THE UNIVERSITY OF WINNIPEG

Applied Computer Science
ACS-3909-002
Advanced Internet Programming

Winter 2024

Assignment 2

Due date: March 8, 2024, 11:59 pm (CST) **Total Marks: 25**

Objectives

Get a better understanding of advanced servers using Node.js and Express. You will develop a server capable of handling various web pages using express, handlebars, and endpoints. Additionally, you will create a small website using partials. Opting for a single web page offers numerous advantages, including simplicity and mobile-friendly navigation. In this assignment, you will have the opportunity to create a single web page and specify the desired background colour by reading a request parameter from the URL.

1) **(10 marks)** Use Express and Handlebars to create a website that takes users on a virtual tour of the history of the Internet. You will be given a CSS stylesheet and a JSON file containing Internet history information. The requirements are as follows:
   a) The user should begin at the "The-Birth" homepage, which represents the birth of the Internet in 1969.
   b) Create separate pages for each significant milestone in Internet development, including:
      - The-Birth
      - The-First-Website
      - The-Birth-of-at-Sign
      - Welcome-to-the-Wired-World
      - Dot-Com-Boom
      - Web-2.0
      - Cloud-Computing-Takes-off
      - Today

      Each page should feature an image relevant to the corresponding milestone.
   c) At each milestone, the "Next" button should direct the user to a new page providing information about the next era of the Internet. The "Next" button on the last milestone should return the user to the first milestone (i.e., The-Birth).

   A total of 10 marks will be awarded as follows: 2 marks each for a and c, and 4 marks for b.

2) **(5 marks)** Build a compact web application consisting of four pages: Home, Lectures, Grades, and Contact. Incorporate a consistent navigation bar at the top of each page, facilitating easy access to all the sections. This navigation should be implemented utilizing the concept of partials for efficient reuse.

   Up to 5 marks will be awarded for a web application that successfully implements the specified features.

3) **(10 marks)** Develop a single-page web application that dynamically alters the page's background colour based on a request parameter (or query string parameter) included in the URL. Acceptable parameters include colour names such as "magenta" or "yellow." If the

parameter is absent or unspecified, default the background to white. Additionally, if the parameter is set to "random," the application should select and apply a random colour for the background.

2 marks are awarded for creating a web application that serves a single page, 5 marks are awarded for correctly adding functionality to change the background colour, and 3 marks are awarded for the random feature.

Submission Instructions

Zip all files and folders into a single archive named *StudentNumber_Assignment2.zip*. Submit the zip file through Nexus. Do **not** include your node_modules folders.