CTU training solutions

CAREER SUCCESS STARTS AT CTU

CTU training solutions

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<table>
<tr><td colspan="10">Faculty of Information Technology</td></tr>
<tr><td rowspan="5">I declare that I am familiar with, and will abide to the Examination rules of CTU

_____
Signature</td><td colspan="9">SUBJECT NAME: ADVANCED PROGRAMMING
SUBJECT CODE: PRG522</td></tr>
<tr><td colspan="4">Summative Assessment
Duration:
Date: -
Total Marks: 150
Total pages: 5</td><td colspan="5">Examiner: Mr. Isaac L
Moderator: Mr. Paulo N</td></tr>
<tr><td colspan="9">Student number</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="4">Surname:</td><td colspan="3">Initials:</td><td>/</td><td>%</td></tr>
</table>

Instructions:

- Recall to keep a copy of all submitted assignments.
- All work must be typed using Microsoft Word and convert the word document to PDF before uploading to COLCampus.
- Kindly note that you will be evaluated on your writing skills in all your assignments.
- Negative marking will be applied if you are found guilty of plagiarism, poor writing skills or if you have applied incorrect or insufficient referencing.
- Each assignment must include a cover page, table of contents and full bibliography, based on Harvard referencing style.
- Students are not allowed to offer their work for sale or to purchase the work of other students. This includes the use of professional assignment writers. If this should happen, CTU training Solutions reserves the right not to accept future submissions from a student.
- Spelling, style, fonts, font size, line spacing
    - Please copy the questions onto your answer sheet (single space the questions), and make sure to use numbers to indicate the answers to each question.
    - Always use a spell checker before you submit assignments! We reserve the right to deduct point for each obvious misspelling.
    - Always double-space your answers.
    - Please use Arial (or Calibri (Body)), 12 point as the font for your assignments. Certain fonts have been known not to come across in the PDF files.
    - Use only black or blue font face colors. Do not use red!

Question 1 — 50 MARKS

Scenario Requirements

- You must use MS Visual Studio 2017/2019 with ASP.NET MVC5, Azure DevOps and Azure. You must use Bootstrap CSS to set the presentation aspects of the web application.
- Your personal details must be displayed in the footer of all pages.
- A video displaying how the program is running, the project file, PDF containing coding and screenshots must be uploaded.
- You must use Azure DevOps Repository
- The webpage should be deployed to Azure.

Background Information:

You are a software developer at a large software company that uses Microsoft Cloud Solutions for deploying and maintaining web applications. The manager has assigned you to use an open source software (OSS) to develop an ASP.NET MVC5 web application. You are required to adapt front-ended files from a given open source static web application into your ASP.NET application and add back-ended functionalities (stated below). Adapt the OSS MIT License to suit the needs of your company, the new license must be restrictive. You have to push your web application files into Azure DevOps Repo using Git and configure your pipelines to deploy your files into an Azure App Service.

About the Open Source Software

Bizwheel is a modern and trend business html5 and CSS3 website template for 2020. You can use Bizwheel html template for your any kind of business, consulting, digital agency, company, studio, startup, portfolio, blog and multipurpose creative websites purpose. The files for this open source software have been PROVIDED to you along with the current MIT License.

Use this link to see the final product: https://prg522sa2021.azurewebsites.net/

What is provided

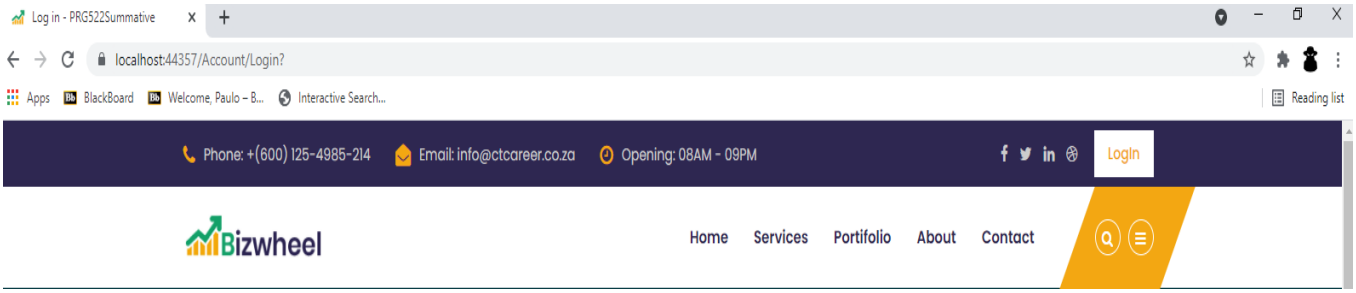
- Bizwheel open source static web application.
- ASP.NET MVC5 Login and Register cshtml file. You may copy the content of these files as it is into your own application.
- Open Source Software MIT License.

