

FYPI BRIEFING
SOFTWARE ENGINEERING
DEPARTMENT OF COMPUTING

WHERE TO GET FYP I INFO?



<https://fyp1se.wixsite.com/fypse/>



DEGREE FINAL PROJECT

1. Apply knowledge that has been learned in class.
2. Gain experience in developing a system/mobile app or doing research.
3. Learn something new.
4. To create a sample of your work / portfolio.
5. Requirement to get a degree.



PROJECT TITLES

1. Be creative. Avoid from something that is too common (unless your proposed idea and development is far much better than the existing one).
2. Propose something that contributes to society.
3. Think of commercialization aspect.



Validated Use Cases Summary



Smart Education

Learning Assistance

Learning Advisor

Virtual Reality Based
LearningsLearning Content
Management

Learning Management *

Learning Tutor



Smart Facilities

Building Automation

Co-working Space
Management

Smart Elevators

Labs Management

Occupancy Management

Asset Tracking



Smart Security

Integrated Security
Camera Monitoring *

Gate Management *

Incident Management

Automatic Number Plate
Recognition

Patrol Management

Video Analytics

Access Control

Smart Lockers



Smart Mobility

Bus Tracking &
Scheduling

Bicycle for Mobility *

Speed Violations
DetectionParking Availability
Finder

Campus Navigation *



Smart Lifestyle

Announcements &
NotificationsCampus Kiosk Help
Service

Academic Services

Student Feedbacks

Student Finance Services

Paperless Attendance
RegistrationAccommodation
Services

Cashless Payment

Live Lecturer Chat

Cafeteria Services



Smart Energy

PV-based Electricity
Source * *PV-based EV Charging
Station * *Harvesting Energy From
Rain & WasteEnergy Management
Control Centre

Smart Street Lighting *

Smart Lighting
(Classroom/corridor)

E-Vehicle usage * *

E-bus - Using Biodiesel *

Wind Energy Generation *

* Functional requirements of these use cases to be prepared by TNB

* Few initiatives are in progress around these areas

PROJECT TITLES



PURCHASE FYP ITEMS

- Refer to FYPI Website -> Purchase FYP Items procedure

STUDENTS' RESPONSIBILITIES

1. Project Title

Choose a project title / rough idea of your project

2. Supervisor

Choose a supervisor that is suitable to your project area

NOTE : Supervisor will be auto-assigned to you should you fail to choose a supervisor

3. Progress

Consistently meet your supervisor to discuss project progress

4. Log book

Prepare project log book

Update log book



PROJECT EXAMINER

1. It is **COMPULSORY** for you to discuss your project with your examiner at least once during the semester.
2. Many students failed to do this.
3. You have no control over who your examiner will be.
4. The list of examiners will be given to you later.

