Rapid System Development ICA Part 1

Design Document

1 Purpose

The purpose of my application is to provide an effective and user-friendly method for academics to log their daily activities as to help them compare where they are within their workload allocation. The main function of this application is to track lots of activities for an academic and be able to store them somewhere so they can be accessed when needed. The application will also have to include a summary of the activities undertaken in a specific time frame. This will make it easier for the user to compare what they have to an allocation.

Subsequent of the academic using this application for a prolonged period, a comprehensive log will form which can be used to compare with their allocated time schedule at the start of the year.

Having this data can help the university work on optimising the plans that they give to members of staff and improve the communication between the teachers and other parts of the university when it comes to time management and workload.

2 Content and Functionality

At the end of this module the app should be able to log new activities that the user completes throughout the day and save them to a data store. The activities should include some information, and should include a name, subset, duration and any additional information. The saved activities should be able to be accessed by the user for reference. The stored activities should be able to be edited and deleted by the user and should be displayed in full for every recorded activity.

The user should be able to edit their personal information to keep the data relevant and up to date. This could include email, title, name or phone number.

Functionality:

Activity
-   Add new activity
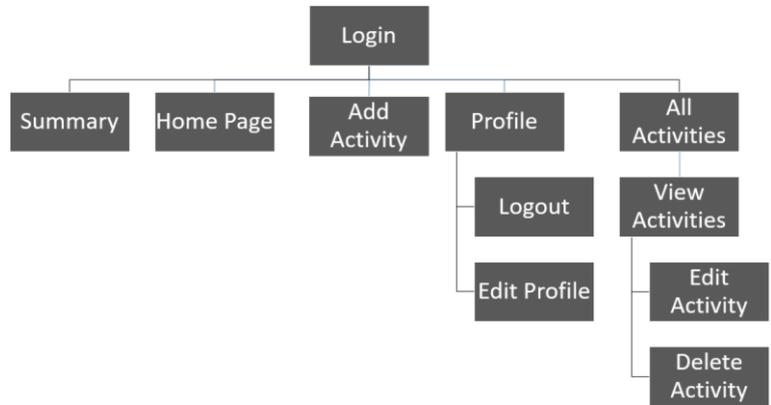-   Delete activity
-   Edit activity

Profile
-   Update Title
-   Update Name
-   Update Phone Number
-   Update Email
-   Logout

Summary
-   View Specific Activities

3 Site Structure

Based upon your content analysis in Section 2 develop an application/site architecture and include a map of your application/site here. Think carefully about how the application/site will be used.

The site structure for my application will be very fluid, as planned on the above diagram. There are not many layers to the diagram because I want all the different pages of the application to be available with as little effort as possible. The pages on the second row will all be available to access from each other suing a hot bar with buttons to swap between any of the pages.
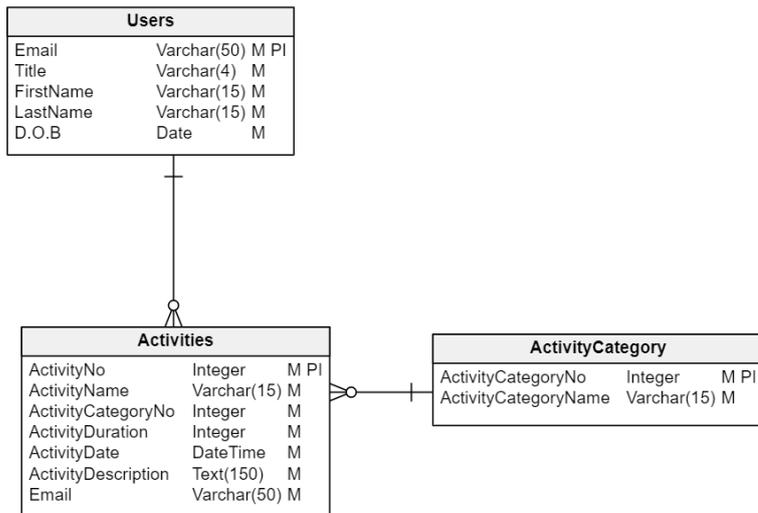
4 Users

