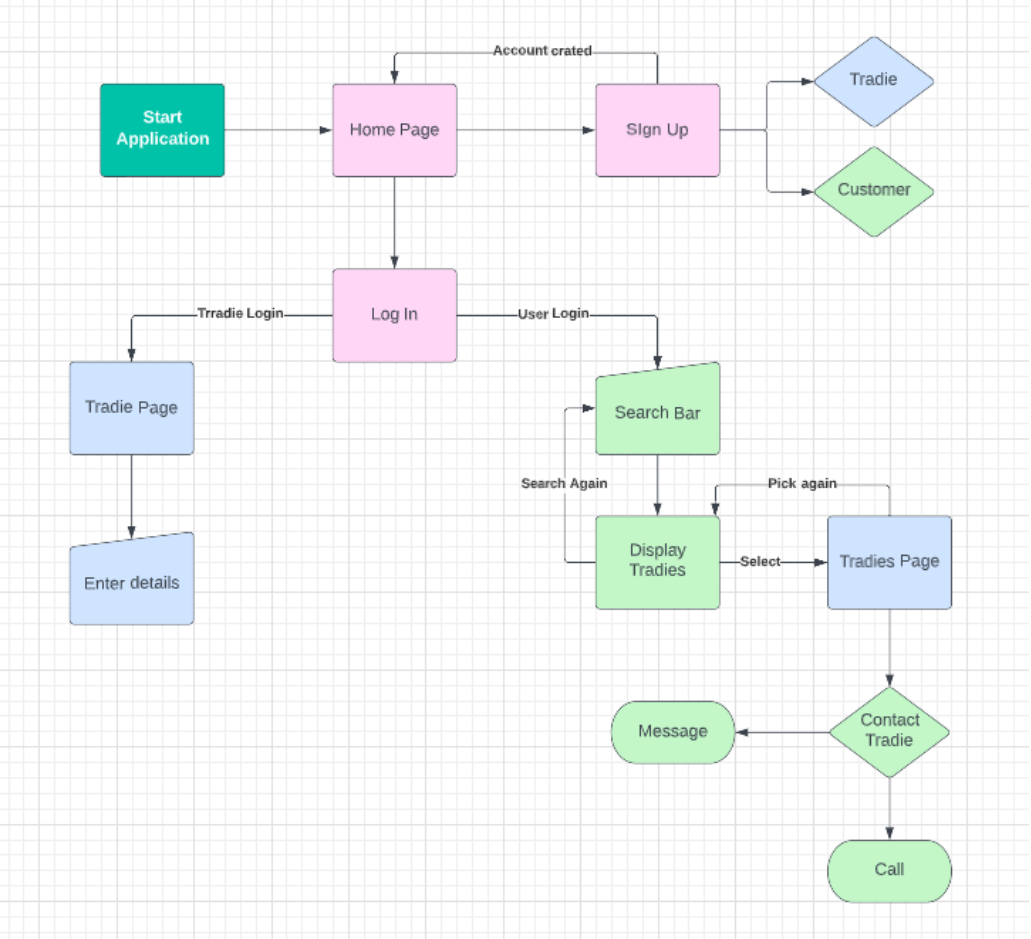
A tradesperson can have an unverified account too but will show no verified tick.

5.1.2 Customer



This side of the application is where the customer signs up and gets in touch with the tradie and shows the steps in doing so. For all of these functions to work you must be logged in as show in the diagram log in <include>.

5.2 Flow chart



6. Testing

Firstly we will have to do usability testing to ensure the app is easy to use. We will run these tests by getting a select group of users ranging from different age groups to use the application and complete a series of tests to ensure they can easily find their way around the application.

Functionality testing will be required to ensure all features work correctly such as user sign up, sms chat etc. The application is to be used on both phones and we so we will need to do compatibility testing to ensure the app works on all devices such as iPad, iPhone, etc.

We will need to do performance testing to ensure the app runs smoothly, this can be done by stress testing the application by having multiple users on it at the same time to ensure that this doesn't affect the apps performance.

Finally, security testing will be crucial as we will be withholding people's information so it is very important to ensure the app is secure. This can be done by using a security scanner which would check for common vulnerabilities or for the web version using a web firewall to test for vulnerabilities. Penetration tests can also be run to attempt to exploit the app.

7. Preliminary Schedule

This section provides an initial version of the project plan, including the major tasks to be accomplished, their interdependencies, and their tentative start/stop dates. The plan also includes information on hardware, software, and wetware resource requirements. The project plan should be accompanied by one or more PERT or GANTT charts.