ISYS20182: Practical Project Management and Professional Development

HEALTHY LIFESTYLE APP

PROJECT DEFINITION DOCUMENT

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Introduction

Obesity is at a current high and the best way to fight it would be through the use of technology. A big problem that a lot of people are facing nowadays is trying to stay fit and healthy while trying to stay on a budget and saving time in the process. Technology is a great way to make sure people stay motivated, inspired and on track towards their fitness goals which is why this Healthy Lifestyle application is being created.

The target market of this application is anyone who is looking to improve their lifestyle, get rid of their bad habits and engage with other users just like them within the app. With all these features that are being offered, the user will be able to stay on track with their food intake and their nutrients intake, for example: fat intake, carbohydrates intake, water intake, etc. One of the unique points of this application is the fact that it is open for users to share information with each other. Recipes that can be found online or in other applications are usually generic, but this application lets users post healthy recipes to share with other people. Another vital feature of the application is that it will also make sure to track steps while the user's phone is on in order to add that to the user's daily activity which can then change his/her calorie count for the day.

There are a lot of health applications currently in the market however a lot of them offer different features and none of them have the features that this application will be able to offer. For example, App A allows the user to monitor their daily calorie intake but will not offer what app B offers which is calculating the BMI and body fat of the user. This application will be able to solve these problems and integrate all the features together to make sure fitness becomes a hobby rather than a chore.

The main aim of this Healthy Lifestyle application is to allow an individual to live a better/healthier lifestyle. Within the application, the user will be able to:

- Count the client's daily steps, set a daily average which the user will like to achieve, let them compare to the past step average.
- Count the time in which the user has been active through the day, let them compare to past active times.
- Count the number of calories the user has burned through the day and let them compare it with the past average.

- Calculate the BMI/ body fat of the user giving them a better understanding of their current position, save the data and then let the user compare his previous results also compare the average.
- Allow the user to find exercises that would be suitable to them depending on their weight, age and more.
- Allow the user to input their water consumption/ calorie consumption.
- Set a daily calorie count for the user depending on their height/weight/age and active time.
- Allow the user to post recipes of foods which the user can also search for within the app.
- Allow the user to post on a forum and engage in conversations with different users about their progress and achievements while using our app.

Aims

The application will allow the user to live a better lifestyle by being able to monitor the key aspects of their health needed in order to get healthier such as BMI, calorie intake, step count and their calories burnt.

Objectives

Our objective are:

- A program that must have the ability to help user by counting their daily steps, count the time of activeness of a user, and count the number of calories burned.
- A program that must have the capability to allow user to search suitable exercise, allow healthy food recipe searching, allow user to input water and calorie consumption, and allow engagement between other users through a forum.
- A program that must have the ability to calculate the user's BMI and set the user's daily calorie intake based on the user's BMI.
- A program that is easy to use and understand for the user.
- Produce a report for the user at the end of the day.

Functional Requirements of System

- Must have a step-counting feature that is able to count steps with a satisfying accuracy.
- Would like to show the average steps per day and be able to compare those averages.
- Would like to take time while the step-counting feature is active.
- Must be able to tell how much distance the person has travel along the day.
- Would like to have a timer with different functions (stopwatch, countdown timer).
- Must calculate the approximate calories burned in the day depending of the activity the person has done.
- Must calculate the Body Mass Index (BMI) and be able to tell if the person is in a healthy weight or not.
- Must calculate the Body Fat with accuracy.
- Would like to have a list of exercises, with videos on how to do them and information about the exercise.
- Must store and present information about how much water has the person drank in a day.
- Must store and present information about how much calories has the person consumed in the day.
- Must be able to tell how many calories a person should eat per day.
- Would like to have a list of recipes, with instructions on how to do them and more information.
- Would like to make the users able to post their own recipes.
- Would like to have a forum where users can share and comment.

Project Management

The first step is to build up the communication between team members by creating a WhatsApp chatting group, so that it shares information and important notifications. Through this approach, the team members can determine how to meet up. As the meeting maybe difficult that all members can attend at the same period, so if the attendance rate more than half, the meeting would not be cancelled. After that, those main concepts which were discussed would upload to the chatting group in order to keep on track for those who were absent. To have a meaningful meeting each time, the team members defined several agenda that

must complete at the end, discuss and share ideas which is leading by the enthusiastic members. The team members were assigned different part of tasks and deadline to finish in own time, some complicated tasks of the project were decided to work together. If the person has any problem in the assigned task, it is encouraged to ask the others for help. The team members believe each other in their commitments. However, if any who did not make any contribution in the whole project, they would bear the regrettable result at the end of this module because of the peer assessment form.