I am intending that there will only be on type of user for this application, academics. Having this in mind will mean that I can build my application solely around this user, optimising the service to be as user friendly as possible. Their role will be to add activities in when they do them and build a log of their activities over the course of a year. This will be turned into a tool for them to use throughout the academic year to check what work they did at specific times. This will help them in comparing their fixed time allocated plan with what work was completed.
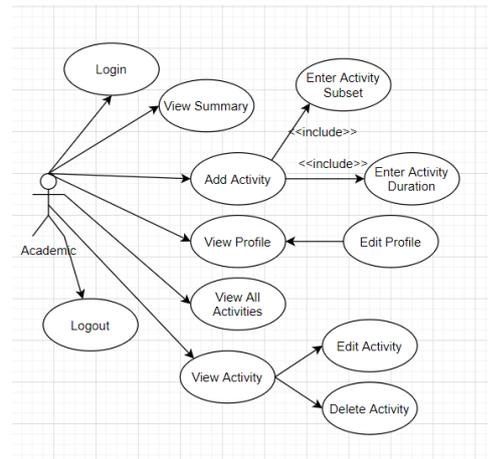
I have created a case diagram to display the relationship that the user will have with the application. (The user will have access to all parts of the application because it will be built around them.)

I have decided to not include a function for deleting a profile because a profile will automatically be available for the user once they are on the user list. If the user has an account in the PowerApps group then then I am happy with keeping them

5 Data Model

Users

Email	Varchar(50) M PI
Title	Varchar(4) M
FirstName	Varchar(15) M
LastName	Varchar(15) M
D.O.B	Date M

Activities

ActivityNo	Integer M PI
ActivityName	Varchar(15) M
ActivityCategoryNo	Integer M
ActivityDuration	Integer M
ActivityDate	DateTime M
ActivityDescription	Text(150) M
Email	Varchar(50) M

ActivityCategory

ActivityCategoryNo	Integer M PI
ActivityCategoryName	Varchar(15) M

The data model that I have created is simple. And only includes 3 tables. For the users table I have decided to use the email as a primary key. This is because no 2 emails are the same and for this application it was a really good way of identifying a person. The activity number and category number were also good primary keys to use for the other tables because it can be easily tracked to each specific activity. I have got a 1 to many relationship between the users and activities because I am expecting each user to log many activities over the duration of a day, week, month etc.

The activity category table is separate to normalise the tables further. It represents the category that each separate activity will fall into. Every activity will only be in 1 category (admin, planning for lectures, meetings etc.) but each category could be used several times in a day. Of course, the primary identifiers from the users and category tables are in the activity table as foreign keys.

Data Dictionary:

Attribute	Data Type	Format	Field Size	Description	Example	Validation
Email	String	x@x.x	50	PK for users table	W9017743@live.tees.ac.uk	Must include an "@" and a "."
Title	String		4	Title of user	Mr,Dr	
FirstName	String		15	First name of the user	Kian	
LastName	String		15	Last name of the user	Lake	
D.O.B	Date	xx/xx/xx	N/A	Date of birth for the user	20/05/01	xx/xx/xx
ActivityCategory No	Integer		N/A	PK for the category of activities table	5	
ActivityCategory Name	String		15	Holds the name of the category for activites	Other, Admin, Lecture	
ActivityNo	Integer		N/A	PK for Activity table		
ActivityName	String		15	Holds the name of the	Planning lecture slides	

				activities being completed		
ActivityDuration	Integer		N/A	Shows how many hours the task took	1	
ActivityDate	DateTime	xx/xx /xx xx:xx	N/A	When the activity happened	12/08/20 15:00	xx/xx/xx xx:xx
ActivityDescription	String		150	Space for user to place description of the activity.	Slides for this week completed	

6 Navigation

The navigation that I am planning to use for my application is aimed to be as user friendly as possible, with the aim of creating a system with the fewest number of actions for the user between features of the app.