What you still need to do

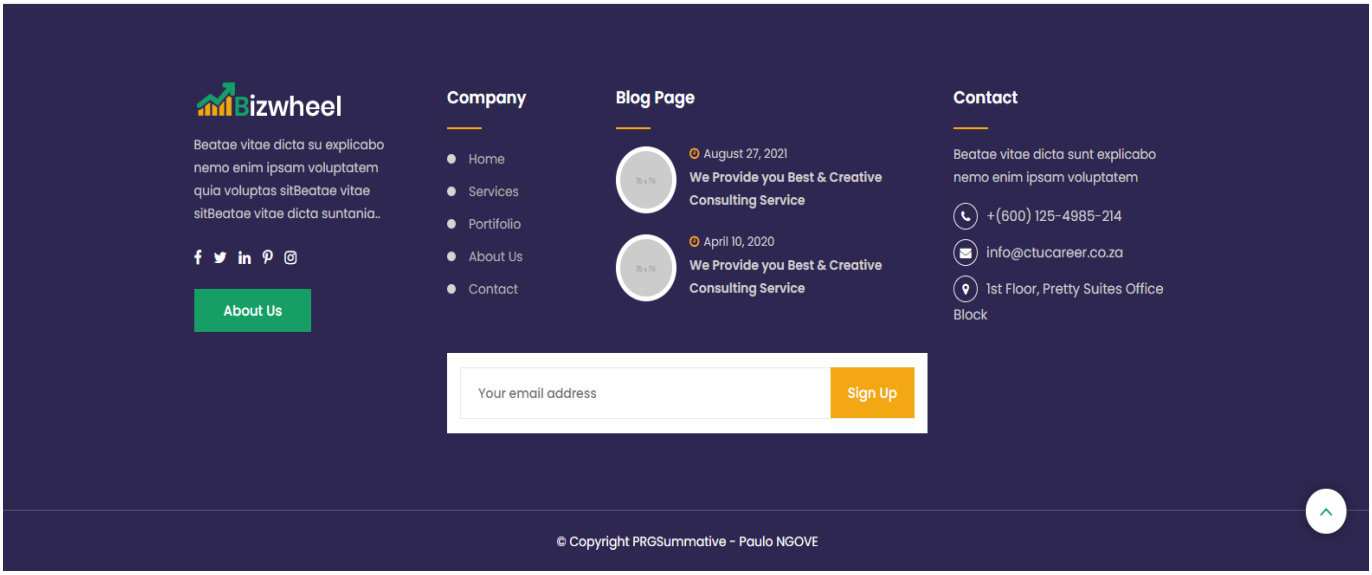
Front-end Development

Modify your ASP.NET MVC application to make it look like the provided Bizwheel web application.

- **_Layout.cshtml**
  - Add all the necessary links to ensure your application uses the open source software CSS and JavaScript files.
  - Modify the **navigation bar** to look the same as from the open source software.

