FOOD FINDER KINDER

Project Proposal



Information Technology Capstone Project

COMP5703/5707/5708

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Abstract

The abstract should be between 150-600 words. Briefly summarise your proposal. The abstract is usually written last, when you have a clear idea of your proposal as a whole. The aim of this section is to quickly introduce the reader to the project, and ideally engage their interest and encourage them to read the rest of the proposal. You should include an overview of the project, its motivation, the objectives, and the methods you plan to use. Do not include details in this section , you will have plenty of space in later sections. Also remember that the reader may not understand the technical details of your project so avoid jargon and leave in-depth discussion for later sections.

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# Introduction

* Animal welfare is a new concept introduced to the livestock industries; the terminilogy refers to how animals or livestock coping with the living conditions (Agriculture Victoria Services, 2017). Hence, various aspects of the animals’ living conditions are considered to guide people on reassuring the well-beings of animals, for example:
* Physiological needs of the animals like foods and water should be provided;
* Safety needs of the animals should be satisfied;
* Animals should not suffer from any pain, disease or injury. Hence, prevention and treatment to afflicted should be conducted;
* Animals should be allowed to interact with members of their own species socially.
* As the livestock industries evolves, public concern for animal well-beings also increases (Butterworth, 2018); Not only does people pursuit animals welfare individually, but different organizations (Chen, 2016) have risen together with government to enforce animal welfare practices. Hence, different standards and policy regarding the well-being of livestock were developed to harmonise and streamline animal welfare legislation.
* Despite the fact that public concerns for animal welfare in food product have increase significantly, consumers still struggle to align their shopping decisions with personal values. This is due to ambiguous product labels, marketing claims; Hence, in the absence of a convenience information channel to support consumers, distinguishing a animal-friendly brand among various options is exhausting. Giving the current conditions, even though supports for animal welfare continual to increase, the efforts could not reach the appropriate channels and are vanished into hollow.
* This project aims to reduce the gap between consumers’ attitude and behaviours by providing consumers with an information channel regarding animal welfare; In specific, as smartphone has invaded more into our life, it also becomes a part of our world, the source of our entertainment and social connectivity (Shahzad & Alwagait, 2013). Furthermore, while allowing people to carry it around due to its compact size, the device also grants people access to various information channel. Taking into account the advantages of smartphone, we want to develop a mobile application which allow users to access information related to animals welfare and enable consumers to make the right decisions regarding their beliefs.

# Related Literature

Describe in detail the related knowledge needed to understand your work and how it relates to existing work. This may take the form of a literature review, or a review of related projects.

## **Literature Review**

A literature review is done by analysing and articulating the published sources and literature on the specific topic of the project. In this section, you should emphasise the review is needed and why the selected topic is essential for the project. Moreover, the scope of the literature reviewed and the selection criteria, such as the type of sources, keyword and any particular date range, need to be specified.

The literature reviewed can be in the form of an article such as conference paper, journal paper, a research report or thesis. The literature review usually consists of three main components: an introduction, a body and a conclusion. Furthermore, the literature review is not only summaries one by one of the source. Instead, it constructs an essay that flows from one topic to another that relates to the project problem that is to be solved.

For this type of project, the expectation of the literature to support the argument is at least 10 – 15 citations that compile state of the art discussion related to the problem of the project. Do not forget to consider the reliability of the sources.

# Research/Project Problems

Clearly state the problem or question the project intends to investigate. Describe the scope of your project since it may not be feasible to completely solve the problem. State the objectives and how completion will be measured.

## **Research/Project Aims & Objectives**

* The objective of this project is the development of a user-friendly mobile application which provides users access to animal welfare conditions information of several animal-source products and helps users conveniently locate where to find these products through sourcing products’ selling points. In specific, the application enables users to report where they find a specific product and let other users access that information.
* In summary, the objective is to provide consumers access to breeding conditions behind certain product and to locate accredited products through mobile application.

## **Research/Project Questions**

In this section, an apparent problem or question faced by the client needs to be defined and stated. Sometimes, even though the client already stated their problem it might be only the symptoms.