CALENDAR

MILESTONE CALENDAR SEM 1 2022/2023

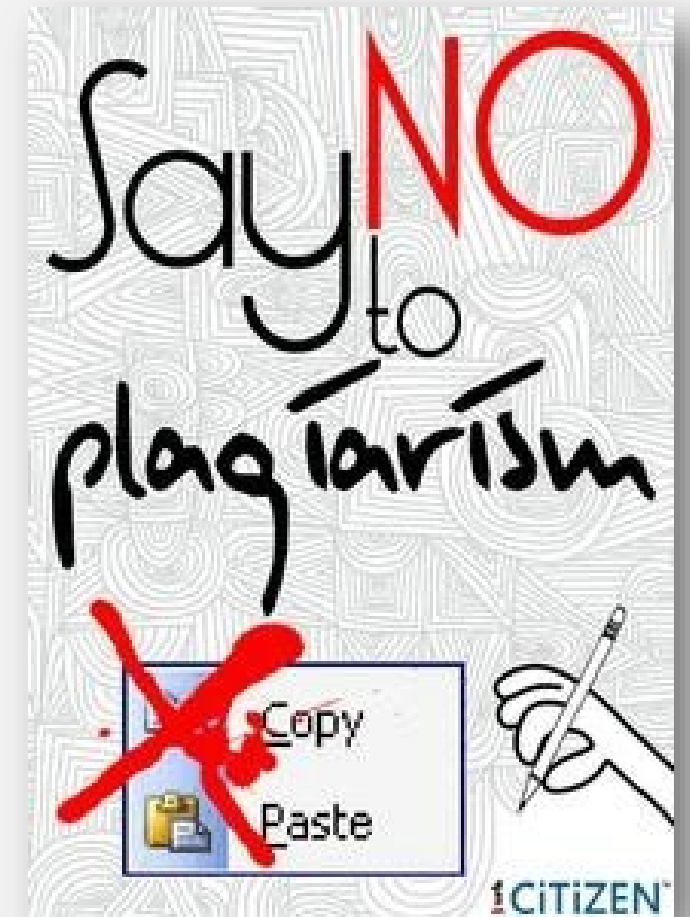
WEEK	FYP 1	NOTE
WEEK 1 5/9/2022 - 9/9/2022	Briefing FYP1 (9/9/2022, 2.30PM - 4.00PM)	
WEEK 2 12/9/2022 - 16/2/2022	Find potential supervisor	
WEEK 3 19/9/2022 – 23/9/2022	<ul style="list-style-type: none"> Last date to submit supervisor form (19/9/2022) Auto assign supervisor (20/9/2022) 	Always make-sure your name has been updated by your SV in website
WEEK 4 26/9/2022 - 30/9/2022	Milestone 1 (Chap 1 Intro + Chap 2 Lit Review) Due is on 30/9/2022	Submission Via Website
WEEK 5 3/10/2022 - 7/10/2022		
WEEK 6 10/10/2022 - 14/10/2022		
WEEK 7 17/10/2022 - 21/10/2022	Milestone 2 (Chap 3 Analysis + Appendix SRS) Due is on 21/10/2022	Submission Via Website
BREAK 24/10/2022 - 28/10/2022	SEMESTER BREAK	BREAK
WEEK 8 31/10/2022 - 4/11/2022		
WEEK 9 7/11/2022 - 11/11/2022	Milestone 3(a) (Chap 4 Design + Chap 5 Conclusion) Due is on 11/11/2022	Submission Via Website
WEEK 10 14/11/2022 - 18/11/2022	Milestone 3(b) Submit Final Report & Logbook Due is on 18/11/2022	Final Report submit via Website Log Book submit to SV
WEEK 11 21/11/2022 - 25/11/2022		
WEEK 12 28/11/2022 - 2/12/2022	Milestone 3(c) Poster presentation <i>*subject to change</i>	
WEEK 13 5/12/2022 - 9/12/2022	Milestone 3(c) Poster presentation <i>*subject to change</i>	
WEEK 14 12/12/2022 - 16/12/2022	Milestone 3(c) Poster presentation <i>*subject to change</i>	

FYPI MILESTONE DEADLINES

MILESTONE	SUBMISSION DATE	SUPERVISOR	EXAMINER	FYP COMM
Submission of Final Year Project Registration form	19/9/2022 before 5PM (manual assign) 23/9/2022 Before 5PM (auto assign)			√
Milestone 1 Chap 1 & Chap 2	30/9/2022	√		
Milestone 2 Chap 3 & SRS	21/10/2022	√		
Milestone 3(a) Chap 4 & 5	11/11/2022	√		
Milestone 3(b) Complete report (all chap)+ Logbook	18/11/2022	Complete report (all chap)+ Logbook	Complete report (all chap)	Complete report (all chap)
Milestone 3 (c) Poster Presentation	WEEK 12 / WEEK 13 / WEEK 14	√ Present	√ Present	√ Submit PDF

ORIGINALITY CHECKING- PROJECT 2

1. Specific deadline will be set (Milestone 2-week 10 out of 15 weeks) for supervisor and examiner to report on the 'copying' activity.
2. For the students that suspect to commit to plagiarism – second evaluation by minimum 2 experts. If failed, advise to drop.



TYPE OF PROJECTS IN SOFTWARE ENGINEERING PROGRAM

Development-based

Web-based application

Mobile apps

Electronic prototype (IOT)

**** You are free to propose other type of
project**

Research-based

RESEARCH-BASED

1. Student must get CGPA >3.5
2. Aspects to be evaluated
 - **Prototype** – is means to evaluate the research outcome
 - Potential publication
 - Acquired research skill
 - Many more. ...