For this reason, I have decided to use a hot bar as a footer for the application for most pages, with an array of icons included for the user to switch between pages. This will make it only one button away from the home page to most of the pages in the application, and anything beyond that would need a page to itself anyway. The icons used will be hyperlinked to different pages within the application, therefore creating an easy to use navigation system.
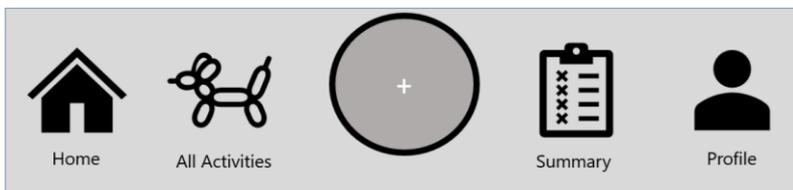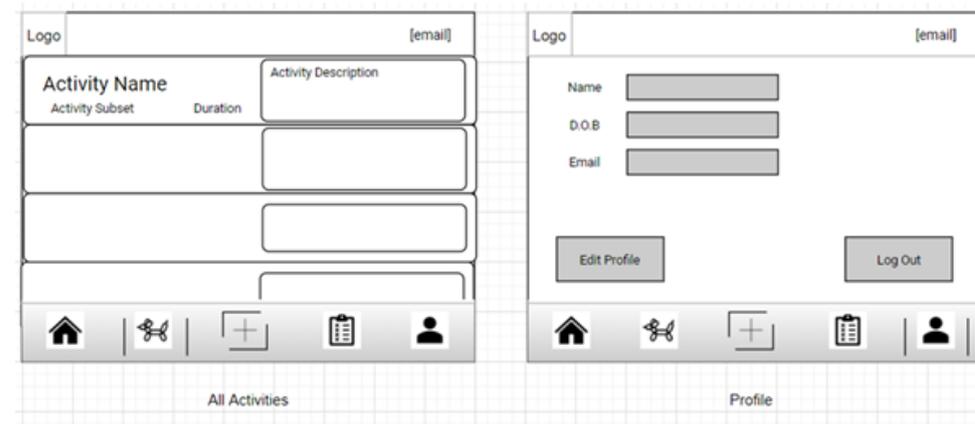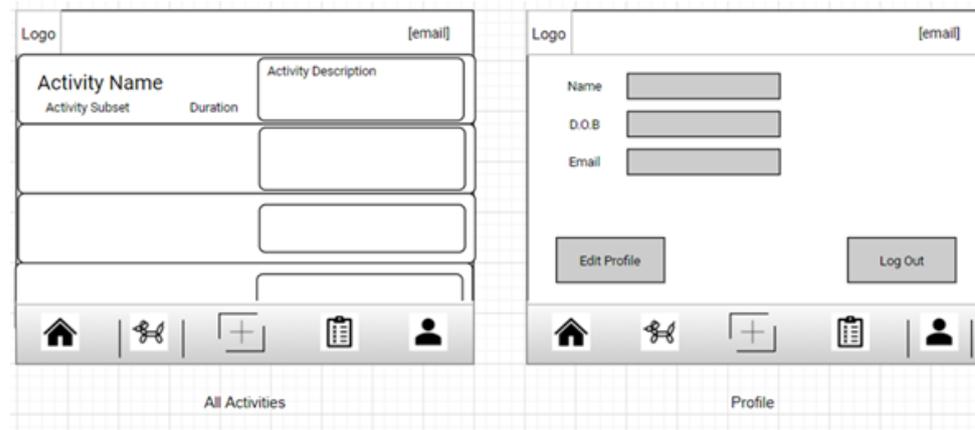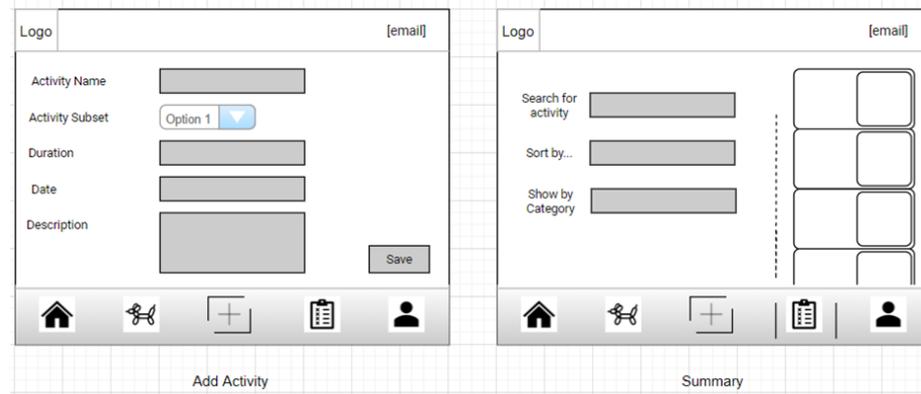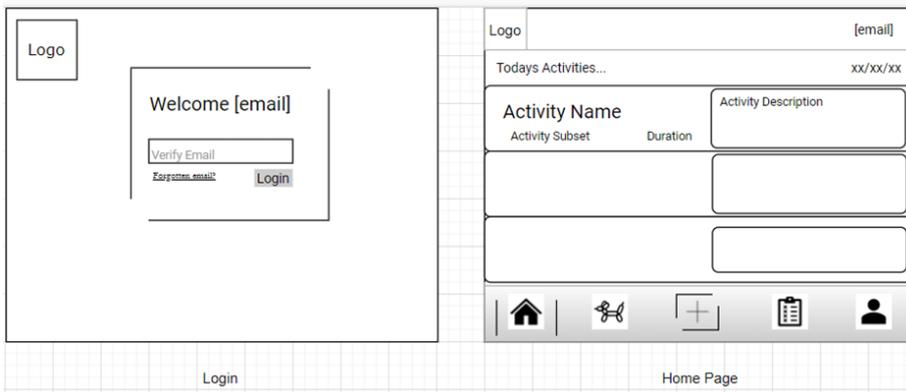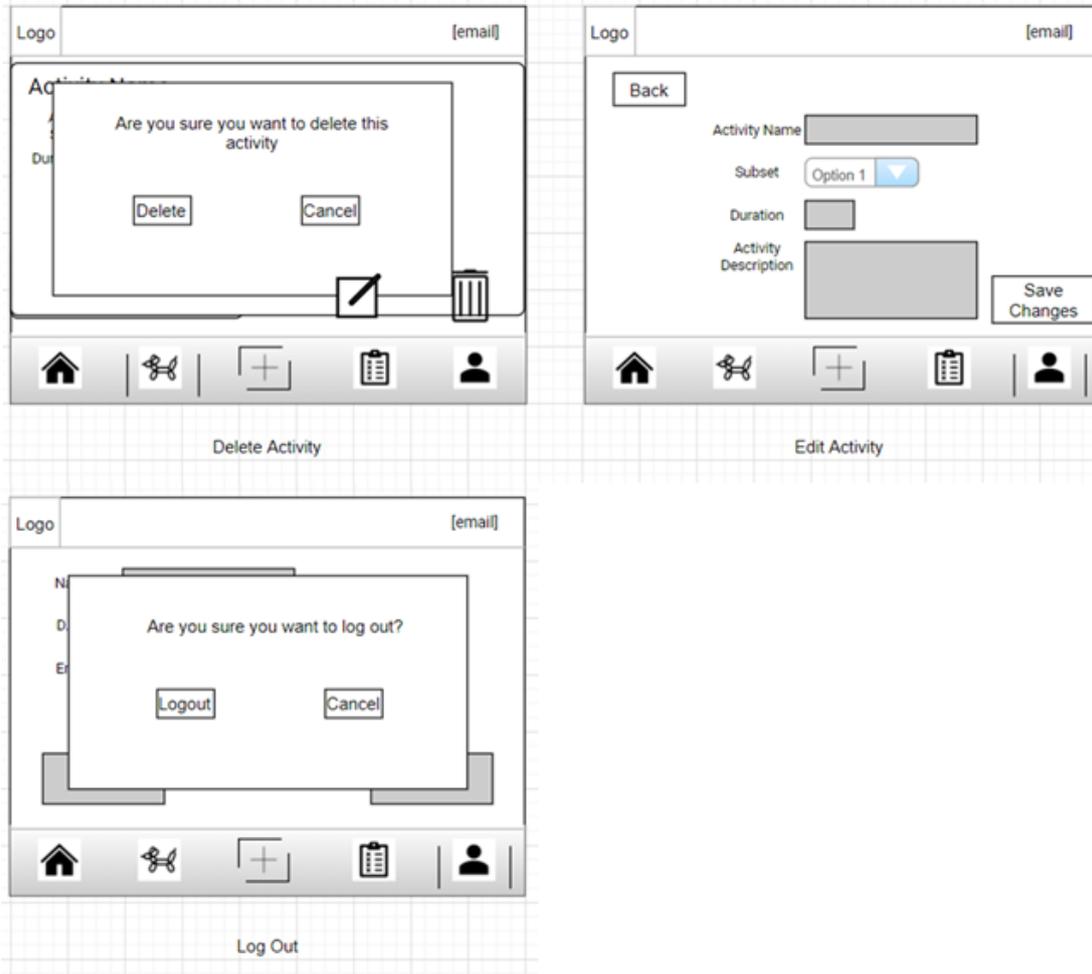