## **Research/Project Scope**

1. **Project scope of work includes:**

* Development of a mobile (Android) application and a server which could provide users with ratings of animal source food based on the living condition of the animal.
* The mobile application is expected to be users-friendly and cover the following features:
* Signup/ Login function: Users should be able to use their facebook account to login and use the service provided. Otherwise, users can choose to signup for a new account;
* Search function: Enable users to search through products in the database and examine the rating of a product;
* Browse function: Allow users to browse by (1) Category, (2) Accreditation and (3) Rating to find welfare ratings for animal-source products;
* Search for product in store: Enable users to scan through the stores available in the database and check which stores have a specific product;
* Recommend stores which have the product: Enable users to provide recommendation on which stores have a specific product;
* Collect and display data: Data collected from users’ behaviours should be recorded in the database and can be extracted by the administrators;
* Input new product and rate product: Enable the administrators to enter new product and rate product in accordance with animal living condition;
* The mobile application and website should be users-friendly. Hence the mobile application interface should be similar to “Good on you” mobile application.
* The server will have the following features:
* Brand Database for the application: The server will consist of a real-time database for the application. In specific, the application can access the real-time database and update (Adding, Updating, Deleting) welfare ratings for animal-sources -products when internet connection is available;
* Users’ behaviour Database: Beside storing animal welfare ratings information, the server will also store users’ behaviour data. That is to say, the mobile app will collect users’ behaviour search history and store that in the local database; When internet connection is available, the data will be transferred to the server;
* Administration: The server will have some built-in features to enable the administrator to manage both databases (Query, Insert, Update, Delete data in the database). Hence, the administrator will be able to access this function using an Admin account.
* Instruction on how to administer the mobile application and website must be documented to assist the client in managing the system.

1. **The project scope of work does not include:**

* Any adjustments related to the application after the project team finishes delivering the final products.
* Daily administrating of the mobile application server after the deployment phase.
* Any sales and marketing activities directed to end-customers.
* Further purchasing of software and hardware besides the software and hardware specified in this project.

# Methodologies

## **Methods**

* For the project we have decided to use the waterfall methodology. This is the model where the software development process follows a linear pathway; The methodology breaks down the project into five different phases: (1) Requirement analysis, (2) Design, (3) Implementation, (4) Testing (5) Release/ Deployment and (6) Maintenance (Brindha & Vijayakumar, 2015). The standardized process of the waterfall model could be explained as followed:
* Requirement analysis: This is the first stage of the project where the team would engage the client and gather the project requirement or problem description as well as the project scope and constraints (i.e. timeline, project team, budget, etc.). This stage would include multiple meetings and contact between the team and client side to ensure a thorough analysis of the requirement.
* Design: After the project team has fully understand the project scope and requirements, the team would move on to the next stage where the developer would transform the technical and function requirements of the product into designed programming feature. In addition, related resources such as server or platform would also be planned and / or purchased by the project team.
* Implementation: When the final design is approved by the client, the developers would start creating the new solution according to the design. At the end of this stage, a fully functional product would be created.
* Testing: Following the implementation stage, the project team would also need to conduct a series of test on the product. This stage is required to ensure the product quality before being transfer over to the client.
* Release/Deployment (Bomarius & Komi-Sirviö, 2005): This stage is not usually presented in the traditional version of waterfall development life cycle model; However, per request by client, in this stage, the project team will work closely with client to transfer knowledge and resources related to the project to client. In specific, the project team will conduct training to client before passing on the products. In addition, instruction will be documented and delivered to client at this stage.
* Maintenance: Finally, during the life cycle of the product, regular maintenance would also be needed to guarantee the performance of the product as well as implementation of further update or modification. However, due to the nature of the project, this stage would be handled by the client side.
* The following is the reason why we have decided to choose this method over other software development method like Agile:
* ***Clear definition of the problem and product requirement:*** With the project brief provided by the client, we believe that we have a very clear description of the problem as well as the client requirement on the final delivered product. Furthermore, there has been similar project on ethical consumption rating app such as goodonyou.eco which have been successfully implemented. This would allow the waterfall methodology to be more efficient than other method.
* ***Project time constraint:*** As the project would need to be done within the twelve weeks of the semester, the waterfall method would allow us to be more efficient with the time without the necessity of going through different iterations like other methods such as Agile. In addition, with linear progression, the method would allow the group to have better control over the progress of the project.
* ***Less requirement for meeting schedule:*** While Agile and other iteration method require regular meeting within the team and the client, waterfall method allow the planning stage to be at the beginning of the project which also allow less requirement for meeting schedule. This would be more suitable for both the project team and the client of this project.

