



Faculty of Computer Science and Information Technology

Jungle Trekking Attendance Record System

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Jungle Trekking Attendance Record System

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This project is submitted in partial fulfilment of the
requirements for the degree of
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Projek ini merupakan salah satu keperluan untuk
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ABSTRACT

The Kuching City Hash Club is a club that have a run in the jungle on every Saturday. They had attendance taking system, but the attendance records are not available to all members. The attendance records system is very important in the attendance system. It helps us to check the previous attendance records and details. This may help us know about the details of the attendance we take and make sure the attendance is taking successful. This can prevent we miss to take the attendance and do not affect our attendance rate or achievement. The proposed system is an attendance records system for the Kuching Hash Club by showing the attendance record details to club members. All the information will get from their server. The users allow login to their accounts to see their details such as profile and their attendance records of the run. The system has some additional functionality that is tracking their run details. They may know how much distance, time, pace and calories they burn in a run. The system will develop in a mobile application with a simple design and user-friendly. They can easily use the system to get the information they want.

ABSTRAK

Kelab City Hash Kuching adalah sebuah kelab yang berlari di hutan setiap hari Sabtu. Mereka mempunyai sistem kehadiran, tetapi rekod kehadiran tidak tersedia untuk semua ahli. Sistem rekod kehadiran adalah sangat penting dalam sistem kehadiran. Ia membantu kami menyemak rekod dan butiran kehadiran terdahulu. Ini boleh membantu kami mengetahui tentang butir-butir kehadiran yang kami ambil dan memastikan kehadiran itu berjaya. Ini boleh menghalang kita merindui kehadiran dan tidak menjejaskan kadar kehadiran atau pencapaian kita. Sistem yang dicadangkan adalah sistem rekod kehadiran untuk Kelab Kuching Hash dengan menunjukkan butiran rekod kehadiran kepada ahli kelab. Semua maklumat akan diperolehi dari pelayan mereka. Pengguna membenarkan log masuk ke akaun mereka untuk melihat butiran mereka seperti profil dan rekod kehadiran mereka dalam jangka masa. Sistem ini mempunyai beberapa fungsi tambahan yang mengesan butir-butir larian mereka. Mereka mungkin tahu berapa jarak, masa, langkah dan kalori yang mereka terbakar. Sistem ini akan dibangunkan dalam aplikasi mudah alih dengan reka bentuk yang mudah dan mesra pengguna. Mereka boleh mudah menggunakan sistem untuk mendapatkan maklumat yang mereka mahu.

Chapter 1

Introduction

1.1. Introduction

In this modern society, every people rely on technology to make an easier life. Everyone used their phone to access the internet to keep the data or information and able to get the information. But the current system for the Kuching City Hash Club is taking the attendance only. The members of the Kuching City Hash Club cannot check their attendance. This very inconvenient because the person in charge need to print out the attendance record in paper form each month to let the members check their attendance to make sure their attendance got recorded. Because of data collected every time, sometimes, it will mistake, and the people don't know may cause the data missing.

This proposed system developed to solve all factors above and introduce a system with additional functionality. An attendance system mobile apps will be created because it is more convenient to check their previous attendance records and prevent the data missing. Because of all the users are Kuching City Hash Club members, they will walk or climb many steps and burn many calories, this app can measure the steps they walk and how much calories they burn on a jungle run. This app will be able to calculate the distance and time of a run. After finishing a run, the app will show all the details of the run and encourage the users to try to improve in the next run.

1.2. Problem Statement

For a Kuching City Hash Club, they have their own attendance taking system. But the problem is the attendance record not available to all members. They cannot check their own previous attendance at any time or any place they want. The only chance they check their own attendance record is to wait for the person in charge to print out the attendance record in paper

form each month. This is the only way for them to make sure the attendance is correct and do not miss any attendance records. This is inconvenient and may cause the data missing. Sometimes missing certain attendance will affect their achievement or target because they rely on the attendance to set targets.

1.3. Scope

The jungle trekking attendance record system is developed as an Android application for the members of the Kuching City Hash Club.

1.4. Objectives

1. To design a system for the Kuching City Hash Club to show the members' attendance.
2. To show time, distance, steps and calories of a run.
3. To implement an Android application for the jungle trekking attendance record system.