Team Members & Responsibilities

Table 1: Table of Team Members & Responsibilities

Name	Roles	Motive
Nur Hazierah Rosdi	Team leader, in charge of the development for diet side of the app.	Good programming and communication abilities. Good communication Is vital when you are the leader of the group as you need to be able to talk to each member of the team and assign tasks through the project.
Juan Ruiz	Database designer, Head of programming department.	Crucial knowledge and understanding of database design, with this addition to the team we will be able to take our databases to high standard.
George Housden	In charge of the development for fitness sector of the application.	Quick thinker whom works good under pressure, past experience in the programming world makes it a good combination of skills which will be beneficial to the overall project success.
Eshant Manghnani	In charge of the development for fitness sector of the application. Head of implementing on android.	Past experience creating android apps essential in this project, also the reasoning behind choosing Android for the platform of the application.

		Additionally, the member possesses good programming skills.
Rex Lei	In charge of the development for diet sector of the application.	Good abilities in programming and also a good problem solver, will be very beneficial in helping other developers during the design period.
Kamil Apolinarski	In charge of the interface and overall design of the application.	Previous experience in interface design as well as app design, crucial in this project as this is the only member which doesn't specialise in programming but more in the creative department.

Sources of Information, Resources Required

The main software that will be needed for this project is Android Studio as it is going to be needed before the team integrate a database and it is also where most of the testing will be done. Android Studio can be downloaded online on their website for free. SQLite is another software the team will be using which is a relational database management system that is used in Android Studio to store user data. The designs of the application interface will mainly be produced using Adobe XD and Adobe Photoshop which are also obtained online. To test the application, the team will use android mobile phones. There are at least two members who owned an android mobile phones. Therefore, the team decided to use them for testing.

Risk Assessment

As with any project there are several risks involved and things that could happen to hinder the development of the project. It is important that these risks are identified now, so a plan can be put in place to deal with them should they occur. Below is a table with all the risks involved with the project as well as the likelihood of them happening and the impact it would have on the project. it also includes measures that should be put in place to avoid them and the correct way to react if the following situations occur anyway. It also shows the importance of each

problem which is the probability times by half the impact. This makes it easier to establish which risks require the most attention.

Table 2: Table of Risk Assesment

Risk	**Likelihood (%)**	**Impact (1-10)**	**Importance**	**To Reduce likelihood**	**Counter measure**
People missing crucial time due to illness	75%	1	37.5	Get work done as early as possible in case of illness near hand in date	Distribute the work the missing member is unable to do evenly to all remaining members *
People dropping out due to illness	5%	5	12.5	Cannot be avoided	Distribute the work the member that dropped out was due to do evenly between other members *
Team members not contributing enough to the project	10%	5	25	Make sure there is frequent communication between all team members	Try to contact the team member on all platforms about it and after 2 weeks if there is no improvement send email to tutor with all team members copied in
Insufficient time to create recipe database	25%	3	37.5	Start the database as early as possible and find a reliable source that can be used for most recipes	Focus on the more popular recipes and leave a system in place for further recipes to be added later
Loss of work due to the	5%	8	20	Always keep at least 2 copies of the	Attempt to recover any lost work and

damage of a hard drive				project with at least 2 members having a copy of the full project or keep a copy of the project on online shared storage	piece together pieces of work that remain
Difficulty creating accurate algorithm for counting steps	30%	8	120	Since this is the main feature of the application focus on this straight away and start testing of this part early using a good amount of people as test subjects	Draw inspiration from similar algorithms online
Difficulty with our program communicating with android devices	10%	9	45	Since this is key for all features to work set this up early so production and testing can begin on the rest of the project	Use the internet to look for solutions from people who have made android applications previously
Difficulty communicating with accelerometer	10%	9	45	Research sufficiently early on	Look up solutions online to draw inspiration from
Difficulty communicating with device storage	10%	7	35	Research sufficiently early on	Look up solutions online to draw inspiration from
Team member(s) struggling with their	20%	6	60	Make sure to the best of our knowledge team	Redistribute work and get people ahead of schedule to help those

part of the program				members are allocated work that plays to their strengths	further behind
Insufficient android phones available to test the device properly	75%	5	187.5	Cannot be avoided	Find friends and family with android devices and ask them to test our application
Insufficient time to complete all desired features	50%	6	150	Create a plan on when each part of the program should be completed by	Decide which parts of the project are most important and most achievable and focus on these
Difficulty with algorithms	90%	3	135	Make sure all algorithms are thought of in the design stage	Use online resources to aid with the solution of these algorithms and target more time to the algorithm
Difficulty communicating due to it being our first group project	15%	6	45	Aim for weekly communication	If the group chat currently set up is not working look into alternative methods of communication