## **Data Collection**

* As defined above, the final deliverables of this project should contribute in helping client collect data about users’ number of searches for each product categorized by gender and age. In order to capture all relevant data, the following approach is adopted in this project:
* Firstly, a Signup/ Login function is developed so each user can login the application and website using their Facebook account/ or users could sign up for a new account. Hence, upon login using Facebook account, users’ birthdate and gender will be captured. Otherwise, in case that users choose to sign up for new account, the system will request them to enter data related to their gender and age.
* Secondly, every time a user search for a product (or click on that specific product to check the detailed information), the application and website will record their search history and send it to the database.
* Finally, to collect users’ behaviour data, the client can access the database using the “collect and display data” function in the website to access the number of searches per product filtered by age and gender.

## **Data Analysis**

There is no requirement regarding data analysis in this project.

## **Deployment**

**SW projects**: Explain the deployment of the system on client’s infrastructure. Remember to mention how updates and bug fixes will be distributed after the deployment.

* After the delivery of final products, the source code of both mobile application and server will be transferred to our client. Furthermore, the server will be delivered as follow:
* The project team will work with relevant stakeholder to set up the server in accordance with the specifications written above. Upon delivering the final products, project team will have no access to the server; Client will work directly with the supplier regarding the operation of the server after project team has completed delivering it.

## **Testing**

**SW projects**: Include the detailed description of your testing process and methodologies. Examples include: Test Driven Development (TDD), Unit Testing, Integration Testing, vigorous testing, etc. Remember to explain why the methodology was chosen and how the defined testing process will contribute to the quality software development in your specific project.

# Resources

## **Hardware & Software**

1. **Mobile application**

* The minimum version of Android SDK that this application supports is Android 4.1 – Jelly Bean since we want to ensure that the application could target most of our potential users. In specific, by supporting Android 4.1 version – Jelly Bean, the application is compatible with 99.6% of the devices (as of March 22, 2019) that run in Android operating system.
* Furthermore, the mobile application is developed in Java language and can be compiled using Android Studio (Provided by Google). Hence, the Integrated Development Environment (Android Studio) also provides Android Virtual Devices (AVD) function which allow programmers to launch and test the application on a virtual device.
* The project also employs some Libraries/ API online to satisfy the application’s specifications:
* Facebook API: One of the external API which is employed for the application is Facebook API to comply with client’s requirements. One of the client requirements is creating a Login button which allow users to access the services of this app using their Facebook account. The approach was agreed between client and the project team as Facebook API not only helps users Login quickly but also lets the mobile app capture user’s information (Gender and Age).

## **Materials**

* A real-time server and database are necessary for the operation of the mobile application. In specific, having a server permits the administrator:
* Control of data that the application will show to the users by adding, updating or deleting data in the database;
* Collect users’ behaviours information in accordance with client’s purpose.
* Enable users to report/ give feedback about stores which have a specific brand. The server will receive those reports directly and record them to the database; Furthermore, the data is then provided to all other users.
* Dataset of animal-source brand; The dataset should consist of the following data columns:
* Brand categories;
* Brand title;
* Brand image;
* Accreditation;
* Rating (Avoid, Best, Good);
* Logo of the application developed by client.
* Contents of multiple information activities in the mobile application (About Us, FAQs, Share, Glossary of terms, etc.) developed by client.
* Furthermore, because the aim of this project is to develop a mobile application, it is crucial that team members should possess or have access to computers with Android Studio application installed.
* Microsoft Office software which would enable team members to contribute their knowledge and effort in preparing project proposal, progress report and final report.