1.5. Methodology

This project is carried out by using Rapid Application Development (RAD). Based on (Powell-Morse, 2016), RAD describes a method of software development that heavily emphasizes rapid prototyping and iterative delivery. RAD is an alternative to a typical waterfall development model. This allows us getting the working product quickly and able to do prototype testing in a limited time. This model gets four phases

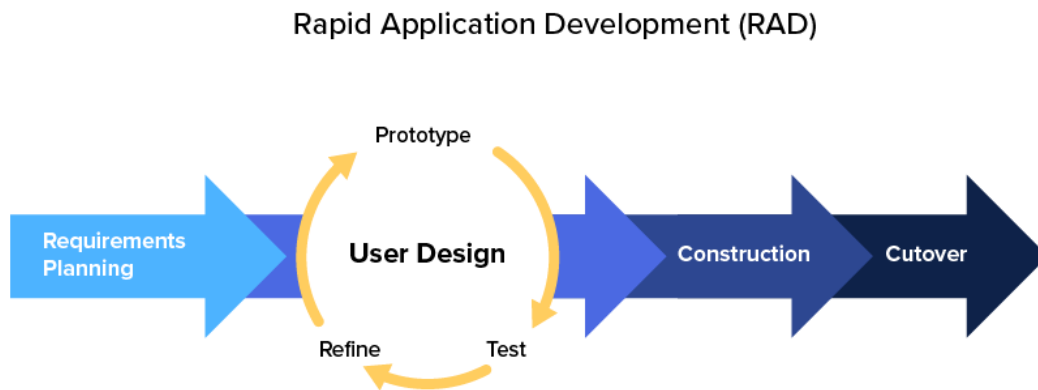


Figure 1.1 Rapid Application Development Model

1.5.1. Requirement Planning Phase

During this phase, requirements are collected from a stakeholder. They will list out what they needed in this system and make sure the developer can understand the system they needed to create. Research about the project based on a specific requirement and estimated the project timeline to make sure the project can finish on time.

1.5.2. User Design Phase

During this phase, the developer needs to design a prototype, testing the prototype to get feedback from users and improve the prototype based on the feedback they given. For the jungle trekking attendance record system, the developer needs to develop a prototype and test the prototype to make sure it's user-friendly or not. After that, improve the prototype based on their feedback.

1.5.3. Construction Phase

During this phase, the developer needs to develop the system and testing the system. Fix the bug or error in the system when it been detected. Multiple user testing will be done before

release the full system. For the jungle trekking attendance record system, we need to test the interface in different types and the different sizes of the phone to make sure that the interface can fix the screen.

1.5.4. Cutover Phase

The software can be released to the public after the implementation was approved by the stakeholder and no more changes will be made unless prompted by stakeholders.

1.6. Significance of Project

To build an attendance system that will take over the current system used that will more efficiency and convenience for all users. This project will allow the user to use a more efficient and convenient way to check all the attendance of run. The person in charge will not require to print out the attendance record in paper form to show to all members each month. The data will record more easily and no need to worry about the data will be missing or misplaced the recorded paper.