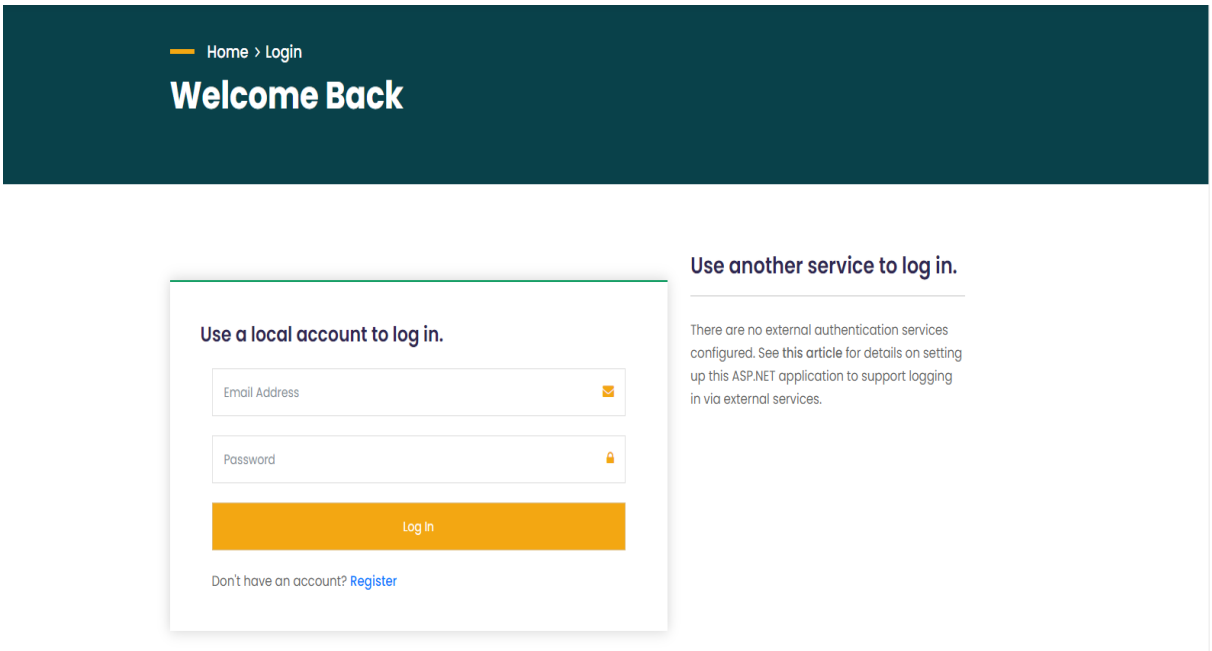


  - Modify the **footer** to look the same as from the open source software.

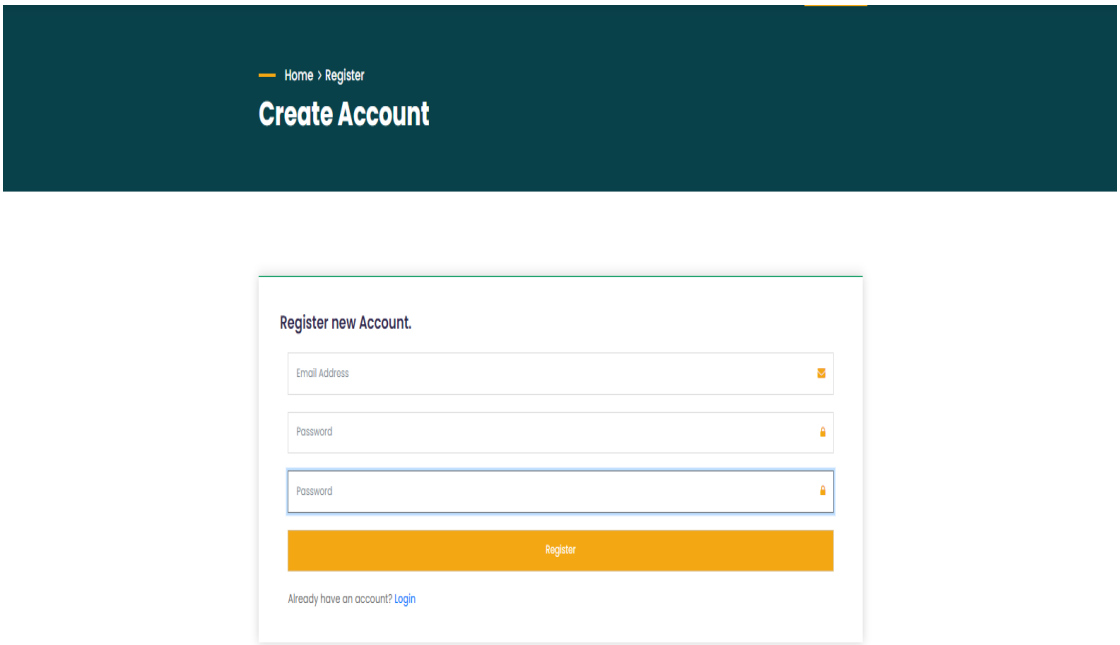


- **Edit and create the following pages**
    - Home page
    - Services page
    - Portfolio page
    - About page
    - Contact page

