United International University

Department of CSE
CSE 465: Web Programming
Final Examination, Fall 2021

Time: 2 Hour **Full Marks: 30**

[Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules.]

Answer all the questions. Assume any data if it is not mentioned explicitly.

1. a) What are the possible ways you can utilize the Chrome Dev tools for optimizing the critical rendering path of your website? Differentiate between the regular and the async script. 5+5

   b) Explain micro-service architecture with appropriate figure. When would you prefer micro-services to the client-server model in developing your website? Support your argument.

2. During the COVID-19 pandemic, a large number of people have lost their jobs and became needy. You are planning to create a website for helping them. Using your website, we can keep track of the individual cases/projects for helping needy people – specifically their name (considered as project name), present address, contact number, target amount (in taka) of donation, total received donation amount till now, number of person in their family, and current status of the project (either target completed, or still open for donation). We would also want to include the start and end date of a particular project. The website will have a donation portal, where anyone would be able to contribute to a project by mentioning the project id, donation amount, their own name, phone number, and corresponding bKash transaction number. For this, you have created a Django app called covidhelp. 5+5+5+5

   a) Based on this scenario, create two Django models: one for holding the individual project/case information (named **Project)**; and another for keeping records of the contributions (named **Donation)**. Project ID in **Donation** table is the primary key from **Project** table. Write only the model class and their corresponding fields in your script.

   b) Create an HTML with a <form> tag such that an individual can submit donation information by entering the data mentioned above. It should submit the data in url '/donate' via POST method. Write only the HTML form code in your script. You cannot use Django forms for this.

   c) Create a view function that will either render the html file containing the form (assume that the name of the template is *donate.html*) or receive the submitted data.

      If data is being submitted-

      - Save the data in **Donation** model.
      - Update the total received donation amount in corresponding **Project** table entry.
      - Send an Http Response saying, "Thank you for your donation! Target of **X** taka remaining for project **Y**";

        where-

        X = target amount – total collected amount for the project,

        Y = name of the project

      Only write the view function on the script. You cannot use class-based view.

   d) Create a view function for an endpoint API in the Django server that returns the list of projects that are still open for donation.