(This is the hot bar that I have designed to use in my application. The centre button is used to add a new activity as this is the sole purpose of the application)

The layout of this application will differ to that of say a website as it will be very interactive with plenty of options on each screen for navigation and getting to different pages. Where a website has a more linear structure, I am planning on creating a fluid navigation structure to make it extremely user friendly and easy to use. Using a hot bar will allow me to do this as it makes it easy to build the application around navigation.

7 User Interface

Login

Home Page

Add Activity

Summary

All Activities

Profile

All Activities

Profile

Delete Activity

Edit Activity

Log Out

When creating the wireframes for my application, I had to keep in mind how I can upscale these from monochromatic templates to an appealing and engaging application. Therefore, I am planning some more specific aspects of the app now.

HEX: #F6771A
RGB: 246, 119, 26
HSL: 25.36, 92.44%, 53.33%

As the application is being created for use within in Teesside University, a desired feel should be achieved through my app that represents the university accordingly. First, I started with the colour pallet that will be used within the app. I decided to stick with light grey and the orange that is used in the university logo, for a modern look. Different shades of this colour will also be appropriate and will be considered during development. The orange gives the palette a warm and exciting feeling without being harsh like a red, which is a good choice for an application of any type. I will also consider using backgrounds of a similar colour or style to use within the application. The font that I have decided to use for my application is Segoe UI because I think it is very suitable to an app, and I want the application to be as user friendly as possible. This is also the font that is used by some big brands like Facebook. Microsoft have also used this in marketing material.

The application I build is planning to be used on a tablet, so the dimensions will be a 4:3 ratio landscape to suit an iPad. This will allow me to make a more detailed application with the extra room that I have on a tablet.

8 Security Policy

With only planning one user to be interacting with the application, I am not really concerned about much security when it comes to the system. I will be using a system within the application to check which email the app is being used on.

This works as a security measure because the user will have to be logged onto PowerApps in order to access the app anyway, so checking which account they are logged into will be guaranteed every time someone opens up the app. I can then check that email against a log of 'users' that are verified to use the application.

This security feature is really basic but I see no need for including passwords into the app, as I am assuming that the person using it will already have the app on their personal device(which should be secure), and they will have had to log into PowerApps with their email anyway.

9 Technology

In the development of my application I will be using MS PowerApps to create the front end of the application. This tool driven approach allows me to quickly create an application from a data source with drag and drop development. This means that there is much less code involved which saves a lot of time, meaning that more general development and scope can be reached in a shorter amount of time. Because PowerApps is very compatible with mobile app development, you can get a good feel of hoe the app will run y downloading the app on a mobile and running the apps through this.

Despite PowerApps being an effective tool in my opinion, if does have some disadvantages that could be difficult to work around. Firstly, you are required to have an internet connection in order to use the website, which is now more of a problem as we are completing a lot more work from home on a domestic Wi-Fi. This means that the development could be slowed down as I am unable to use the university Wi-Fi when developing applications. Domestic Wi-Fi is much more unreliable in addition, so the times that I can work on the module could be affected by an internet connection.

I am planning to use SQL server as the data source or my application. This is supported within PowerApps so it should be simple to add the tables to the development software in order to put the app together. SQL will be useful when dealing with multiple tables withing the database that need to be used in the application. I think that SQL is a good choice despite being more complicated than excel because of its extra functionality, and I am confident that it will increase the standard of the application that I create.

I think that SQL is mostly a highly effective piece of software to store data for my application in, and the only drawback I can think of is that it is a very sophisticated app and could make the database side of the application be more confusing, which in turn would cost me time.