04P: PHP-SRePS : Solution and Design

Group 07

Tutorial : Wednesday 8:30-10:30 Odd week.
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NAVEEN:

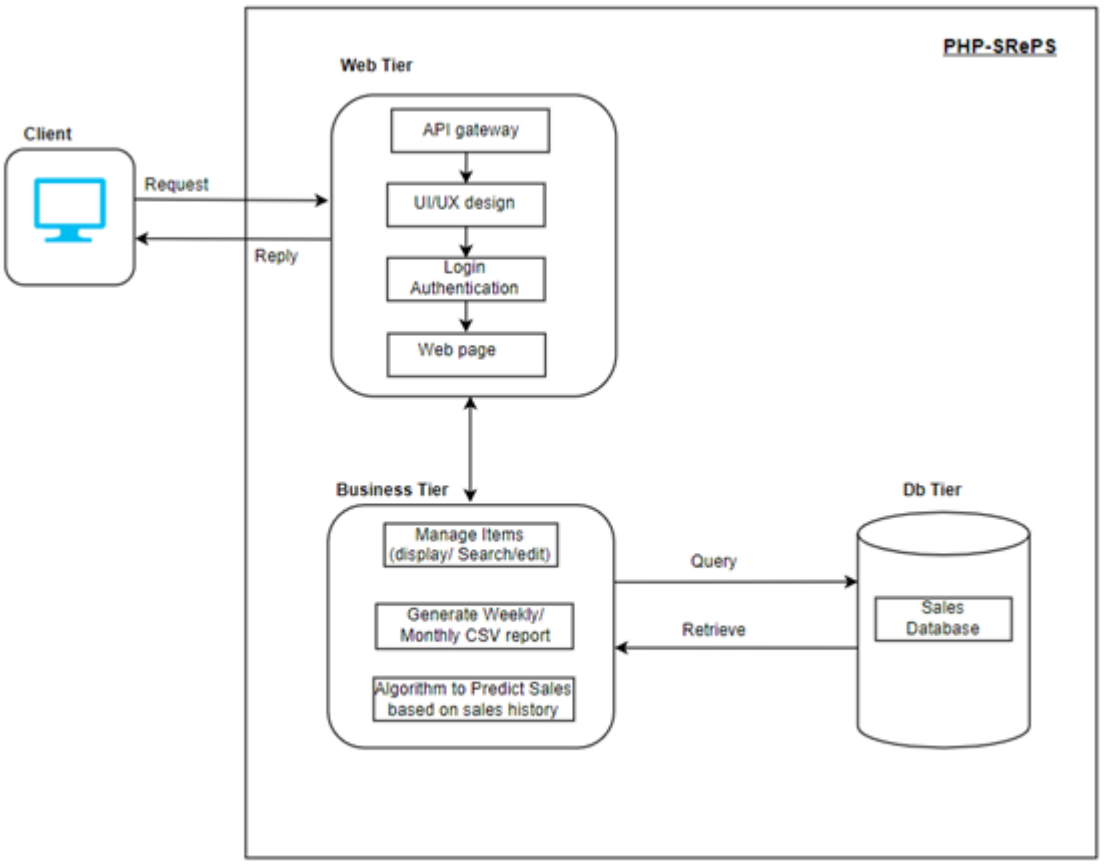
KoST Analysis

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.

High level architecture

The following is our architecture for Sales report and prediction system application for People health pharmacy. The system we built is a versatile and fluid web based environment, allowing for any change in the near or distant future.



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.

Justification for Web application

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

We as a team also have much more knowledge working with web pages than native applications as we have all created web pages and integrated them with databases.

Team member Comments:

Cameron: I was happy with the consensus reached by the proposed web based application as it best caters to the scope of the project and the limitations we will face, as well as the end user environment. In particular it is important to consider the use environment, as PHP has previously been using a solely paper based system, any implementation of a complex to manage solution will be met with resistance and may lead to them not using the solution. Having a web based solution takes care of the installation, allows the solution to be used from a variety of devices and can also be managed and updated on a back end without requiring any work from the on site managers.

Naveen: Working as a team we were able to determine an appropriate solution. With the help of KoST analysis we were able to analyse the problem domain and determine an appropriate solution domain. By following a traditional enterprise web application model we will be able to create an easy user friendly application for item sales and prediction. Implementing 3 layers: Web, Business and Database helps us differentiate services in each layer ensuring confidentiality, integrity and availability of the application. Overall I am happy with my team's methodology and final solution.

Tristan: As a team we were able to work together to decide on a solution that we believe will be appropriate and meet the needs of the client. Kost analysis was useful in identifying a solution as well as the problem domain for the project. Enterprises with web applications have a model that works in a similar fashion, allowing for a system that can be developed to be user friendly, scalable, and fluid as required by the client. The application will be built to record sales and make predictions for stocked items, that will allow the manager to make orders that will mean shelfs stay stocked allowing for a better product supply system. Web, Business, and Database are the layers of the system that break up the way the system will be built. This also allows for added features like scalability, availability, a secure and safe storage of data, and stability for the system. Overall I am pleased with the teams efforts and strategic management of working towards the end goal, and the progress towards the final solution.

Con: I agree with this web-based solution over a native one after discussing it with the group. All our experience is mostly with web-sites, as is our experience with integrating applications with databases. I believe we definitely have the expertise to implement our solution for the application and the database, and it should be relatively straightforward for us. We are all on the same page for the final design of the application, and how we will achieve it as we have similar experience from previous units.

Nic: A web-based application is the solution that has been decided as a team and this final decision that has been made is what i agree with. The team has the experience and is confident in being able to create a user friendly web-based application fit for recording product sales, sales predictions, and the application can integrate with sales databases. The team is confident that we can execute on this and create the appropriate solution.

Yuvraj Ralh: I am in total agreement with the solution that we have reached as a team. The most significant factor that led me to go with the aforementioned solution direction is that it entirely suits our skills and our project environment experiences as clearly indicated by the GAP analysis. During the team discussion everyone of us decided to develop our project based on the 3-tier architectural model for a web-based application. I believe that this would modularize the whole project and make it scalable and flexible at the same time. Moreover, this would also impart confidentiality and would be much more user-friendly as compared to the alternatives. Thus, I feel content with the current solution that we were able to reach as a team.