Automated Update of Crowdsourced Data in Participatory Sensing: An Application for Crowdsourced Price Information

Fakhrul Syafiq^{*}, Huzafah Ismail, Hazleen Aris and Syakiruddin Yusof
College of Computer Science and Information Technology, Universiti Tenaga Nasional, Kajang, Malaysia

ABSTRACT

Widespread use of mobile devices has resulted in the creation of large amounts of data. An example of such data is the one obtained from the public (crowd) through open calls, known as crowdsourced data. More often than not, the collected data are later used for other purposes such as making predictions. Thus, it is important for crowdsourced data to be recent and accurate, and this means that frequent updating is necessary. One of the challenges in using crowdsourced data is the unpredictable incoming data rate. Therefore, manually updating the data at predetermined intervals is not practical. In this paper, the construction of an algorithm that automatically updates crowdsourced data based on the rate of incoming data is presented. The objective is to ensure that up-to-date and correct crowdsourced data are stored in the database at any point in time so that the information available is updated and accurate; hence, it is reliable. The algorithm was evaluated using a prototype development of a local price-watch information application, CrowdGrocer, in which the algorithm was embedded. The results showed that the algorithm was able to ensure up-to-date information with 94.9% accuracy.

Keywords: Automated algorithm, big data, crowdsourcing application, crowdsourced data, data deletion, data management, price information

INTRODUCTION

Crowdsourcing is "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call" (Howe, 2006). Today, 10 years after the term was coined,

ARTICLE INFO

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Automated Validation of Crowdsourced Data

Zailani Ibrahim¹, Hazleen Aris² and Aishah Mansur³
¹College of Computer Science and Information Technology
Universiti Tenaga Nasional
Kajang, Selangor

²Institute of Informatics and Computing in Energy
Universiti Tenaga Nasional
Kajang, Selangor

³DHL IT Services
Cyberjaya, Selangor

¹zailani@uniten.edu.my, ²hazleen@uniten.edu.my, ³aishah.fr@gmail.com

Abstract—Ensuring the accuracy of information or data contributed by the crowd is amongst the challenges in crowdsourcing initiatives. Data that do not meet certain criteria set by the crowdsourcer are also submitted by the crowd in a crowdsourcing initiative due to its openness. Thus, there is a need to ensure that only valid data are being captured before the data are being processed further. However, manually validating the data is not practical due to the high volume of data involved in crowdsourcing and their unpredictable nature. Therefore, in this research, an automated algorithm to validate crowdsourced data was developed. The objective was to identify the processes needed to enable the validation of crowdsourced data to be performed automatically. Two types of validation were included; task validation and worker validation. Kuder-Richardson Formula 20 was used to compute validity of task and mean formula converted to percentage was used in computing worker validity. The algorithm was implemented by embedding it in a prototype crowdsourcing application called AsnafCircle that crowdsourced information on eligible asnaf (alms recipient) from the public. Evaluation showed that the algorithm was able to automatically compute values that determine task and worker validity. Evaluation by experts also conformed the necessity of the processes that constitute the algorithm. The presence of this algorithm will help to ensure validity of contributed data in crowdsourcing initiatives, hence, improving their reliability.

Index Terms—crowdsourcing, crowdsourcer, data validation, valid data, algorithm, automated, validity, reliability

1. INTRODUCTION

Crowdsourcing represents the act of a company or institution taking the role once performed by employees and outsourcing it to an undefined network of people in the form of an open call [1]. This can take the form of peer production,

to solve problems of all kinds for an affordable price [5], releasing a beta version of e.g. a game, to the public for testing [5], and also involving crowd in a broadly creative and collaborative process [6]. Crowdsourcing, especially crowdsourced designs, helps to reduce cost, eliminate overhead, increase options and optimize creativity [7]. This is because members of the crowd tend to be aggressive in trying to stand out from the rest, which then creates the crowdvoting buzz that helps in deciding the best design.

Even though many advantages can be obtained, it is predicted that crowdsourcing can become a big disadvantage and a problem if there is no management on the crowdsourced data [5]. Two main problems of crowdsourcing are listed. Firstly, the cost of the crowdsourcer's time spent sifting through the slough of submissions. Secondly, the cheap labor that is bought for completing simple tasks that results in less credible product compared to professionals who get paid for their expertise, experience and dedicated spirit. The two problems above, if not addressed, are risky for crowdsourcing. Unprofessional crowd can also contribute faulty data. Faulty data greatly affect their integrity. It can cause some costing to the crowdsourcer, causing them loss in their investment. To the very least, it will affect revenue, costs, and the valuable trust that come from customer loyalty. Faulty data cause invalid information for inventory, planning, and other kinds of crucial processes [8]. Therefore, it is obvious that a validation mechanism must be implemented in a crowdsourcing-based system so that some kind of control can be imposed to monitor the behavior of crowd from accidentally or maliciously.