** Where work is being redistributed if different members have different amounts of work left to complete distribute more work to the people with less work left to complete.*

Professional, Social, Ethical and Legal issues

There are several issues related to professional or legal ethics when it comes to creating an application:

In accordance to the chapter 2 of the BCS Code of Practice the group must maintain the technical competence seeking to improve our IT skills from the different sources and keeping up to date with the latest technological advances. We should also adhere to regulations following the standards of the module project and the BCS Code of Practice, BCS Code of Conduct. The group will use the most appropriate methods and tools within our access to develop the application. In respect to the managing of the workload the group should report any overruns to timescales as they become apparent; do not assume that we will be able to recover them later. No one should undertake, or commit to, more assignments than the member can reasonably expect to meet in the given time.

In respect to the chapter 3.3 of the BCS Code of Good Practice we shouldn't steal or abuse user information and since we will be using a database, there will be user information stored in a database which should and will be confidential.

Regarding the BCS Code of Conduct, Public Interest part, is the intention of the group to work without any discrimination and develop an application accessible to everyone.

Concerning the Professional Competence and Integrity, we must be cautious while attempting anything we are not qualified to do when attempting to put newly learned skills to practice which is a risk in this project as most of the members have no experience in the creation of mobile applications. We shall do all the work ourselves, respecting the different viewpoints, accepting any constructive criticism of work and avoiding injuring the others in any form.

Regarding the Duty to Relevant Authority the group must carry out our responsibilities with due care and diligence in accordance with the module requirements. Avoid rising any kind of conflict between the group and the Relevant Authority and not withhold information on the performance of the application or take advantage of the inexperience of others.

Project Plan, Milestones, Effort & Timescale for whole project

Project Start: 19-Nov-18

Display Week: 1

#	TASK	ASSIGNED TO	PROGRESS	START	END
	Phase 1 Planning	All			
	Analyse the market situation	Name	100%	19-Nov-18	24-Nov-18
	Define the problems and constraints		100%	24-Nov-18	27-Nov-18
	Define objectives		100%	27-Nov-18	1-Dec-18
	Define scopes and boundaries		100%	1-Dec-18	5-Dec-18
	Sources of information, resources required		5%	5-Dec-18	10-Dec-18
	Professional, social, ethical and legal issues		5%	10-Dec-18	13-Dec-18
	Allocate team members & responsibilities		5%	13-Dec-18	14-Dec-18
	Phase 2 Analysis				
	Functional requirements		50%	7-Dec-18	10-Dec-18
	Risk Assessment		50%	9-Dec-18	11-Dec-18
	Existing system evaluation		0%	5-Dec-18	10-Dec-18
	Logical system design		0%	14-Jan-19	17-Jan-19

