Assessment Report

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This document provides answers to the four questions required for the assessment submission.

1. The amount of time spent on the assessment

Although all candidates were given five business days to complete the assessment from 4th March till the 8th, I was not able to fully dedicate them to it. This is due to working in a 7am to 6pm internship at the moment, which allowed for a maximum of four hours of work a day. Therefore, I have worked for approximately 16 hours on the assessment. These hours were divided on the development of the prototype, attempting API calling and writing the documentation reports.

2. The list of technologies used in the assignment

The following technologies were used for the development of the prototype:

Languages:

- C#
- SQL
- HTML
- CSS
- JavaScript

Programmes:

- Visual Studio Enterprise 2015
- SQL Server 2014

Frameworks:

- ASP.NET

3. Technology choices justification

The following provides justifications on why the technologies specified in section two were chosen, with comparing them to other tools when appropriate:

3.1. Application programming interface (API)

Although using API calls to fetch data from the TMDB was requested for this assessment, it has been decided to retrieve data from a local SQL Server database instead. This is due to the time learning this new technology could consome from the 16 hours set for this project, as I have no prior experience in using this technology. While I am always willing to learn new technologies, spending hours learning API and then implementing the requested features and creating the documentation does not seem possible to achieve within 16 hours. However, using API has been attempted which can be found in the file 'API'.

3.2. Database Management System

Choosing a database management system for an application development is affected by various factors that include the experience level with the management system, its integration with the other used languages and frameworks, and the cost. The database management systems that were considered are Microsoft SQL Server, Oracle Database and MySQL as these are the most commonly used systems.

Although MySQL is open-source, both Microsoft SQL Server and Oracle Database provide express versions that are free to use. The choice for the database management system is,

therefore, based on its integration with the Microsoft environment that is used in this project, which integrates greatly with the Microsoft proprietary: Microsoft SQL Server. This database management system, therefore, will be used in the prototype database implementation. An overview of the tool is illustrated below.

3.2.1. Microsoft SQL Server Management Studio 2014

Microsoft SQL Server Management Studio is a graphical user interface that allows the management, monitoring, maintenance and development in a SQL Server environment. It offers a set of tools that simplify the configuration and development of SQL Server instances. The 2014 version was used in this assessment.

3.2.2. ASP.NET Data Access - LINQ to SQL

.NET Language Integrated Query (LINQ) to SQL is an object relational mapping implementation within the .NET Framework. It allows for the modelling of a relational database using .NET classes. LINQ queries can be then used to retrieve, update, insert or delete data from the database.

3.3. ASP.NET Web Forms

This framework was chosen for the prototype development due to the familiarity with it from previous university courses and projects.

3.4. Visual Studio Enterprise 2015

Although text editors can be used to develop ASP.NET Web applications, Visual Studio was used as it is the main tool for developing this type of application. Visual Studio is a complete set of development tools that allow the creation of various types of applications including desktop and mobile applications. These development tools are all exposed through the Visual Studio Integrated Development Environment (IDE) and are designed to work together seamlessly.

3.5. The programing Languages

As ASP.NET is part of the .NET framework and shares its core functionality, any Common Language Runtime (CLR) compatible language can be used to develop the prototype. These languages include C#, Visual Basic .NET, Python for Microsoft .NET and Visual C++. In order to determine which CLR compatible programming language is most suitable, research has been conducted with specific criteria. The criteria were made while considering the assessment deliverables and personal objectives. The criteria were used for the purpose of judgment and included the following conditions:

1. The chosen programming language should be industry practised.
2. As the assessment has a tight schedule, unfamiliar industry practised languages that could consume a long time to acquire will be excluded for time constraints.
3. The chosen programming language should allow for an enhancement in current skills.

According to the TIOBE index, 2017, which is calculated through the use of the 25 highest ranked search engines, C++, C#, Python and Visual Basic .NET are among the top ten most used

programming languages, as they occupied the third to the sixth places respectively; meeting the first criteria condition.

Based on condition two, Visual C++ and Python were excluded as no experience has been gained in developing in any of the two languages and are assumed to consume a long time to acquire.

This directs the choice towards C# and Visual Basic .NET, which are both designed by Microsoft and are the two primary languages used for developing Web applications on the .NET framework. An evaluation of the two languages is illustrated below.

3.5.1. C# and Visual Basic .NET (VB.NET)

Although the two languages' syntax is different, that is where the differences mostly end. Both languages allow rapid building of type-safe and object-oriented applications. Because they are fully integrated with the .NET framework and the Common Language Runtime, they are provided with language interoperability, improved security and versioning support. Applications written in either language can usually be converted to the other by running them through syntax converters.

According to MSDN, both languages are comparatively simple and easy to learn. However, C# has the advantages of being more practised in industry, can be a first step for learning other languages such as C++ and C as it was designed based on them, and experience in developing C# applications has been gained in previous university modules. Choosing C#, therefore, allows for faster development and further enhances current skills, which meet the third criteria condition.

3.5.2. Hyper Text Markup Language (HTML)

HTML is the standard markup language for creating Web pages. It contains tags that allow structuring the content and is used along with the Cascading Style Sheet (CSS) language.

3.5.3. Cascading Style Sheets (CSS)

CSS is a style sheet language that describes the presentation of Web pages' markup. It allows separating the style of the markup into a separate stylesheet, providing flexibility for future maintenance.

3.5.4. JavaScript

JavaScript is a prototype-based, client-side scripting language. It is an object-oriented language that uses objects that run in the client: "the browser". It is used to create interactive effects within the client and was used during the implementation of the prototype.

4. The assignment executement

To execute the web application please follow the following instructions

Prerequisites:

- Ms Visual Studio (VS) 2015 and above.
- Web browser (Chrome is preferred)
- Internet connection (To view movie trailers)

Open the website in VS by clicking on: open website>Locate the website file>open.

Right click on ‘Login.aspx’>view in browser

Insert the following login credentials:

Username: Lojeen

Password: test@1234

Then navigate through the application.

These instructions are also provided in ‘README’ file included in this submission.