Simple Screen Locking Method Using Randomly Generated Number Grid on Image

Hazleen Aris, Universiti Tenaga Nasional, Kajang, Malaysia
Zailani Torahim, Universiti Tenaga Nasional, Kajang, Malaysia
Ariff Azman, Universiti Tenaga Nasional, Kajang, Malaysia

ABSTRACT

Smartphones have become part and parcel of our daily life. Due to the more and more advanced features incorporated, its role has extended beyond calls and text messages, and it has become a place where important personal information is being stored. Thus, it needs to be protected from unauthorised users, which is usually achieved by using screen locking. However, improved screen locking security often compromises other aspects, such as usability and cost. In this article, a new screen locking method (SyS) that is both simple, secure from shoulder surf and smudge attacks, and not expensive to implement is presented. It uses an image and a chosen number to create the screen locking code. Evaluation results show that the SyS screen lock method scores best in terms of usability and security compared to the other three common screen locking methods, namely personal identification number or PIN, password, and pattern. It also performs well theoretically when compared against existing screen locking methods that aim at defending against similar attacks.

KEYWORDS

Password, Smartphone Protection, Smartphone Security, Touch Screen, Unlocking Method, Usability, User Study

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A HYBRID CROWDSOURCING INCENTIVE MECHANISM BASED ON USERS' PREFERENCE

Aqilah Azizan¹ and Hazleen Aris²

¹Universiti Tenaga Nasional, Malaysia, aqilahazizan06@yahoo.com
²Universiti Tenaga Nasional, Malaysia, hazleen@uniten.edu.my

ABSTRACT. Due to its nature, the success of a crowdsourcing application strongly relies on the volume of users' participation. Thus, crowdsourcing applications need elements that can motivate users to participate, such as incentives or rewards. In this paper, the development of a hybrid incentive mechanism that incorporated users' preferences is described. Literature review was first performed to identify the types of incentive implemented in existing crowdsourcing applications. This was followed by a survey through online questionnaire distribution to a total of 55 crowdsourcing users to determine their preference with regard to the identified incentive types. The hybrid incentive mechanism included most of the preferred incentive types indicated by the respondents. For the purpose of evaluation, two versions of crowdsourcing application prototype were developed, one of which was embedded with the hybrid incentive mechanism. Results obtained showed that participants who used the prototype with the incentive mechanism were more active in terms of number and contributions. Users' retention was also greater in prototype with embedded hybrid incentive mechanism.

Keywords: incentive mechanism, crowdsourcing participation, users' participation, users' preference

INTRODUCTION

Crowdsourcing was defined as the act of taking a job traditionally performed by a design

