University of Sunderland

Program - BSc (Hons) Computer Systems Engineering (BSc.IT)

NAME: Aarjan Paudel

STUDENT NUMBER: 240703679

MODULE CODE: CET138

MODULE TITLE: Full Stack Development

MODULE LEADER: David Grey

SUBMISSION DATE AND TIME: As stated in the assignment submission page on Canvas for this module

ASSIGNMENT: First Assignment

Academic Misconduct is an offence under university regulations, and this involves:

- **Plagiarism** – where you use information from another information source (including your previously submitted work) and pass it off as your own. This can be through direct copying, poor paraphrasing and/or absence of citations.
- **Collusion** – where you work too closely, intentionally, or unintentionally, with others to produce work that is similar in nature. This can be through loaning of materials, drafts or through unauthorised use of a fellow student's work.
- **Asking another person to write your assignment** – where you ask another individual or company to complete your work for you, be that paid or unpaid, and submit it as if it were your own.
- **Unauthorised use of artificial intelligence** – where you use artificial intelligence tools to generate your assignment instead of completing it yourself and/or where you have not been given permission to use artificial intelligence tools by your module leader. Please complete the following declaration around you use of artificial intelligence tools in your assignment.

STATEMENT ON USE OF ARTIFICIAL INTELLIGENCE TOOLS:

• I have used artificial intelligence tools to generate an idea for my assignment:	**NO**
• I have used artificial intelligence tools to write my assignment for me:	**NO**
• I have used artificial intelligence tools to brainstorm ideas for my assignment:	**NO**
• I have used artificial intelligence tools to correct my original assignment:	**NO**

DECLARATION

- I understand that by submitting this piece of work I am declaring it to be my own work and in compliance with the university regulations on Academic Integrity.
- I confirm that I have done this work myself without external support or inappropriate use of resources.
- I understand that I am only permitted to use artificial intelligence tools in line with guidance provided by my Module Leader, and I have not used artificial intelligence tools outside this remit.
- I confirm that this piece of work has not been submitted for any other assignment at this or another institution prior to this point in time.
- I can confirm that all sources of information, including quotations, have been acknowledged by citing the source in the text, along with producing a full list of the sources used at the end of the assignment.
- I understand that academic misconduct is an offence and can result in formal disciplinary proceedings.
- I understand that by submitting this assignment, I declare myself fit to be able to complete the assignment and I accept the outcome of the assessment as valid and appropriate.

ANY OTHER COMMENTS FROM STUDENT:

Full Stack Development

1. What is Full Stack Development?

Full Stack Development - Building and maintaining both the front end (client side) and back end (server side) parts of a web application. A full-stack developer can work on:

- **Front-End (Client Side): -** It is the interactive part of an application created by using the technologies like HTML, CSS, Bootstrap and JavaScript.

- **Back-End (Server Side):** The side of the application that deals with data manipulation and logic, often done in languages and frameworks like Node.js, Python, Java, PHP, Express.js and databases including MySQL or MongoDB.

A full stack developer can do both, which is a precious resource for companies because: They can work on full stack without having to hire specialists.

Sample Implementation: While this it's purely theoretical, my portfolio website is an example of full stack concept itself:

- **Front-End**: Developed using HTML, CSS, Bootstrap, JavaScript.
- **Back-end / Hosting**: Hosted at GitHub Pages, simulates deployment.
- **Application Behaviour**: JavaScript is employed to create reactivity (Calculator, To-Do List).

How It Works:

1. The layout of web pages is described in HTML.
2. CSS and Bootstrap are used for the layout and responsive design.
3. JavaScript provides interactivity (form validation, calculator, to-do list).
4. The app is deployed live on the internet through GitHub pages to mimic full stack projects.

Full-stack Web Development Imaging: