Unit:
Dynamic Websites

Assignment title:
Autonomous Vehicles

Spring – Winter 2021

Important notes

- Please refer to the *Assignment Presentation Requirements* for advice on how to set out your assignment. These can be found on the NCC Education website. Click on 'Policies & Advice' on the main menu and then click on 'Student Support'.

- You must read the NCC Education Documents *What is Academic Misconduct? Guidance for Candidates* and *Avoiding Plagiarism and Collusion: Guidance for Candidates* and ensure that you acknowledge all the sources that you use in your work. These documents are available on the NCC Education website. Click on 'Policies & Advice' on the main menu and then click on 'Student Support'.

- You **must** complete the *Statement and Confirmation of Own Work*. The form is available on the NCC Education website. Click on 'Policies & Advice' on the main menu and then click on 'Student Support'.

- Please make a note of the recommended word count. You could lose marks if you write 10% more or less than this.

- You must submit a paper copy and digital copy (on disk or similarly acceptable medium). Media containing viruses, or media that cannot be run directly, will result in a fail grade being awarded for this assessment.

- All electronic media will be checked for plagiarism.

Introduction

Autonomous Vehicles are gaining in popularity. You have been asked to create a website that provides information about autonomous vehicles, including about the Artificial Intelligence (AI) technology that is used to develop these vehicles.

A company called "Driverless" are looking for you to create a dynamic website which should include content that changes as the requirements of the user change, e.g. real-time banners. The website should offer a fluid layout and should be responsive to reading and navigation on different devices. It should include animation and interaction when accessing product recommendation displays.

A database will need to be created to allow interested users to create their own personal account. The system will store personal details of each user e.g. their full name, their email address, their date of birth, and their postal address including postcode. Users need to create their own account to log into the system via a registration script. Once they log in, they should be presented with an interface that allows them to:

- View their account
- Update their information
- Change their password

You are expected to use a combination of PHP, MySQL **and** JavaScript to create this application.

A web-enabled application needs to be created to allow users to create, query, browse and manipulate the database and allow the user to create and edit their own records.

The website should include search engine optimisation and include a responsive landing page (which includes compelling headline, eye-catching images and at least two media links to relevant autonomous vehicle newsfeeds). It should also include countdown timers to relevant promotions and personalised content. These should be appropriately included on the one landing page.

Task 1 – 32 Marks

Create a landing page for the Autonomous Vehicle website which includes the following elements:

- Responsive/adaptive pages based on user needs
- Compelling caption against a clean colourful backdrop
- Eye-catching images
- Scroll-triggered animations
- Automatically loading dynamic content e.g. real-time banners
- Responsive layout
- Animated/interactive social media buttons or navigation buttons
- Animation and interaction when accessing product recommendation displays
- TWO (2) media links to relevant autonomous vehicle newsfeeds
- Mobile accessible website on phone/tablet
- Suitable use of at least two different web services
- Countdown timer with personalised messaging based on event

Task 2 – 18 Marks

- Create the login **and** registration system (if the username is not recognised using a register link). This should include username **and** password **and** store personal details of each customer including their full name, their email address, their date of birth and postal address including postcode.
- On first time registration, it should check that the username and the password provided are not in use.
- On login, it should check that the password provided against the stored password for the username given.
- To gain the highest marks for this task you should make the system as robust as possible.
- It should limit the user to THREE (3) attempts at a login. If this fails, then lock the account for TEN (10) minutes.

Task 3 – 10 Marks

Once the users have logged on, they should have access to their account.

- Create an online "*contact us*" form where customers can ask questions.
- When the user submits the form, it should provide "set" FAQ answers back to the customer before a final submission of the form is permitted, displaying the FAQ page before the customer can submit the form.
- Add a suitable call to action button asking the user to sign up for the newsletter.

Task 4 – 30 Marks

You are required to write a **1,000 word critical reflection**, analysing the website you have created and answering the following elements:

- An evaluation as to how appropriate at least TWO (2) of the web development tools you have used in this website have been to meet the given scenario for the "Driverless" company.
- An explanation and justification of at least TWO (2) different web services that can be used within the Driverless company website development.
- An appraisal of at least TWO (2) benefits to the "Driverless" company of using these web services.
- Evaluation as to the effectiveness of at least TWO (2) different web services you have used in the Autonomous Vehicle website.

Task 5 – 10 Marks

You are required to write a **500 word reflection** on this activity. Answer the following questions:

1. What have you learnt?
2. How could the system be improved or further developed to become a fully mobile website?
3. Which parts of the development did you find most difficult and why?
4. Why have you chosen responsive over adaptive layout or adaptive layout over responsive and what are the advantages/disadvantages of these different approaches?
5. How did you overcome any difficulties? If you had no difficulties explain why not.

Submission requirements

- For each task, you should present the necessary code and screen dumps in a word-processed document.
- All references and citations must use the Harvard Style.

Candidate checklist

Please use the following checklist to ensure that your work is ready for submission.

Have you read the NCC Education Documents *What is Academic Misconduct? Guidance for Candidates* and *Avoiding Plagiarism and Collusion: Guidance for Candidates* and ensured that you have acknowledged all the sources that you have used in your work?	❑
Have you completed the *Statement and Confirmation of Own Work* form and attached it to your assignment? **You must do this.**	❑
Have you ensured that your work has not gone over or under the recommended word count by more than 10%?	❑
Have you ensured that your work does not contain viruses and can be run directly?	❑