MINIMUM REQUIREMENTS

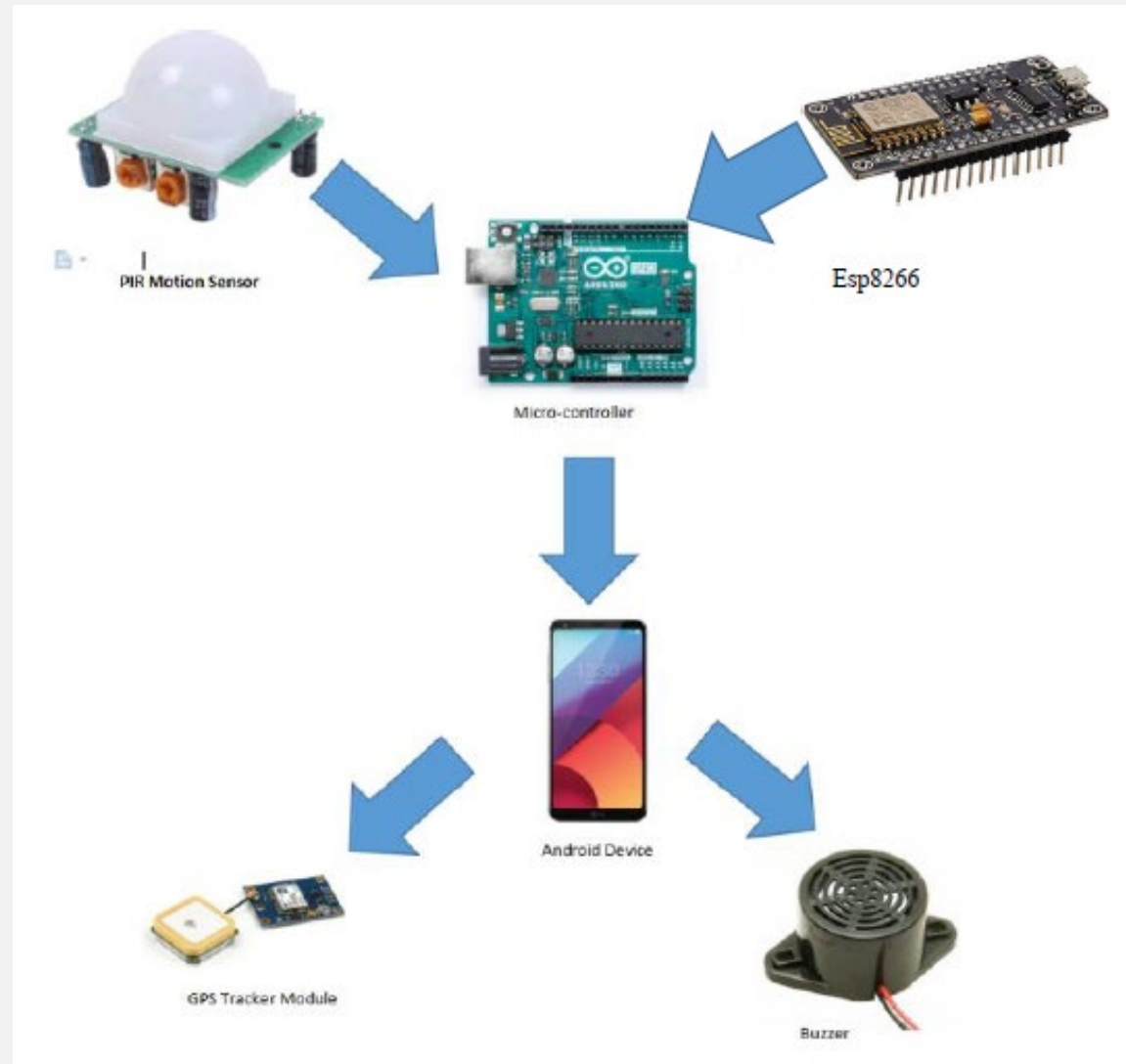
Project will be considered FAILED if your works failed to meet the following minimum requirements:

1. Web-based application
 - Must have database manipulation, 100% XHTML/ CSS codes are NOT allowed
2. Electronic prototype (IOT)
 - Must involve writing programs to demonstrate certain functions
3. Research-based
 - Must develop at least a simple prototype to demonstrate your findings

NOTE: How about mobile aps?

