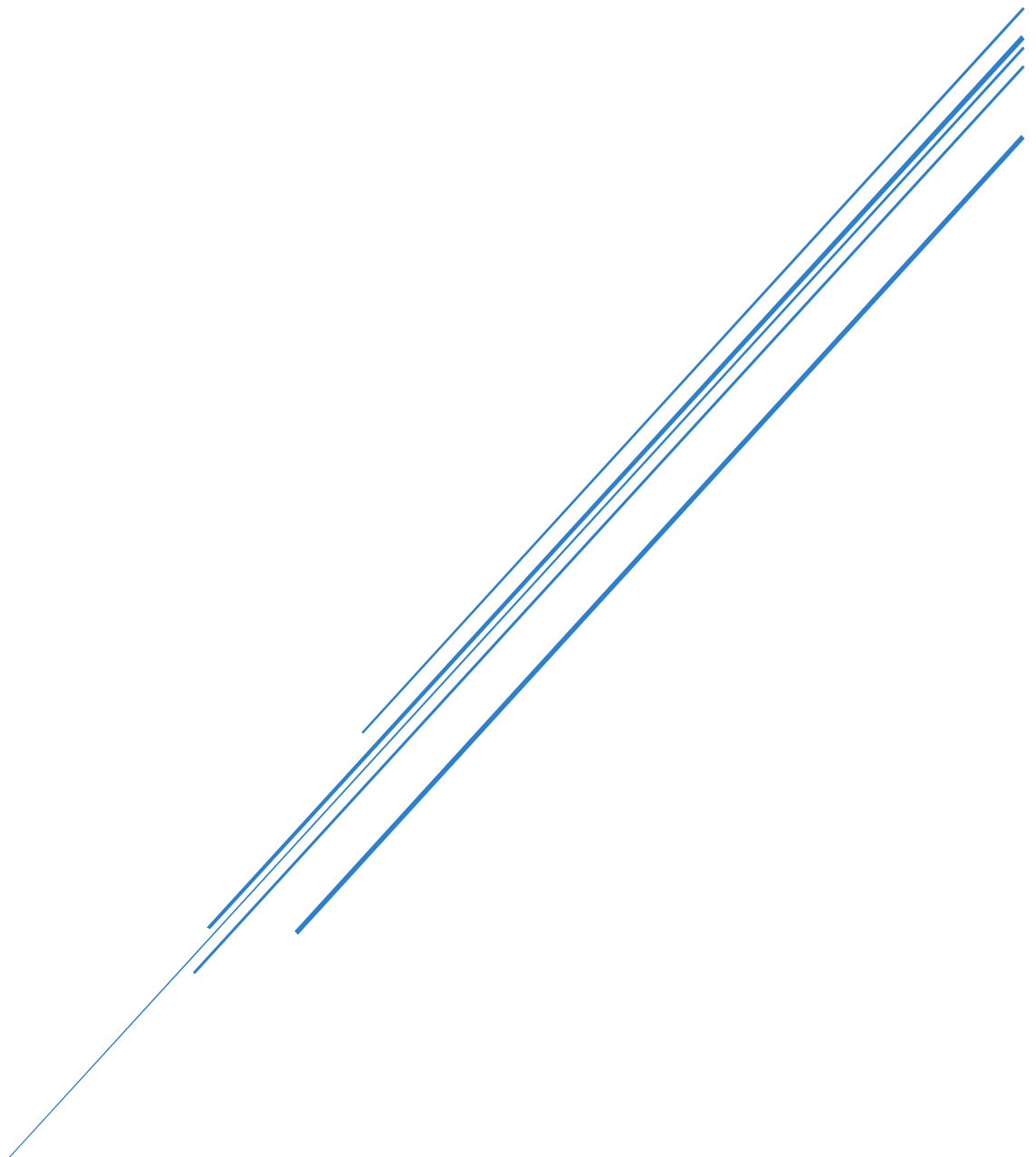# WEB DEVELOPMENT ASSIGNMENT

PROJECT NAME: BLISS CAFE

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Report

1. What is a Web Application

- "A Web application is an application that is invoked with a Web browser over the Internet. Ever since 1994 when the Internet became available to the public and especially in 1995 when the World Wide Web put a usable face on the Internet, the Internet has become a platform of choice for many ever-more sophisticated and innovative Web applications. In just one decade, the Web has evolved from being a repository of pages used primarily for accessing static, mostly scientific, information to a powerful platform for application development and deployment. New Web technologies, languages, and methodologies make it possible to create dynamic applications that represent a new model of cooperation and collaboration among large numbers of users. Web application development has been quick to adopt software engineering techniques of component orientation and standard components. For example, search, syndication, and tagging have become standard components of a new generation of collaborative applications and processes. Future developments in Web applications will be driven by advances in browser technology, Web Internet infrastructure, protocol standards, software engineering methods, and application trends."

- Web apps are software applications that are built into a web server and can be used via the internet through a browser. The biggest difference to applications that are typically installed on the users' devices are web applications, which are not downloaded. However, they are communicated through the World Wide Web and enable users to accomplish work, work on data, or receive services.

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- Web applications are as flexible and operate in response to user inputs, real time data processing, and other systems. They include business sites, online shopping centres, social sites, and many others such as managerial tools.

In the case of Bliss Cafe, the web application stands for the management system in the cafe where the staff as well as the customers can interact with the menu place the order and manage the system.

Features of Web Applications:

- Accessibility: Does not require downloading, meaning that the information can be retrieved from any point of connection to the World Wide Web.
- Cross-Platform Compatibility: Supported on multiple devices and platforms can be used is different operating systems.
- Centralized Data Management: Usually, information is kept on a server – thus making it easy to update and back up information.
- Scalability: capable of identifying multiple users at a time hence does not require a different installation.

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2. What technologies will you use to develop your application?

