

Swinburne University of Technology

## **SWE30010 | Managing IT Projects**

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### **07P – Project proposal**

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**Tutorial:** Wednesday 08:30-10:30 Odd week

**Tutor:** Harsharan Kaur

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## **Project Proposal : PHP:SRePS**

### **Background**

People Health Pharmacy (PHP) is a small pharmacy that sells medicine, health care products and accessories. They are currently using a paper-based system to record sales and want to transition to an application to record their sales and keep track of stock.

The reason for a change of system is they frequently run out of items that are in demand and are finding it hard to understand their weekly and monthly sales data. The application will need to be able to analyse sales data and produce reports that can improve product ordering decisions. It must have a graphical user interface and generate reports into CSV files.

### **Table of Contents**

1. Scope	3
2. Stakeholders	3
3. Deliverables and schedule	4
4. Solution Direction:	6
4.1. KoST Analysis	6
4.2. High level design	6
5. Quality Management	8
6. Resources	8
6.1. Human Resources:	8
6.2. Non-Human Resources:	9
7. Approval Signatures:	9

# 1. Scope

People Health Pharmacy (PHP) is looking for an application that will track sales and stock, while also creating automated analysis reports. To achieve this, project scope will be established to clearly identify what will be included in the project.

- **Application:** We will create a web application with a GUI that will accept sales data, access the database and compile automated reports.
- **Database:** The database will contain sales and stock data and will be fully searchable.
- **Reports:** Users must be able to generate weekly and monthly sales records for analysis, these must also be in CSV format.
- **User Documentation:** Training guides will be included for staff to learn from, and user documentation will be provided for the application.

The project will not be covering the following components and hence is considered to be out of scope. The application will not support cross platform support (android, apple etc). This is a record keeping application and hence no inventory management will be implemented.

## 2. Stakeholders

**Primary Stakeholders:** Primary stakeholders have a vested interest in the decision making process, given that they will be directly affected by any changes, and will be either involved with implementing or using new procedures, or be accountable for the financial and operational success of the solution being developed.

**People Health Pharmacy:** As a company, PHP is interested in a solution that can make them better able to see strong selling trends and successful items, so they can take advantage of the best selling items and increase the revenue generated each year. Furthermore, developing an automated sales tracking system will allow their managers to spend less time on manual data analysis and instead focus on more important tasks such as staff upskilling and brand promotion, meaning beyond the obvious advantages of identifying top selling items their staff can further increase sales by having time for other tasks to this end.

**PHP frontline team members:** As the staff will put sales through with customers, the frontline team members will need to have some level of new training and therefore will be interested in the solution development to ensure it is easy to understand and does not increase the complexity of their workload. Although the managers will have most responsibility for updating sales records, the staff will need to record daily sales in a way that is compatible with the solution including all relevant fields being recorded for each sale made.

**PHP managers:** The managers will spend the most time using the new system and so are actively invested in making the system both easy to use, and effective at identifying sales trends, and providing ways to identify possible opportunities to further increase sales. They will be responsible for analysing the sales reports that are generated and using them to determine opportunities for increasing sales, as well as allowing them to come up with possible promotions for struggling items and use the data provided in creative ways to increase the sales success of PHP.

**Secondary Stakeholders:** Secondary stakeholders are not directly involved in developing or using the solution, however they will be indirectly affected by its use. Therefore although they will not be actively consulted as part of the decision making, it is important for the project developers to consider what impact will be had on each secondary stakeholder.

**Customers:** Customers purchasing pharmaceutical items from PHP may see changes to pricing, product availability or stock variety depending on the information gained by PHP using the analysis may lead to changes in products provided. This means for some customers who purchase less popular items they may lose access to the products they need. It could also affect pricing for customers, less popular items may be discounted while popular products may see less frequent promotions, and pricing will always be a concern for customers, therefore giving them a secondary stake in this solution.

**Suppliers:** Similarly to customers, the analysis highlighting what items do and do not sell well will have an impact on what PHP chooses to order from their suppliers. Therefore after the solution is implemented some suppliers may lose business as PHP identifies their products do not sell as well, while other companies may generate more sales to PHP for popular items.

### 3. Deliverables and schedule

The project will deliver a system that upgrades the client's current system. The system to be developed is to allow the addition, viewing, and editing of transactions; analyse sales, predict sales, generate reports for weekly and monthly downloads in the form of CSV, all in a web based environment. Along with the system, there will be accompanying items, such as a detailed user manual and documentation, a training guide, and the source code for the application being developed.