1.7. Project Schedule

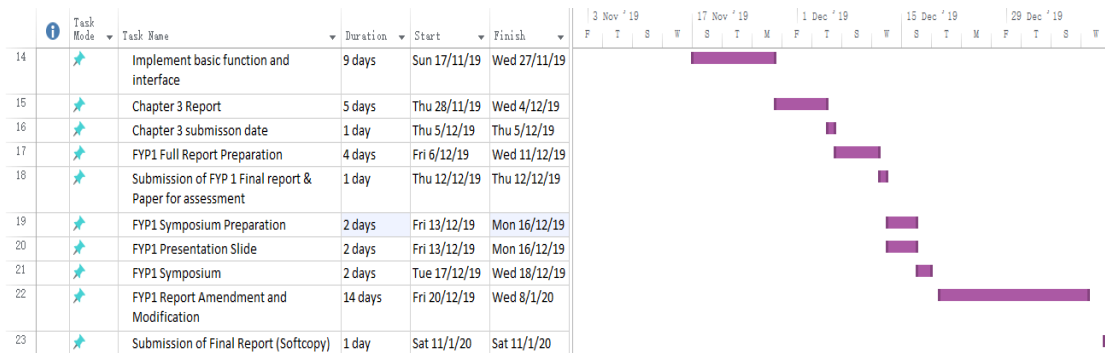
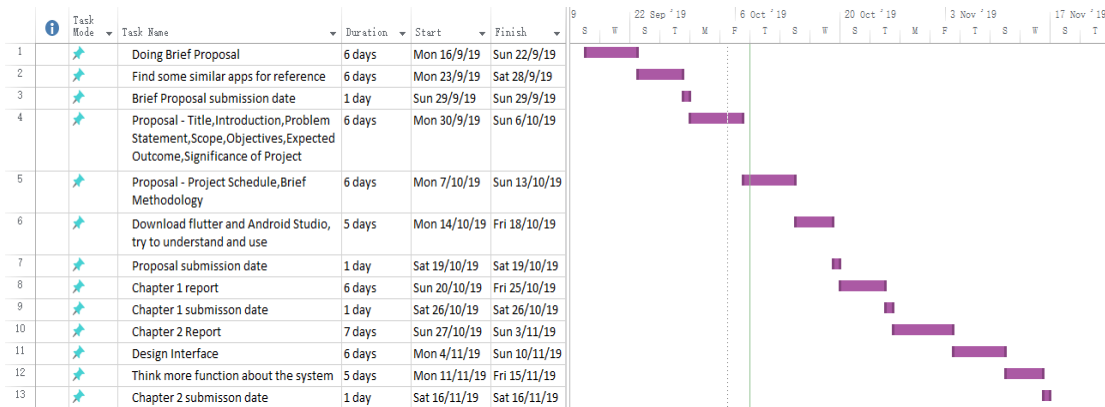


Figure 1.2 Project Schedule FYP1

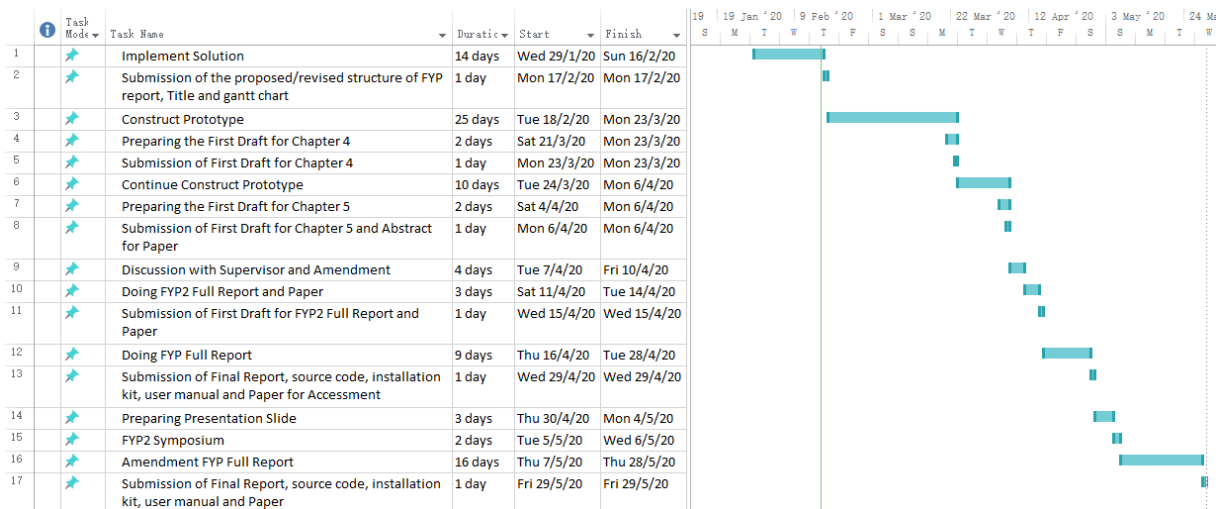


Figure 1.3 Project Schedule FYP2

1.8. Expected Outcome

The expected outcome of this project is an android application that can show all the attendance easily and all the databases will be stored in a server. The apps will be using the phone sensor to detect the number of steps of the user and calculate the calories, distance and times of user used to complete a run.

1.9. Project Report Outline

The report has five chapters which are introduction, literature review, requirement analysis and design, implementation and testing, and conclusion and future work.

Chapter 1 describe the introduction of the proposed system. This chapter contains the introduction, problem statements, objectives, methodology, project scope, the significance of the project, project schedule and expected outcome of the project.

Chapter 2 discuss the review done on existing systems or sample application that are related to the proposed project. This chapter will discuss the strength and weaknesses of the existing system and discuss which are suitable to implement in the proposed system.