  You may browse through the open source file to see how each page should look like. See also: https://prg522sa2021.azurewebsites.net/
- **Login and Register**
    - Adapt the provided login and register cshtml pages into your application.
    - Refer to: https://prg522sa2021.azurewebsites.net/Account/Login?



- Login page
- Register page



Back-ended Development

- **Authentication**
  - Ensure that users are able to register a new account and login into existing account.
  - Ensure that **Portfolio page** is accessible only to **authorized** users.

Azure DevOps – set up

- Create a new organization and name it "**PRG522Summative**".
- Create a public project and name it "**ICAS-PRG522SA**" (replace ICAS with your ICAS e.g. **0001-PRG522SA**).
- Set the description of your project to be: "Working with an open source software, azure DevOps and Azure portal. PRG522 summative 2021".
- Create a team and name it "**Facilitating Team**".
  - Add the following members:
    - FaithM@ctucareer.co.za
    - LeratoP@ctucareer.co.za
    - PauloN@ctucareer.co.za
  - **Deny** the following Permissions to this team:

        - Delete team project
        - Edit project-level information
        - Manage project properties
        - Rename team project
- Provide all necessary screenshots.

Git

- Use the Git Bash to push your web application into DevOps Repo.
- Provide screenshots that the files exist within your Repository.

Azure Portal

- Create an SQL database.
- Create a new App Service.
    - Enable Application insight for your app service.
    - Add application setting to connect your app service to the SQL database created earlier.
    - Enable continuous deployment and select the appropriate source.
    - Provide all necessary screenshots

Azure DevOps – Configuration

- Create a build pipeline from a template of your choice and capture at most 4 steps of the build process. (Connect, Select, Configure, Review)
- Create a release pipeline for development stage and production stage, configure your pipelines to use the app service created on Azure for deployment.
- Create a Wiki page, set the title to be "License", add restrictive license content to your page. Publish the Wiki page as code.
- Provide all necessary screenshots.

Your application must be running on the azure app service at this point, make a 5 minutes video showcasing the functionality of your web app. You may use any screen recording software.

Azure Portal

- Application Insights
    - Access the application insight service created along with the app service.
    - Create a new alert to monitor failed requests.
        - Set the threshold to 1.

- Create an application Dashboard with using your application insight.
- Provide all necessary screenshots.

Rubric:

Content:	**Full Marks:**	**Attempted but not correct:**	**Not attempted:**
1. Open source software adapted to the application correctly.	40	15	0
2. Fully functional navigation bar that displays links and information based on the authorization level of the user.	10	5	0
3. Fully functional login, register and logout, only authorized users may access the Portfolio page	15	7	0
4. Application files pushed to Azure DevOps Repos	10	5	0
5. Azure DevOps organization, project and Facilitating team set up correct, all necessary permissions denied.	10	5	0
6. Azure SQL Database Created correctly	5	2	0
7. App service created correctly, database connection added.	15	7	0
8. Application Insights enabled	5	0	0
9. DevOps Wiki page created and published as code	5	2	0
10. Build and Release pipelines configured correctly	15	4	0
11. The Web application running on the cloud.	5	2	0
12. Application Insight Dashboard and alerts configured	5	2	0
13. Include a 5 minutes video where you demonstrate how the program is working. Use any screen recording app to record the video	5	0	0

14. A pdf document with all the code and interface screenshots	5	0	0
Total Marks:	**150**		

Completed Declaration of Authenticity

I _____ hereby
(FULL NAME)

declare that the contents of this assignment _____ is entirely my own work except for the following documents: (List the documents and page numbers of work in this portfolio that were generated in a group)

Activity	Date

Signature: _____ Date: _____