MINIMUM REQUIREMENTS

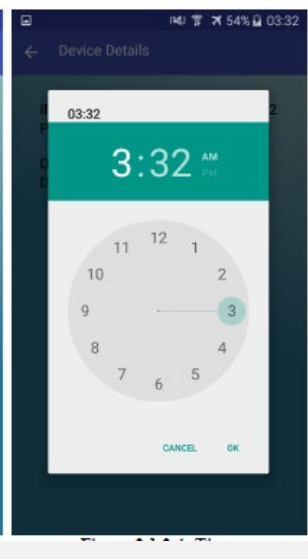
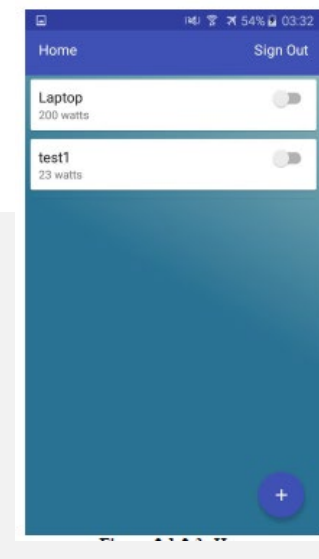
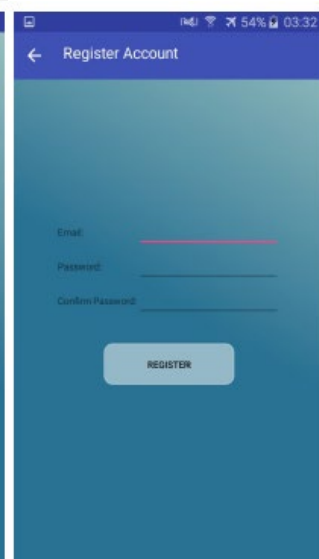
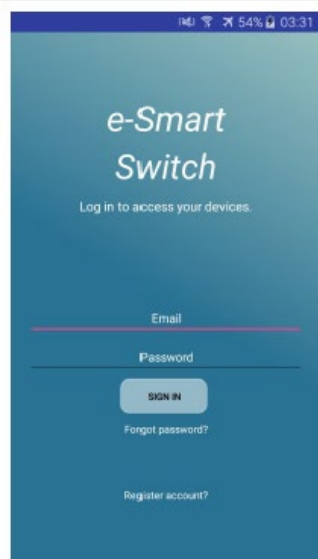
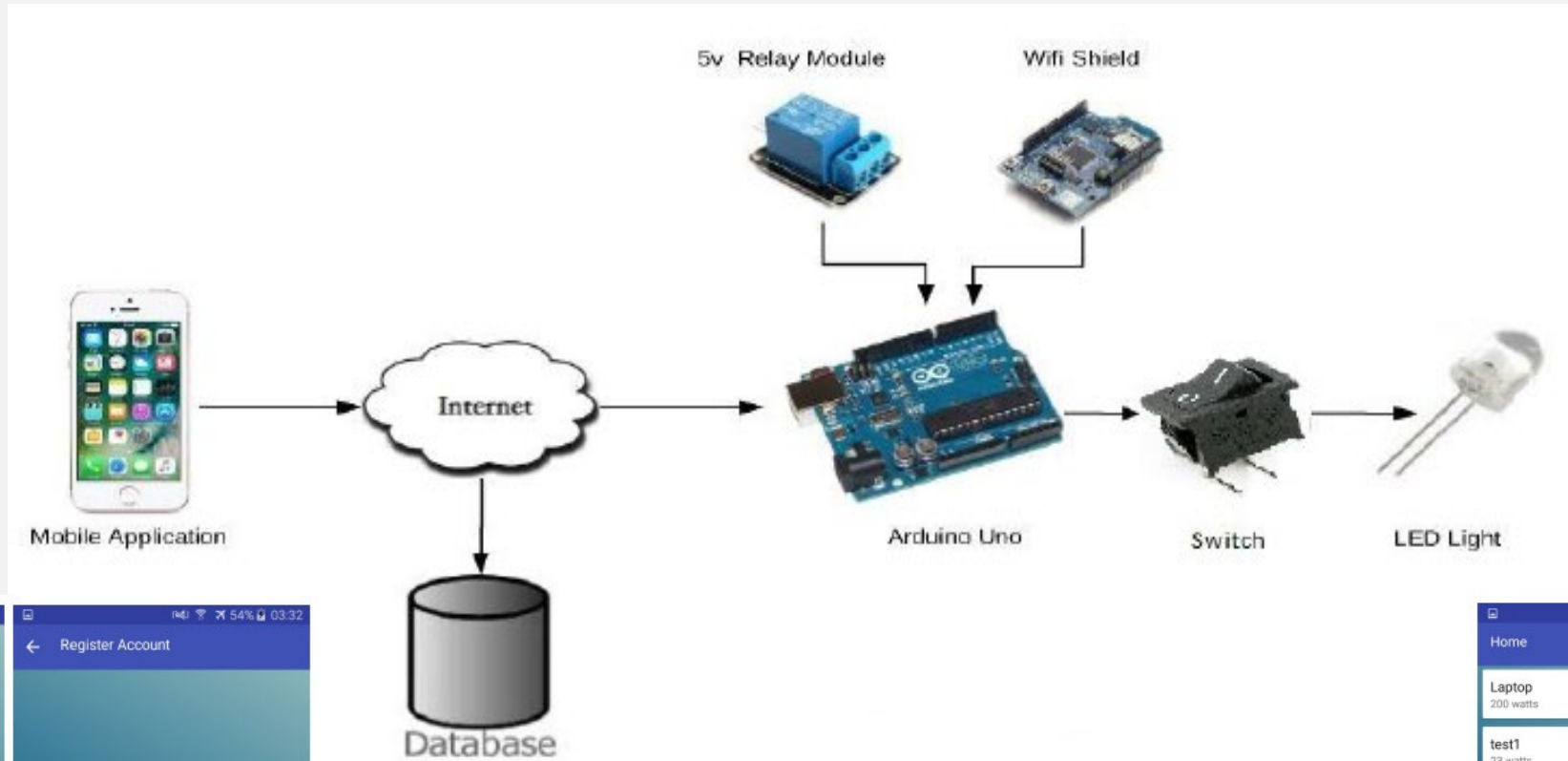
Example:



Alert Me System

MINIMUM REQUIREMENTS

Example:



TO COLLABORATE WITH COE AND COBA & PROJECT IN TEAM

- The department allow inter-college collaboration.
- You have to identify your project team member and the committee will have to discuss with the FYP committee of COE/ COBA.
- You are allowed to work in team, maximum 2 members only.
- The application to do in team has to be submitted to the committee.
- The functions to be developed by each member has to be different.



