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| Academic Year | 2023 | | |
| Semester | Fall | Winter | Summer |
| Course Code - Name | BAN110 | | |
| Instructor | Dr. Razi Iqbal | | |
| Assessment | Projects |  | |

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| --- | --- | --- |
| **Student ID** | **Student Name** | **Role** |
|  |  | Group Lead |
|  |  | Member |
|  |  | Member |
|  |  | Member |
|  |  | Member |

**Projects**

You are required to choose a project from the list of the projects specified in this document and complete it within groups of max. 5.

Since, this is a group project, it is required to be done in groups of maximum 5. In exceptional cases, there can be 1 member in a group. Each group should have a Group Lead who would be responsible for submitting the project on Blackboard (Please note that not all the members of the group are required to submit the project separately on Blackboard. One submission from the Group Lead would be sufficient).

The detailed requirements for each project are available in this document, so please go through the details and fulfil all the requirements to avoid missing any marks.

Finally, follow the below mentioned instructions carefully.

**Instructions:**

In order to obtain maximum marks in this assessment, please ensure the followings:

* Don’t forget to write your name and ID on the first page of this document. The student IDs and names of all the students in the group should be mentioned along with the roles.
* Submit the project by writing your solution in this document under the Solution heading below. Do not use a separate document. Everything related to the project should be included in this document, e.g., code, screenshots and etc.
* This project has a weightage of **25%** marks of the course.
* This is a group project so **only 1 submission from the group lead is required.**
* Group Leads are required to submit the project on Blackboard as instructed. Submissions through emails will not be accepted.
* The project deadline is **midnight April 9, 2023**. Submissions after the deadline will not be accepted.
* A separate session for presentation and QA for the project will be scheduled.

**Rubric:**

Your assessment will be graded based on the following rubric:

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| --- | --- | --- | --- |
|  | **Excellent (7 - 10)** | **Average (4 – 6.9)** | **Poor (<4)** |
| **Project Completion and Code**  **(10)** | The project was completed without any errors and output is as expected. Fulfills all/most of the requirements for the project. | The project was completed with few errors. Fulfills some of the requirements for the project. | The project is incomplete. Does not fulfill all/most of the requirements. |
| **Presentation and QA**  **(10)** | The student has a good contribution to the project. Knows ins and outs of the project.  The student has presented his/her part of the project very well. Knows everything / most of his/her part. | The student has average contribution to the project. Does not know the whole project.  The student has averagely presented his/her part of the project. Knows few of the things about his/her part. | The student has no contribution to the project. Does not know anything / most about the project.  The student has poorly presented the project. Does not know much about the project. |
| **Report**  **(5)** | Student has contributed well in preparing the project report and knows all the aspects of the report. | Student has contributed partially in preparing the project report and knows some aspects of the report. | Student has not contributed in preparing the report. |

**Project Instructions**

You are provided with few datasets on Blackboard under Project Datasets Folder. You are free to pick any dataset you like to work on as a group. You are required to demonstrate at least the following skills in the project:

1. Data Import
   * This phase requires you to import the data from the provided excel file into SAS using Proc Import.
2. Data Cleaning
   * This phase requires you to clean your data before data analysis phase. You should use at least following concepts to complete this phase:
     1. Extract relevant data from the original dataset
     2. Convert a numeric column to character column or vice versa
     3. Create a new column based on existing columns and use it in your analysis
     4. Identify missing values and remove / replace using an appropriate technique
     5. Use built-in SAS function(s) to perform data cleaning, e.g., extracting year from the data column etc.
     6. Identify outliers and deal with them in an appropriate manner
3. Joining and Merging
   * This phase requires you to join / merge your datasets to create a dataset for analysis.
     1. Merge / Join your existing dataset with another dataset. If your Excel file has only 1 sheet, find some data over the Internet that you can merge your existing dataset with.
     2. Make sure the merge in Step 1 is meaningful
     3. Use this merge in your data analysis
4. Data Analysis
   * This phase requires you to analyze your cleaned dataset to answer at least 3 valid business questions. You are free to pick any business questions you like, however, please keep in mind that picking good business questions to answer would result in better marks.
5. Project Report
   * This phase requires you to create a report in MS Word with the following requirements:
     1. Explain each and every phase of the project (from Phase 1 to 4) along with the screenshots of the output and the related SAS code
     2. Include answers to questions in Phase 4 in your report
     3. Create at least 1 graph / chart in your report which can be simply a Box plot to identify outliers etc.
     4. Make sure not to miss any phase and output of its screenshot