The development of the Bliss Cafe web application involved the use of several technologies, both for the frontend and backend:

Frontend Technologies:

- **HTML (Hypertext Markup Language):**
  - ➢ It is to format the content of the website.
  - ➢ Sets the aspects like headings, button, form and tables.
  - ➢ "Learning Hypertext Markup Language (HTML) and Extensible Hypertext Markup Language (XHTML) is like learning any new language, computer or human. Most students first immerse themselves in examples. Studying others is a natural way to learn, making learning easy and fun. Our advice to anyone wanting to learn HTML and XHTML is to get out there on the Web with a suitable browser and see for your-self what looks good, what's effective, and what works for you. Examine others' documents and ponder the possibilities. Mimicry is how many of the current webmasters have learned the language."

- **CSS (Cascading Style Sheets):**
  - ➢ It is used in the application of the web page layout for beautification of the web page.
  - ➢ Offers layouts, colours, fonts and the functionality of being able to respond.

➢ "Cascading Style Sheets (CSS) are a powerful way to affect the presentation of a document or a collection of documents. Obviously, CSS is basically useless without a document of some sort, since it would have no content to present. Of course, the definition of "document" is extremely broad. For example, Mozilla and related browsers use CSS to affect the presentation of the browser chrome itself. Still, without the content of the chrome-buttons, address inputs, dialog boxes, windows, and so on-there would be no need for CSS (or any other presentational information).

- **JavaScript:**

➢ Makes the web pages interactive and exhibits the behaviour in response to the user's actions.

➢ Performs such operations as recalculation of the total price in real time and switching between different grids using buttons.

➢ "JavaScript is ubiquitous on the World Wide Web. You can use JavaScript both to make your Web pages more interactive, so that they react to a viewer's actions, and to give your Web pages some special effects (visual or otherwise).

➢ JavaScript often gets thrown in with Hypertext Markup Language (HTML) as one of the recommended languages for beginning Web developers (whether you build Web sites for business or pleasure). Of course, you can build a Web page by using only HTML, but JavaScript allows you to add additional features that a static page of HTML can't provide without some sort of scripting or programming help."

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Backend Technologies:

- **ASP.NET with C#:**

  ➤ During the peak of web 2.0 a server-side framework for building dynamic web applications.

  ➤ Captures data and content interactions, controls business processes and renders dynamic content.