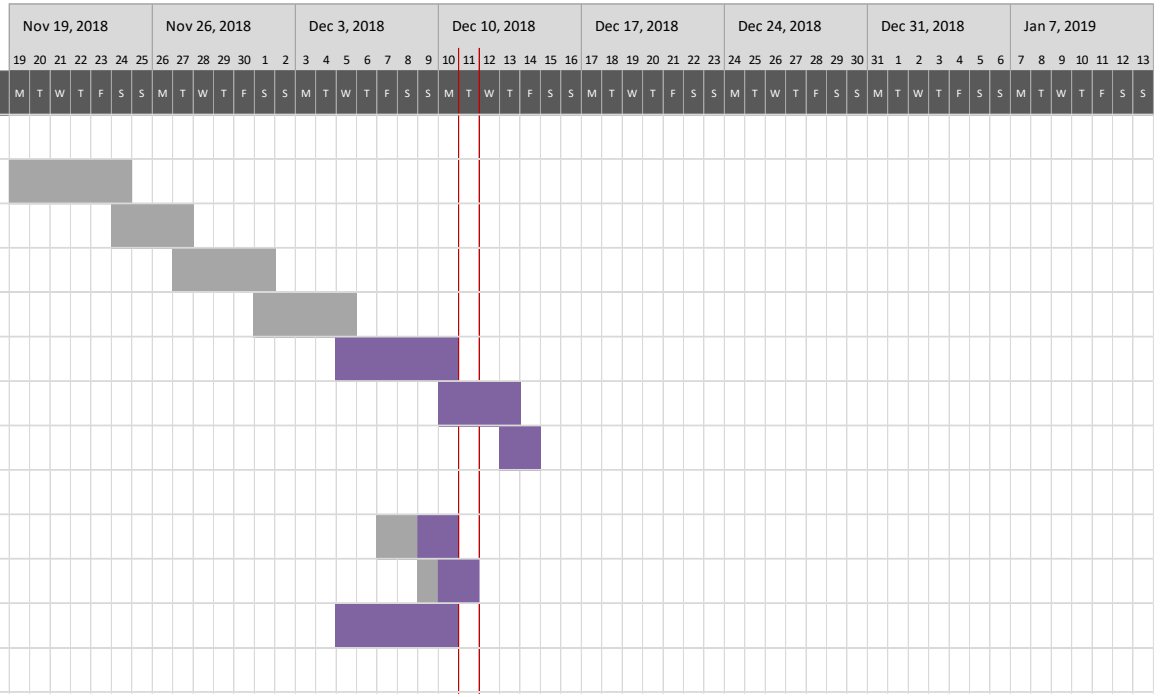
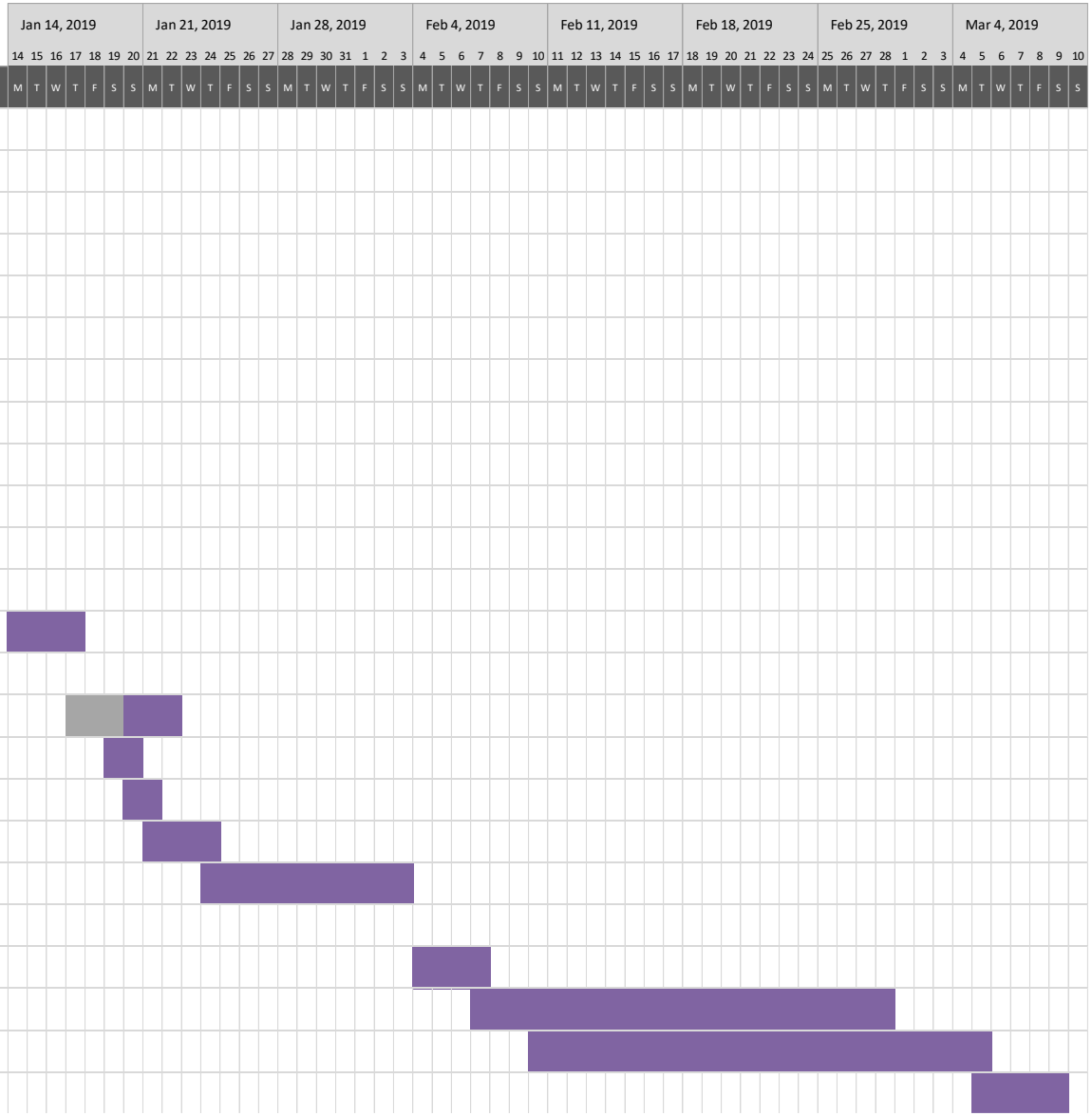