## **Roles & Responsibilities**

|  |  |  |
| --- | --- | --- |
| **Team member** | **ROLES** | **RESPONSIBILITIES** |
| **Jordan Ly** | **Team Leader**   * It is crucial having a team leader to allocate tasks, check up on members’ progress and review their work products for the success of the project and the quality of the project team’s final deliverables. | * Check up on members’ progress: To ensure that all members participate in the project and that their works should be finished on time, the team leader will check their deliverables every week. The adopted method for this task is To-do list; In specific, all members must write down what they expect to do at the beginning of the week in the team To-do list. Hence, team leader will use the list to check the progress of the whole team every weekend. * Allocating works: After checking on members’ committed tasks, the Leader will advise all team members in case there are other tasks needed further attention, so they can focus on doing the right tasks and postpone the unimportant tasks. * Review members’ work products: To improve the quality of works delivered by all team members. Furthermore, it also helps ensure that the final deliverables comply with the scope of work and requirements defined by client. |
| **Developer**   * Having expertise in android development, Jordan will also act as a developer throughout the project period. In specific, he will conduct hand-on development on some of the important features of the mobile application. | * Developing these following functions for the mobile application: * Search function and search UI for the application; * Browse function; * Local database which consists of the (1) Brand (Title and Image), (2) Accreditation (Rating, organizations and relevant Brand), (3) Users’ behaviors; * Find stores and report functions; |
| **Business Analyst**   * It is crucial that the requirements of the final deliverables are correct and feasible. The Business Analyst will communicate directly with client to gather and document client’s expectations and requirements. | * Drafting project proposal. * Liaising with client to analyze and verify the requirements of the system. Ensuring that the requirements are completed, consistent, unambiguous and feasible for the project team; * Documenting the requirements of the mobile application and server; |

# Expected Outcomes

## **Project Deliverables**

* Product-related deliverables:
* A mobile application
* A server and database to manage Brand data and Users’ behaviours
* Instruction manual on how to operate the mobile application and server
* Documentation of the system

## **Implications**

* The output of this project is expected to enable our client to collect users’ behaviours data and use that information to in researching about the connection between animal welfare, consumers’ demographics and shopping preferences. Furthermore, the deliverables of this project also contribute in improving transparency regarding the living conditions of animals and help provide more information about their living condition to consumers; By granting access to these information, we are expected that shoppers will make better choices for animal welfare when they go to the stores.

# Milestones / Schedule

**Data Science projects**: List the expected milestones. There should be sufficient detail to be able to measure progress and completion. Describe the planned timeline for the work you intend to do. A Gantt chart is ideal for illustrating the plan and where the milestones fit in.

**IS projects**: Within the allocated time, the detail of how the project will be running should be described in detail in this section. A Gantt Chart might be used to show and illustrate the milestone of your project.

**SW Development projects**: Describe the planned timeline for the work you intend to do. You can follow the common stages mentioned below as a guide to list the tasks required.

* Analysis
* Development
* Testing
* Deployment
* Training and documentation

You can use the example below of a project plan or create your own Gantt chart to detail the breakdown of tasks.

|  |  |  |  |
| --- | --- | --- | --- |
| 1. **Milestone** | **Tasks** | **Reporting** | **Date** |
| Week-1 | Analysis and design stage, gather data and create system mockup | Client meeting to review the project | 11-03-2018 |
| Week-2 | Architecture design | Client meeting to review the work plan | …… |
| Week-3 | Design work plan | None |  |
| Week-4 | Create database | None |  |
| Week-5 | Proposal Report Due |  |  |
| Week-6 | Create GUI | Client meeting to review GUI |  |
| Week-7 | Integration with iPhone environment | None |  |
| Week-8 | Testing | None |  |
| Week-9 | Progress Report Due |  |  |
| Week-10 | Deployment | Client meeting to deploy the system |  |
| Week-11 | Documentation |  |  |
| Week-12 | Final Presentation |  |  |
| Week-13 | Final Report (thesis) |  |  |

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