**Web Design Capstone Project**

**Group Name: Peak Performers**

**Bhargav Desai**

**Meshwa Patel**

**Rahul Chaudhari**

**Professor Name: Kunwar Khurmi**

**Part 1: Research**

This report is based on the research we did as we were finding trendy buzzwords and the latest technology to decide the technology stack for our capstone project.

We found the following buzzwords that are trendy in website development: JS rendering, virtual DOM, server-side rendering, JSX (a React framework), AST (abstract syntax tree), Linter, Headless Browser, etc. Some trendy JavaScript framework we found are Angular, Vue, React, and Next which are frond-end frameworks and Node, Express, Laravel, Jest which are back-end frameworks.

We learned lots of technology in this web design and development program, some basic technologies like HTML, CSS, and JavaScript, .NET, D3 JS, NodeJS, and PHP.

From a Technology point of view, we believe the most interesting and trendy web development technologies are Python, PHP, TypeScript, Ruby, Glolang, and ReactJS. Although we're learning PHP in our design e-commerce site subject this semester, some insights for others that were not covered in our web design and development course.

Python:

This language has gained a lot of popularity in recent years. While it's not exactly new and has passed the test of time, it's probably the most versatile programming language at the moment. We can use Python for web development, Data Science, Scripting, and Automation. Similar to JavaScript, Python also enjoys huge community support and has a lot of useful frameworks, libraries, and tools that can help you create a web application in a quick time.

TypeScript:

A modern programming language for web development. Just like we have C and C++, TypeScript can be considered as JavaScript++ though it’s not as popular as C++. The good part of TypeScript is that it adds type-safety in JavaScript code which means you can catch nasty JavaScript type-related errors in the development phase. It also makes developing object-oriented code easy for JavaScript and several inbuilt debugging tools of TypeScript make web development really easy.

Ruby:

Ruby is another programming language that is really great for web development. Similar to PHP and Python, Ruby is also easy to learn and go for beginners. What makes Ruby special for web development is the Ruby on Rails framework which powers websites like Github, Shopify, Airbnb, Groupon, GoodReads, and Kickstarter. Ruby is mostly used for web applications. However, it is a general-purpose language similar to Python, so it has many other applications like data analysis, prototyping, and proof of concepts. Probably the most obvious implementation of Ruby is Rails web, the development framework built with Ruby.

Glolang:

it was one of the top 5 most loved programming languages by developers across the world. Go is a statically typed programming language that is designed at Google and has syntax quite similar to C language. The language allows the developers to build scalable and secure web applications more efficiently. One of the major advantages of using Go is that it provides excellent support for multithreading and also, it has the garbage collection feature for automatic memory management. Some of the other considerable features of Go language are – easy to learn, readable code, backed by Google, compiled language, package management, powerful standard library, concurrency support, high-performance, and many more.

ReactJS:

it's a front-end JS library developed and maintaned by Facebook(Meta). it's used as a single-page application (SPA) development and has the feature of Virtual DOM, which is trendy nowadays and for mobile application development.

We believe that learning Ruby and ReactJS specifically can make a lot more changes in our job-seeking opportunities as it is the most trendy and more efficient trend that we missed studying.

Other trending things in web development which we found are as follows: Artificial intelligence and machine learning adaptation for better website behavior, using voice-based search in website, Single page applications rather than multi-page applications, motion user interface for page interactivity, and so on.

**Part 2: Project Proposal**

1. What is the key functionality of the website you want to make?

* We come with a web application based on the “Dental Care Website”. It contains various features as well as functionality. Moreover, this website is easy to navigate and gives a clear indication of where the user is placed. Also, this website’s URLs are very easy to remember. In addition, it has very unique and standard layout that would be consistency through out whole websites.

2. What content will it contain?

* This website has limited and proper number of pages, that contains various basics details and user can book an appointment and do payment as well on this website. Basically, it contains all the details regardless to Dental. Also, take the prescription as well.

3. What technology will you use?

* We are going to use PHP code that will help on the server side. Moreover, we would like to use HTML, CSS and Bootstrap as well.

4. What extra functions would you add if you get more time?

* If we get an opportunity to add more functionality, we will surely add multiple language tool that can boost the users and enhance their experience as well. Furthermore, we would like to work on Password protection as well. Also, dark mode can be the option to be added.

5. What new technology would you like to learn while you’re doing the capstone?

* We would like to learn Ruby on Rails because that will make development easier and faster.

6. How will you learn the new technology?

* There is various platform, blogs and authorize websites available by using that we can learn and grow over knowledge towards Ruby on Rails.

7. What could go wrong with your project while you develop it?

* Honestly writing, if we could apply Ruby on Rails instead of our decided platform. Then there would be some chance to lose our track and that can be take too much time than expected to resolve those issues.

8. What will you do if you run into an extremely difficult problem while creating it?

* If we could face extreme difficulty while creating this, we surely try to resolve it by our own first. Then and on the second thought, we will reach out to our professor who is ready to solve our problems. With the help of them and our constant trying support will surely reach out to the particular solution together.