**VetPet**

**Software Design**

**CSCI-P465/565 (Software Engineering I)**

**Project Team**

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**1. Introduction**

This section introduces the design approach to the software system.

* 1. **System Description**

VetPet intends to streamline the treatment of animals by local veterinary doctors through a centralized web portal which acts as a medium of communication between the two parties. In addition, the system will support insurance plans for the animals by connecting the pet owners with multiple insurance plan providers. The system will be unique in a way that very few existing systems currently exists in the country which centrally govern the treatment of animals.

**1.2 Design Evolution**

This section is intended to document the rationale behind the selected design solution.

**1.2.1 Design Issues**

Application only needs a Web browser to be accessed.

**1.2.2 Candidate Design Solutions**

We have decided to build most of the components in the system using JSP as the backend. We are looking to deploy the application on the Amazon Web Services server.

**1.2.3 Design Solution Rationale**

Java Server Pages (**JSP**) is a server-side programming technology that enables the creation of dynamic, platform-independent method for building Web-based applications. **JSP** have access to the entire family of Java APIs, including the JDBC API to access enterprise databases.

**Amazon Web Services** offers reliable, scalable, and inexpensive cloud computing services. There are sources available in the aws.amazon.com to assist in hosting.

**1.3 Design Approach**

**1.3.1 Methods**

Until now we have designed the Login and User registration feature for which the approach used is that along with the normal registration and login process, we will encrypt the user’s password and store it in the DB. Also, there will be a Duo authentication for all the users every time they login. Forgot password feature will consist of two options to reset the password i.e. either using Security Question or Duo authentication.

For testing, we would be using unit and regression testing. Unit tests are for stability and code predictability, while regression testing is for evaluating of how users interact with the code.

**1.3.2 Standards**

We are adhering to the JSP standards and practices as mentioned in the official documentation.

Apart from these, we are using JavaScript and HTML5. Also, CSS3 will be used to provide better look and feel of the GUI

**1.3.3 Tools**

* Editors – Eclipse, Sublime Text 2
* Webserver- Tomcat
* Database - MySQL
* Hosting- Amazon Web Services

**2. System Architecture**

**2.1 System Design**

At a higher level, our system will have classes/functions for each component implementing a specific feature. At a lower level, each functions will have its own Logic and Unit Tests.

We have used a basic template for our HTML pages having the same header and footer. This template will be inherited for all the HTML pages that we develop.

**2.2 External Interfaces**

**MENTION THE API’s WE ARE USING FOR DUAL AUTHENTICATION**

**3. Component Design**

**Component Name**

Login and registration

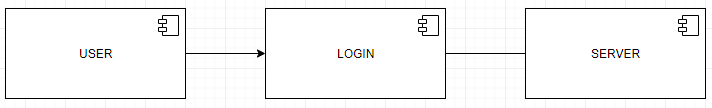
**Component Description**

The Login form allows the users to login with the credentials. When providing the correct credentials, the user will be receiving Duo authentication mail containing an One Time Password (OTP). Then the user must authenticate for the second time using this OTP and once they are verified, they will be logged in to the website.

**Responsible Development Team Member**

All the team members had divided this major component into smaller chunks and then integrated it together.

**Component Diagram**

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**Component Objects**

User Component: A User who will be connect to the URL of the website and then will either register themselves if they will be new user or else they will log in to the site if they are existing users.

Login Component: This component consists of multiple objects which are given below

Login – Authenticate the User based on provided credentials

Registration – Form to register new user along with the security questions.

Duo Authentication – Send an OTP to the user in email and authenticate once they have provided correct OTP.

Forgot Password – Forgot password has 2 options, Security question and OTP. Security Question will have 2 questions, if user answers them correctly they will be able to reset the password. Or an OTP will be sent to their registered email, if they authenticate themselves using OTP they will be able to reset their password.

Database Component: This component will store all the User’s data and credentials and will be used to authenticate the users based on the Database calls made to the server.

**Component Interfaces (internal and external)**

The component will make calls to the Database to validate the credentials of users trying to access the system. The component will check with the database to validate the credentials.

**Component Error Handling**

If a user is trying to login with invalid credentials such as Invalid username or Invalid password, they are handled in the component.

**Revision History**

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| --- | --- | --- |
| **Revision** | **Date** | **Change Description** |
| Initial Version |  |  |
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