#### Initial Release Schedule

No.	Item	Dependencies	Business Value (1 least – 10 most)	Release Schedule
1	Add a sales record	0	10	Sprint #1
2	Edit a sales record	1	9	Sprint #1
3	Display a sales record	1	8	Sprint #1
4	Display monthly sales report	3	9	Sprint #1
5	Display weekly sales report	3	9	Sprint #1

6	Creation of User Documentation/Manual to outline application, in it's current state	1, 2, 3, 4, 5	5	Sprint #1
7	Display statistical sales data for item/s (Bar chart/Pie Chart)	3	8	Sprint #2
8	Login page to authenticate manager	3	8	Sprint #2
9	Generate a monthly sales report as a CSV file	5	8	Sprint #2
10	Generate a weekly sales report as a CSV file	4	8	Sprint #2
11	Amendment of User Documentation/Manual to outline changes made	6, 7, 8, 9, 10	5	Sprint #2
12	Predict the sales of an item on a monthly basis	5	7	Sprint #3
13	Predict the sales of an item on a weekly basis	4	7	Sprint #3
14	Predict the sales of a group of similar items on a monthly basis	5	7	Sprint #3
15	Amendment of User Documentation/Manual to outline changes made	11, 12, 13, 14	5	Sprint #3

## 4. Solution Direction:

We performed KoST analysis to understand the problem domain as well as the strength and weakness of the team. With the help of this analysis we have developed a high level architecture for the application.

### 4.1. KoST Analysis

Knowledge	In this project Peoples Health Pharmacy (PHP) is gaining development of a problem domain for a pharmacy. The team's experience is scarce in the domain for this project. We carry in experience from retail environments, which are similar in nature but obviously are not the same. We will look at making modifications where needed but using the knowledge and experience in the retail environments we must help mould a system that will work for our client.
Skills	The team and I are extremely limited in terms of knowledge of building a Graphical User Interface (GUI) for a system to stand alone in a desktop environment. We do have high level experience in designing and developing systems for web interface, that are not only user friendly but fully functional.
Technology	We will be using HTML, CSS, PHP, MySQL for this project and as a team we carry a sound knowledge in using the above mentioned languages and technology.

Performing a GAP (KoST) analysis allowed us as a team to gain an insight and therefore understand our individual strengths and weaknesses for this project. Hence, we have decided to design and develop a system for the client, that will have all the features and capabilities set out by the client. This system will be built as a web application, instead of a standalone desktop application, due to the team's knowledge in designing and developing web based applications.

We have decided to go with a Web application over a native application for the following reasons:

- Web applications will run on most clients, no matter what hardware or operating system the user is using we can expect most browsers will work with our solution.
- No installation required; we won't be wasting time having to install software to many clients.
- All updates are to the server only, nothing will have to be updated on the client side.
- Easier to maintain, all updates and maintenance will happen on the server side.

### 4.2. High level design

Our design consists of 3 layers, A web layer, Business layer and the Database layer. The web layer gives the user access to the web page and authenticates the user to access the database. The business layer or the business logic layer solely retrieves information as per user's requirement from the database and also generates a weekly and monthly sales report. Finally, the database layer has all the sales records stored. This design ensures confidentiality, Integrity and availability of the application.