Figure 1: Gantt Chart

Project Start: 19-Nov-18

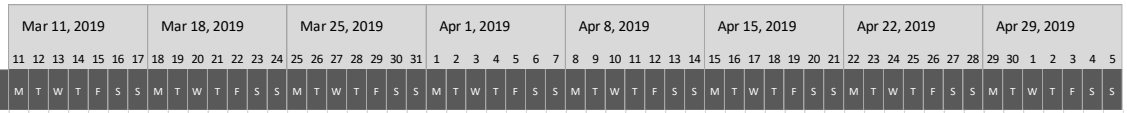
Display Week: 9

TASK	ASSIGNED TO	PROGRESS	START	END
Phase 1 Planning	All			
Analyse the market situation	Name	100%	19-Nov-18	24-Nov-18
Define the problems and constraints		100%	24-Nov-18	27-Nov-18
Define objectives		100%	27-Nov-18	1-Dec-18
Define scopes and boundaries		100%	1-Dec-18	5-Dec-18
Sources of information, resources required		5%	5-Dec-18	10-Dec-18
Professional, social, ethical and legal issues		5%	10-Dec-18	13-Dec-18
Allocate team members & responsibilities		5%	13-Dec-18	14-Dec-18
Phase 2 Analysis				
Functional requirements		50%	7-Dec-18	10-Dec-18
Risk Assessment		50%	9-Dec-18	11-Dec-18
Existing system evaluation		0%	5-Dec-18	10-Dec-18
Logical system design		0%	14-Jan-19	17-Jan-19
Phase 3 Design				
Create the conceptual design		50%	17-Jan-19	22-Jan-19
Language selection		0%	19-Jan-19	20-Jan-19
DBMS software selection		0%	20-Jan-19	21-Jan-19
Create the logical design		0%	21-Jan-19	24-Jan-19
Create physical design		0%	24-Jan-19	3-Feb-19
Phase 4 Implementation				
Install the DBMS		0%	4-Feb-19	7-Feb-19
Create the database		0%	7-Feb-19	28-Feb-19
Insert the data		0%	10-Feb-19	5-Mar-19
Code the step counter, distance traveled and calories burned		0%	5-Mar-19	12-Mar-19



Project Start: 19-Nov-18

Display Week: 17



TASK	ASSIGNED TO	PROGRESS	START	END
Phase 4 Implementation				
Install the DBMS		0%	4-Feb-19	7-Feb-19
Create the database		0%	7-Feb-19	28-Feb-19
Insert the data		0%	10-Feb-19	5-Mar-19
Code the step counter, distance traveled and calories burned		0%	5-Mar-19	12-Mar-19
Code the ability to calculate BMI and body fat		0%	12-Mar-19	19-Mar-19
code the ablity to find exercises with videos, pictures/descriptions		0%	19-Mar-19	26-Mar-19
code calorie and water consumption		0%	26-Mar-19	2-Apr-19
code the forum where recipes are avaliable, user can post/comment		0%	2-Apr-19	9-Apr-19
Phase 5 Testing				
Test the system		0%	9-Apr-19	14-Apr-19
Fine-tune the system		0%	11-Apr-19	22-Apr-19
Evaluate the systems and its application programs		0%	22-Apr-19	25-Apr-19
Phase 6 Report				
Evaluation		0%	25-Apr-19	4-May-19