

Independent University, Bangladesh
CSE213/CSC305: Object Oriented Programming – I
Final Exam; Sections – ALL; Autumn – 2021

Total Marks: 100; Duration: 2.5 hours for the ENTIRE Exam

- This PDF contains Question-1 (for 55 marks) only.
- Second PDF containing Question-2 & 3 (for remaining 45 marks) will be added after half-time from the commencement of your exam.

Write the following at the top of the first page of your script (mandatory):

- **ID:** 1234567
- **Name:** Abcd Efg
- **CSE213 Final exam, Autumn 2020, Section:** yourSsecNo
- **Project Title:** your project title

Without above information on the top page, your script will not be graded.

To-be-uploaded file name must be: "CSE213_Final_yourSecNo_yourID.pdf". Ex: CSE213_Final_4_1234567.pdf

Before uploading your scanned answer script, open the file using a PDF reader and make sure that the file is not corrupt and the pages are NOT Blur.

1) Answer the following: **[55 marks]**

- a) **Write a goal** for one of your users of your project who needs to generate a report where the report data will be loaded on a table. You need to explain: a) the user inputs (needed to be used as filters) to process the database and to generate the report and b) what will be the content of the generated report. To get any mark, the goal must make sense within the context of your project. **[5 marks]**

For example, in IRAS, a Faculty user wants to see the percentage of students who got a specific grade in different sections of a Course. In that case the course ID, grade, semester and year will be user input (combo boxes), and the report scene will show the report data in a table. Columns of the table will be sec no and %-of-students got that specific grade. Number of rows of the table will be the number of sections offered for the filter data (selected course id, semester and year).

- b) **Write a detailed workflow** for the above goal described in question 1.a. **[10 marks]**
- c) Also, since this report-generation-goal processes pre-existing data from the database to get the report content, then it is obvious that these data were previously stored in the database from another workflow. Therefore **write the goal and detailed workflow for that data-writing goal too** **[10 marks]**

At this point, assume that in your controller class there is a button to generate the report and the corresponding event handler method name is generateReportButtonOnClick(). The **generateReportButtonOnClick()** handler method will call a User class method (model class method) named **generateAndReturnReportData()** to obtain necessary data from database (files) as the report content and after receiving the data from the model class method, the handler method will update the view on the scene (populating table).

- d) Now, **write the FULL definition** of controller class including ALL necessary fields (fxids) and generateReportButtonOnClick() method. You may avoid writing import statements. **[15 marks]**
- e) Also **write FULL definition** of relevant UserClass (model class) for the report including ALL necessary fields and generateAndReturnReportData() method. You may avoid writing import statements. **[15 marks]**

You will **NOT GET / LOOSE MARK** for question-1:

- If the User is not relevant to your project
- If the report description is not relevant for the user
- If the workflow for generating the report using user input is not logical
- If the report output is not generated from database (files) by the model-class method
- If the scene is not updated by the handler method with received report content from model class method