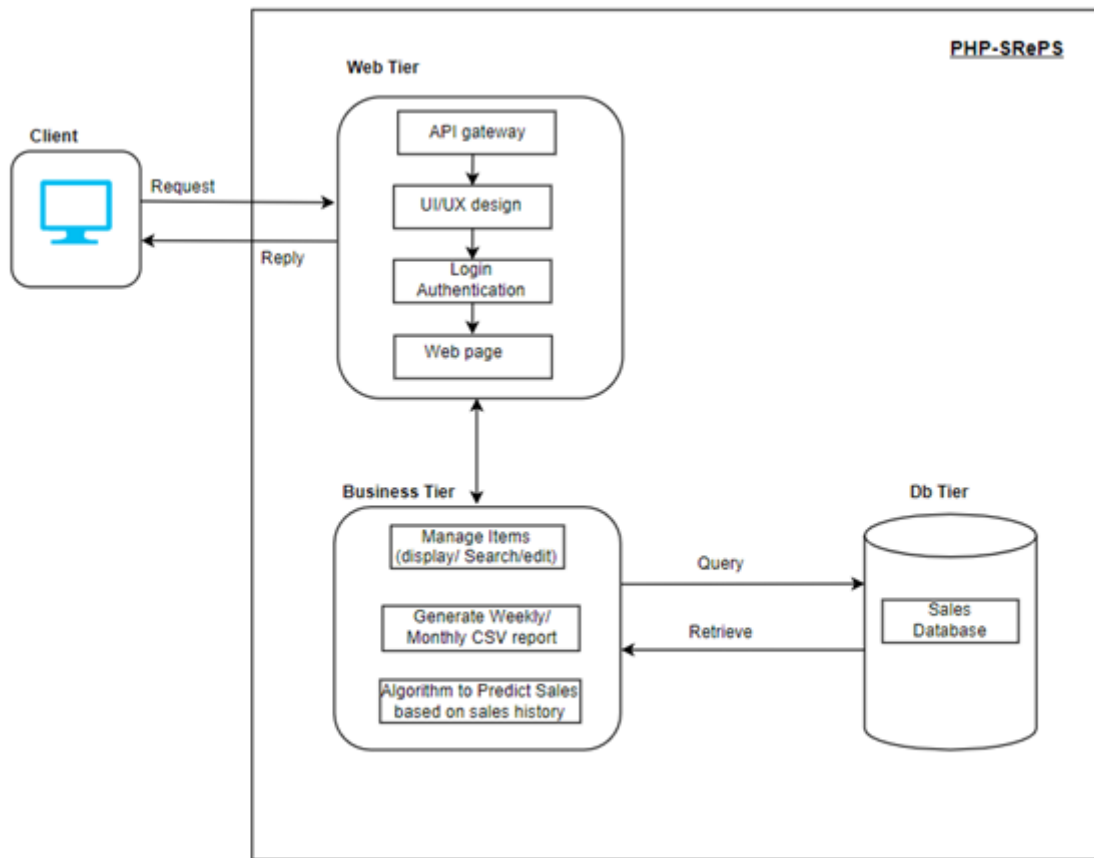


Figure 1: High level architecture for PHP-SRePS

**Web Tier:** The client who is the manager of People Health Pharmacy sends a HTTP request to access the web application. The request reaches the API gateway, UI/UX design principles are applied throughout the front-end of the application to maximise productivity and for better visualisation. Manager/ Employee Login is requested and SHA-256 encryption is implemented for authentication. The manager can then access the webpage and view records from the database.

**Business Tier (Business Logic Layer):** The Client uses business logics to view the sales data or popular item. This layer also predicts the future product sales based on an algorithm that uses previous sales data. Weekly and monthly CSV is also generated at this layer. The requested data is then fetched from the database.

**Database Tier:** All sales records are stored in the sales database. Relational database is used and XAMPP approach is implemented. The database follows ACID (atomicity, consistency, isolation, durability) principle and is designed with a well-defined schema. This facilitates easy retrievals.

## 5. Quality Management

The quality in the context of this particular project can be defined as the degree to which a set of inherent characteristics fulfills requirements to produce a shippable product. To define the product quality, we would be using the SMART criteria. Specific, Measurable, Achievable, Realistic, and Time bound (SMART) is used to determine if goals for the project are suitable by ensuring they meet the criteria in the name. Having a defined set of SMART goals not only helps in measuring progress in a meaningful way but also show achievements and produces improvement opportunities. The objects for the project for PHP will be high-level goals based on the SMART model. All these goals are defined as follows:

- Users must be able to search for sales records or items, using a defined time period, and item descriptions. A query should generate results within 2 seconds from the user starting the search, triggered by pressing the enter key on a keyboard or clicking the search button.
- Generate weekly and monthly CSV files for sales records. Downloads of previous reports should be made available through the application. These reports should be available every first day of the week and the first day of the month.
- Users should be able to authentically login through the website within 2 seconds of submission.
- Users should be able to view predictions about any item within 2 seconds of query submission.
- Users should be able to learn all standard functionality of the application within 1 week of training.

## 6. Resources

For the successful completion of the project, the resources that we need are the capital, developer team and material goods. Having adequate resources is the integral part of a successful project as it ensures the continuity of the project given any scenario. The resources for the PHP project have been classified into two categories, namely, human and non-human resources.

### 6.1. Human Resources

The most important resource is the human resources because they are the ones who do the work. Each individual might work during the entire duration of the project or on an ad-hoc basis based on their technical skills, knowledge, and business expertise. Common examples of human resources are project managers, project teams, individual professionals and legal entities. Individual professionals within the project development team for the PHP project are:

- Tristan: Team Leader
- Naveen: Developer
- Yuvraj: Developer lead
- Nicolas: Developer
- Constantine: Tester
- Cameron: Tester






## 6.2. Non-Human Resources

Non-human resources involve capital, materials and time needed for the project to be driven to completion. Capital, also known as project budget, is used to finance human resources, purchase resources, and any additional costs. Material resources involve machines, equipment, software etc. Moreover, time resources are the time periods available for each task completion. Project plan, project schedule, and time invested are some of the time resources necessary to accomplish the project within the given time frame.

## 7. Approval Signatures

### 7.1. Project Team

	Name of student	Student Id	Signature
1	Naveen Shankar	102655538	
2	Con Kastanaras	102338813	
3	Yuvraj Ralh	102654302	Yuvraj Ralh
4	Tristan Schnabl	102146249	
5	Cameron Anderson	101098802	Cameron Anderson
6	Nicolas Rae	101629956	Nicolas Rae

## 7.2. Project Sponsor

<b>Tutor's name (on behalf of the client)</b>	<b>Signature:</b>