PREVENTIVE HEALTH MANAGEMENT PORTAL

Client Overview

Our client is a dedicated healthcare company helping people discover their odds of genetic and environmental susceptibility to chronic diseases. Our client's advanced and proprietary solution enables end users to understand their disease risk levels as well as actionable programs and guidelines on how to control, reduce or prevent risk of the disease.

Engagement Situation

Life style changes and the strides in technology have given rise to the need of predictive health to enable people to anticipate healthcare needs and be better prepared for the future. People these days want to predict risk based on their unique clinical, lifestyle, environmental, and genetic data. Our client wanted to develop preventive health management portal, which would provide information for a user's current and perceived health issues based on his/her family history, DNA and suggest how these can be prevented.

Key Requirements :

To implement web based architecture which provides the following functionalities:

- Our client wanted to create a solution which could assess one's risks for a variety of diseases based on genetic, medical, behavioral, and environmental information.
- Integrate features like clinic support tool, to enable better medical-decision making through physician expertise, clinical knowledge, genome interpretation, and health analytics.
- Add dashboard feature for charting and plotting genetic data to make sensible view of human chromosomes.
- Appropriate caching and storage of application data to make interactions quick and user friendly.
- Enhance the UX of the application for ease of navigation.
- Integrate PayPal payment gateway with the new tool.
- Integrate wearable's API to track physical activity progress through wearables.
- Integrate Customer Support Tool (Zendesk).
- Multiple browser support to provide customer friendly access to the application.
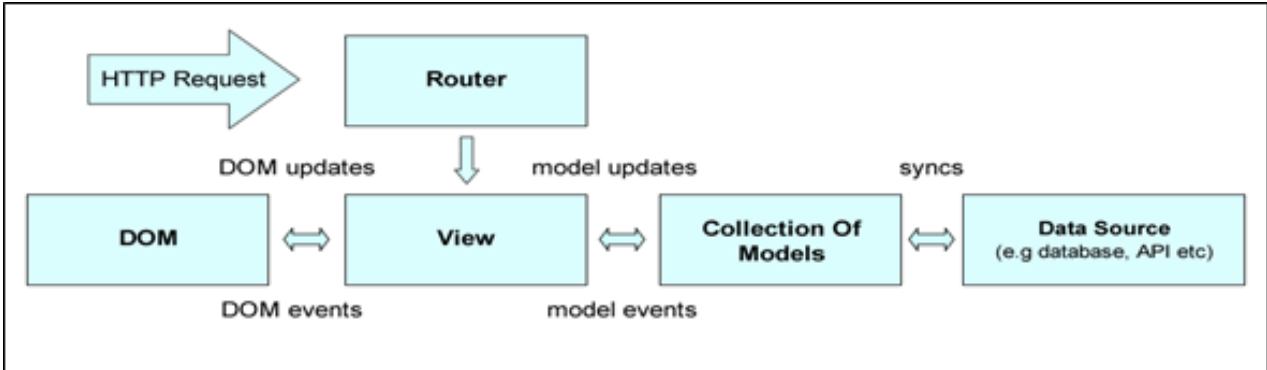
Xoriant Solution

Xoriant developed a clinic support tool, to enable better medical-decision making through physician expertise, clinical knowledge, genome interpretation, and health analytics. Xoriant provided lightweight and optimized code using latest optimization tools and modules of Node.js and used Selenium as a testing framework for the tool. The task/defect life cycle was managed using Rally in an efficient way. Xoriant ensured code quality with peer review and unit testing and documented the same.

Xoriant Key Contribution

- Created Customer Relationship Management system that holds encrypted data of physicians, nurses and patients that use JSON based REST APIs using Spring MVC and Jackson framework.
- Integrated PayPal payment gateway with CRM Module and Web Application Interface for easy online payments.
- Integrated wearable's API to track physical activity, calorie intake, and sleep activity in order to measure progress towards a healthier life style through wearable.
- Integrated multilingual support which allowed user to translated the language preference on the fly.
- Used latest HTML5 and CSS3 features for plotting of the genetic/genomic data (chromosome chart), risk level logarithmic plots and family tree.
- Used jQuery/backbone.js to make the application extensible and manageable.
- Used D3.js and jqPlot to plot the user data in very interactive manner.
- Used HTML5/CSS3 for drawing custom family tree, which can be zoomed and dragged for effective user experience.
- Enhanced the UI of the tool by using HTML5, CSS3, jQuery, and Backbone.js.
- Optimized the web application for minified versions of JavaScript/CSS inclusions.
- Automated testing framework using Selenium.
- Provided the physicians with relevant medical prescription with pharmacogenomics engine.

Architecture Diagram

Tools & Technologies

- HTML5/CSS3
- JavaScript/jQuery
- Backbone.js/Angularjs
- PhoneGap
- Ionic framework
- Gulp/Grunt

- GIT
- Spring framework
- Jackson
- MongoDB
- Selenium

Business Benefits

- Easily extensible and more than 70% modifiable application architecture for future updates.
- High acceptance of web portal due to the ease of use and seamless user experience on multiple browsers.
- Aggressive releases resulted in shorter time to market thereby giving our client a first mover advantage over competition.
- Provided ease of data access to various administrators who could manage dashboard remotely which ultimately reduced the turnaround time by 20%.