FINAL REPORT

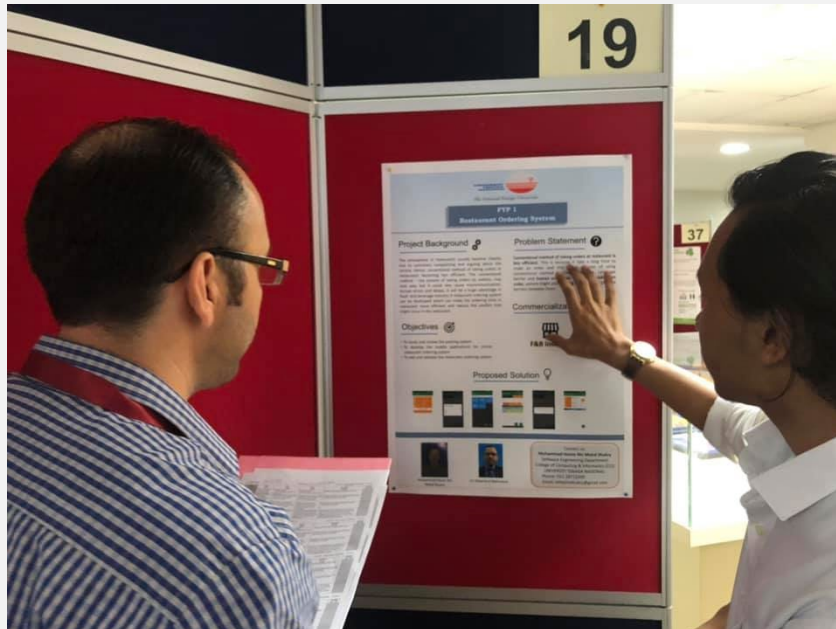
1. Follow the format set by the given Word template, uploaded in FYPI website. There are marks allocated for formatting.
2. Write with the intentions that when someone reads your report, he/she will be able to fully understand it.
3. Make sure all the contents cited from other sources are referenced properly.

LOG BOOK

1. Each student is required to keep a logbook
2. Every progress must be written in the logbook
3. Bring the logbook along to every meeting with your supervisor
4. Supervisor needs to read and sign your logbook
5. You need to get the stamp/signature whenever you attend to any workshop or course

POSTER PRESENTATION

1. WEEK 14
2. Students need to prepare a poster presentation – details will be given later.
3. Panels: Supervisor and Examiner



LIST OF CHAPTERS

FYP1 : List of Chapters

Chapter 1: Introduction

- 1.1 Background
- 1.2 Problem Statements
- 1.3 Project Objectives
- 1.4 Project Scope

Chapter 2: Related Works

Review on existing systems. At the end of chapter, a **table of comparison** that compares the features and analysis of strengths and weaknesses can be provided.

** Study on tools or languages such as PHP/ WampServer **shall not be included**.

Chapter 3: Requirements Analysis

3.1 Requirements Elicitation

3.1.1 Elicitation Technique(s)

*Describe what technique (s) you use to **elicit requirements**. Did you conduct a survey/ interview/ observations or combination of the techniques?*

Describe in detail how the chosen technique is being conducted.

If you conduct an interview, attach the interview transcript as Appendix of your report.

LIST OF CHAPTERS

FYP1 : List of Chapters

Chapter 3: Requirements Analysis

3.1.2 Results and Discussion

Describe the **results of elicitation technique(s)** that you applied before.

You may present your findings using **charts or graph**.

Provide some **discussion to summarize** all your findings. Describe what are the findings that would help you to develop your system in FYP2.

3.2 Requirements Specification

Write a short introduction to this chapter such as what have you gathered so far to produce the **complete SRS**.

Ask the reader to refer to the **Appendix** of your thesis for the complete SRS (with a front page). The **template for SRS** has been uploaded in Moodle.