Chapter 3 will elaborate on the methodology we used on the proposed project. The details of the requirement of the system, analysis of system, logical and physical design will be discussed in this chapter.

Chapter 4 describe the implementation and testing phase we have done in this project. The system prototype is developed based on the system design. The details on the type of testing done on the prototype will be explained in this chapter.

Chapter 5 concludes the proposed project and the outlines for future work. The experience gained through this project will be discussed in this chapter.

Chapter 2

Literature Review

2.1. Introduction

This chapter will discuss on the existing system which related to the proposed android system. The function, feature and design of the user interface will be compared in this chapter. The tools and techniques to design the backend will be examined to choose the suitable backend framework. This is to determine whether the software is the best fit for the development of the proposed android system.

This proposed system is to design a mobile application for showing the attendance of Kuching City Hash Club members with additional function by calculating the number of steps, distance, time, and burn how many calories. Why do we choose to use mobile apps? Based on (Rouse, 2013), the mobile app is a software application developed specifically for use on small, wireless computing devices, such as smartphones and tablets, rather than desktop or laptop computers.

Based on (Ian Blair, 2019), with over 2.7 billion smartphone users across the world, it's no surprise that the mobile app industry is thriving. App usage and smartphone penetration are still growing at a steady rate, without any signs of slowing down in the foreseeable future. According to (Mohd Uzir Mahidin, 2019), 97.9% of individuals were using mobile phones and the percentage of household access to the mobile phone was 98.2% in 2018. This data shows that Malaysian often use mobile phones in their daily life, so mobile apps very useful and convenient for all people to use anytime at anyplace.

2.2. Functionality

There are some existing mobile apps have been chosen to discuss some feature function that will be implemented in the proposed android system. The first existing mobile apps I choose is RunGo – Voice Guided Running. Based on (“RunGo — Running routes with turn-by-turn voice directions.,” n.d.). RunGo is a virtual running partner that offers turn-by-turn navigation to allow us to enjoy our run and no need to worry when we find our way back home.



Figure 2.1 Work in Offline Navigation

Figure 2.1 shows that RunGo has global running routes, we can search any running routes that we wanted with a library of routes worldwide. The feature of this app is it allows us to work in offline mode which the users can run without GPS and Wifi. The method allows us to work in offline mode is users can download the route in advance so that they can enjoy their run anytime and anywhere. This may not implement in the proposed system because the users will use in the jungle and not every jungle has a path on google maps.

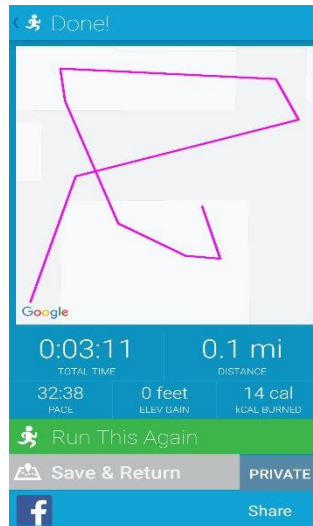


Figure 2.2 Track and Log All Running Stats

The second feature of RunGo is it able to track the runner running stats, such as total running time, number of paces, a total distance of a run, calories burned in a run and elevation of a run. This feature will use in the proposed system. The distance can calculate by using the path on maps and calories can be calculated based on distance on their run. RunGo has the feature of saving the user's every run into their logbook to let them easily compare and check their training progress. The downside of RunGo is that it has no features to celebrate their achievement. This may not help to encourage the users to make improvements in the next run because the users already get used to it and feel no sense of freshness.



Figure 2.3 Running Distance Tracker+ Interface

The second existing mobile apps I choose is Running Distance Tracker+ (“Running Distance Tracker + - Apps on Google Play,” 2019). Running Tracker+ has a feature of tracks the distance, pace, calories, times and current speed of the runner. It can make the user know their status easily and doing the improvement based on that. It can also run the GPS with maps or running routes to get and show the path of the run. The user may know the path of their run and won’t get lost easily. But the weakness of this is it cannot run without GPS. Without GPS, it cannot show and get the path of runs, so that it also cannot calculate the distance, pace, times and calories of a run. The proposed system may run without GPS and still can calculate the time and using pace to calculate calories burned. It also has a feature of saving user runs’ history and generate a complete log of running activities based on improvement along the time. It may encourage the user to make improvements in the next run or try to break his own previous record.