  ➤ "Microsoft first announced ASP.NET (then called ASP+) and the .NET platform in July 2000. In essence, .NET is a new development framework that provides a fresh application programming interface to the services and APIs of classic Windows operating systems, especially Windows 2000, Windows XP, and the recently released Windows Server 2003, while bringing together a number of disparate technologies that emerged from Microsoft during the late 1990s. Among the latter are COM+ component services, a commitment to XML and object-oriented design, support for new web services protocols such as SOAP, WSDL, and UDDI, and a focus on the Internet.

  ASP.NET is significant enhancement to and extension of classic Microsoft ASP. ASP programmers will be very pleased by how easy the transition to ASP.NET is, yet there is tremendous power and flexibility in the new development platform. ASP and ASP.NET applications can run side by side, allowing for easy migration of legacy applications."

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- **SQL Server:**
  - ➢ A system for the storage and retrieval of data in related records, for example, the records of customers' orders or the details of offered menus.
  - ➢ "In the 1980s, Oracle dominated the database market (to a certain extent, it still does). Late in that decade, Microsoft wanted to start competing with Oracle, so they built a database system together with another company, Sybase. This fared well enough to encourage Microsoft to continue development. In the mid-1990s, Microsoft and Sybase parted ways and Microsoft completely redeveloped SQL Server. The first major rewritten version was version 7.0, released in 1998. If you were to look at the internals of version 7.0 today, you'd see a lot of similarities with the current version, SQL Server 2014."

Development Tools:

- **Visual Studio:**
  - ➢ Integrated Development Environment (IDE) made use for coding, Debugging, testing of the application.
  - ➢ "Ever since software has been developed, there has been a need for tools to help write, compile, debug, and deploy applications. Microsoft Visual Studio 2012 is the next iteration in the continual evolution of a best-of-breed integrated development environment (IDE).
  - ➢ With each iteration of the Visual Studio product, the installation process has been incrementally improved,

meaning that you can get up and running with Visual Studio 2012 with minimal fuss."

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3. Explain the purpose of each of these technologies.

HTML:

Purpose:

- Web development wouldn't be possible without HTML, which gives the structure for the Bliss Café website. The elements mentioned here are summery tables, form for the order, and navigation buttons.

Example in Bliss Cafe:

- It is used so that the summary page Orders grid can be created.

CSS:

Purpose:

- CSS makes the website look better. This enables customized colour, fonts and layouts so that the interface is both engaging and user friendly.

Example in Bliss Cafe:

- I styled the menu page out so all the items were displayed neatly with interactive hover effects on buttons.

SQL Server:

Purpose:

- It's responsible for all persistent data, such as order details, menu items and customer info, that are stored in SQL Server.

Example in Bliss Cafe:

- The summary page takes customer details out of the Orders table, and the order form saves data into the Orders table.

4. What are alternatives to the technologies mentioned above?

Alternatives to HTML:

- There isn't really a direct alternative to HTML since it's a core concept of web development, although you can use some Website Builders (Wix or WordPress), which will automatically generate HTML for you without needing to hand code it.

Alternatives to CSS:

Tailwind CSS:

- A predefined class-based CSS framework used as a utility first CSS framework.
- Allows faster prototyping.

Materialize:

- It is a framework based on Google's Material Design for building sleek and modern UI designs.

Alternatives to JavaScript:

TypeScript:

- It's more than JavaScript with additional features like type safety.

jQuery:

- A JavaScript library for DOM manipulation and AJAX calls simplifying tasks.

Alternatives to ASP.NET with C#:

Node.js:

- It's a runtime environment for JavaScript that lets you develop server sided applications.

Lightweight fast web application suitable.

PHP:

- You've already heard about a server side scripting language widely used for web development,
- It synchronizes well with SQL databases (MySQL).

Alternatives to SQL Server:

MySQL:

- It is an open-source database management system which is highly scalable and is used on web applications.

PostgreSQL:

- A powerful open-source database with advanced features like JSON storage, geospatial data.

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Conclusion

Bliss Cafe web application shows the combined potential of using multiple technologies for an interactive, functional and visually appealing solution for cafe management. Each technology played an important role to help achieve the project objectives: from the structure of HTML to the dynamism of ASP.NET and JavaScript.

The chosen stack had easy development, scalability and compatibility while alternatives are present for each; however, the stack chosen was chosen because of the ease of development, scalability, and compatibility. Future work could evaluate alternate frameworks and building blocks to further optimize the application's performance and user experience.

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