COM673 –Assignment 2019

Start Date: Friday 28th June 2019

Due Date: Monday 12th August 2019

*Read all the instructions below and all the questions before attempting the solution*

**Instructions**

* **This is an individual assignment.**
* Submission is via GitHub Classroom, by the deadline.
* You should make use of make use of course materials and other online resources. These should be referenced in code comments.
* Include your name and student number in the readme file as well as any instructions, passwords, etc.
* The course notes, lab guides, etc. are available at <https://github.com/COM673>

**Problem Description**

Design and build a web application to keep track of links to online resources. Links should be organised by topic, for example:

* Cloud technologies
* Java Development
* Database
* Movies
* Books
* Etc.

Each Link should include the following details:

* Date link was recorded
* Name
* Topic
* Description
* Link URL
* Notes

The application should be developed using **Java** and **Spring Boot** and deployed as an **Azure Web App**.

An **Azure SQL DB** should be used to store the required data in two tables, **Topic** and **Link**. A Topic may contain **0 to Many** Links.

* The web application should present the topics as a list of links. When a Topic is followed (clicked or touched), the Links for that Topic should be displayed including details such as name and description.
  + The link URL should be clickable
* Include the ability to add, edit, and delete both links and topics
  + Links can be added to an existing topic
  + If a topic contains links, then it should not be deleted.
* Provide a keyword search feature to find links by their name and description.
* Format and layout the web app pages using Bootstrap CSS.

**Azure Setup**

1. Create a free tier Azure web app in your student account configured for Java and Tomcat
   1. Use the following name format for the Azure web app **b01234567-assignment19**, replacing the red example id with your real student id.
   2. Create a new App Service Plan for your web app with a name based on your id, e.g. **B01234567- assignment19** in North Europe on the Free pricing tier
2. Create an Azure SLQ database, again named using our id, e.g. **B01234567- assignment19**.
   1. Setup the database with the required tables and add some sample data.
   2. Add a limited access user account for the web app

**Development Environment Setup**

Make sure that the following are installed on your PC before starting:

* **Java SDK**, e.g.:
  + <https://www.oracle.com/technetwork/java/javase/downloads/jdk12-downloads-5295953.html>
* **Git**, e.g:
  + <https://git-scm.com/>
* **Maven**
  + <http://maven.apache.org/>
* **Visual Studio Code**
  + <https://code.visualstudio.com/>

These tools can be installed individually or via a package manager such as Chocolatey. For more information see <https://github.com/COM673/tools>

**GitHub**

The assignment must be submitted via GitHub classroom. Use the following link to register and obtain your submission repository:

[**https://classroom.github.com/a/oNGkLNMX**](https://classroom.github.com/a/oNGkLNMX)

Use the submission repository from the start and commit your code regularly to minimise the chance of data loss. Marks will be awarded for use of GitHub – e.g. evidence of regular commits over time rather than a single submission at the end.

**Marking Scheme**

1. Create a new Azure Web, App Service Plan, and SQL Database for your web app in North Europe on the Free pricing tier. Configure the app for Java and Tomcat **(10 marks)**
2. Use of GitHub throughout the assignment **(15 marks)**
3. Create a Spring Boot app (using <https://start.spring.io/> )with the following features:
   1. Uses the groupID: **ie.ulster.exam**
   2. Add a readme file in the root with your student/ exam id and any instructions.
   3. Connects to and loads the data from the Azure database **(5 marks)**
   4. Converts the data from a resultset to a list of objects **(10 marks)**
   5. Create appropriate web pages including implementation of required functionality **(20 marks)**
   6. Appropriate page layout and Bootstrap 4 CSS styling **(10 marks)**
   7. Search function **(10 marks)**
   8. Neatness, bracket formatting, code quality, meaningful comments and readability **(10 marks)**
4. Deploy the app on Azure (you can use FTP or any other way to upload the .war file) **(10 marks)**
   1. **Include instructions for how to access the site (i.e. the URL) in the readme file**