The results you obtained from requirements elicitation process shall be included in SRS.

3.3 Diagram

Based on the project approach (ask SV)

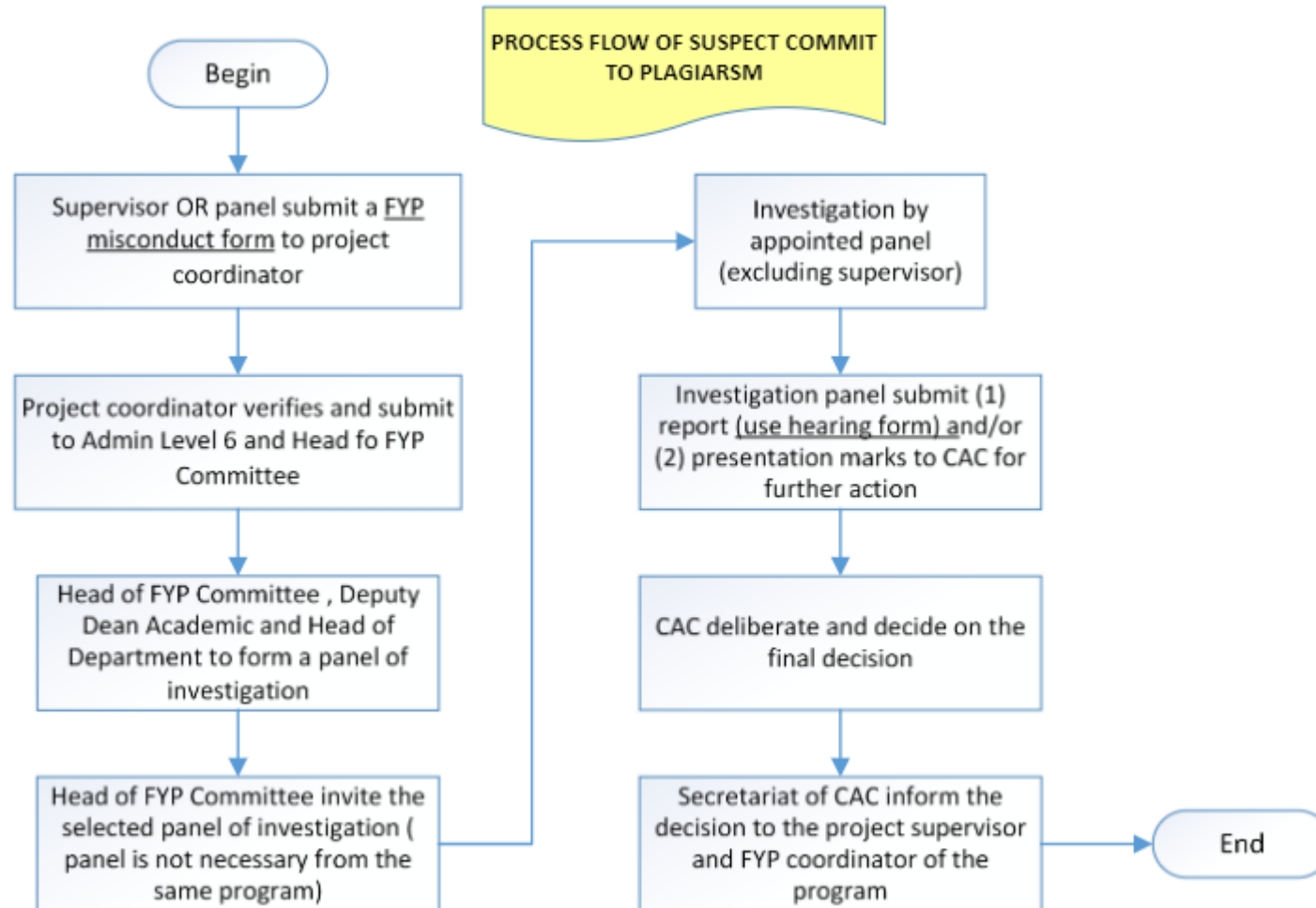
Context Diagram, DFD, ERD, UML Diagram (not all diagram to be included, consult your supervisor)

Chapter 4: Design

Architecture Diagram, Interface Design, Database Design (data dictionary)

Chapter 5: Conclusions

PROCESS FLOW OF SUSPECTED FOR PLAGIARISM



FYPI REMARKING PROCEDURE

