**Functional Requirements:**

1. The system shall allow a user to add a Student Grade record to database.
   1. The system shall display a main menu to the user.
   2. The user shall select “Add Record” button to add a new record.
   3. The system shall display a New Grade Record form to the customer.
   4. The user shall fill the form.
      1. The user shall enter student id, course prefix, course number, grade, year and semester.
      2. The user shall click “Submit” button after entering the data.
      3. The system shall check if any of the data is missing.
         1. If any of the data is missing, the system shall display a message to the user and repeat Step 1.4.
         2. If all the data are correct, the system shall continue.
   5. The system shall verify if the record is already in the database.
      1. The system shall try to retrieve a record with the data except for “Grade.”
         1. If a record is retrieved, the system shall display an error message to the user, and check if the user wishes to update the record.
            1. If the user wishes to update the record, the existing record will be updated. (Refer to R2)
            2. If the user wishes not to go further, the system shall display a message to the user and return to main menu.
         2. If no record is retrieved, the system shall continue.
   6. The system shall add the new record to the database.
   7. The system shall recalculate the overall GPA for the student.
   8. The system shall update the overall GPA in the database for the student.
   9. The system shall display a message and return to main menu.
2. The system shall allow a user to edit a Student Grade record in the database.
   1. The system shall display a main menu to the user.
   2. The user shall select “Display Existing Grades”
   3. The system shall display a list of existing entries in the database.
   4. The user shall select the entry that they wish to edit.
   5. The system shall display the following options:
      1. The system shall display an “Edit” Button.
      2. The system shall display a “Delete” Button.
   6. The user shall select the “Edit” Button.
   7. The system shall display an Edit Grade Record form.
      1. The system shall prepopulate each field for student id, course prefix, course number, grade, year, and semester.
      2. The user shall edit any necessary fields for their correction.
      3. The user shall click “Submit” button after changing their entry.
      4. The system. shall check if any of the data is missing.
         1. If any of the data is missing, the system shall display an error message to the user and return to 2.7.2.
         2. If all the data is correct, the system shall continue to the next step.
   8. The system shall recalculate the overall GPA for the student.
   9. The system shall update the overall GPA in the database for the student.
   10. The system shall display a success message and return to the main menu.
3. The system shall allow a user to delete a Student Grade from the database.
   1. The system shall display a main menu to the user.
   2. The user shall select “Display Existing Grades”
   3. The system shall display a list of existing entries int eh database.
   4. The user shall select the entry that they wish to delete.
   5. The system shall display the following options:
      1. The system shall display an “Edit” Button.
      2. The system shall display a “Delete” Button.
   6. The user shall select the “Delete” Button.
   7. The system shall display a message asking for confirmation and warning that the delete is permanent.
   8. The system shall delete the record from the database.
      1. If there is any error in the deletion or connection to the database, the system shall display an error message.
      2. The user shall close the error message.
      3. The system shall return to 3.5.
      4. If there was no error, the system shall continue to 3.9.
   9. The system shall recalculate the overall GPA for the student.
   10. The system shall update the overall GPA in the database for the student.
   11. The system shall display a success message and return to the main menu.
4. The system shall allow a user to print a Student Grade Record from the database.
   1. The system shall display a main menu to the user.
   2. The user shall select “Print Student Grade Record” from the main menu.
   3. The system shall display a list of students found in the database.
   4. The user shall select the student that they would like to print out.
   5. The system shall query the selected student and all associated courses.
   6. The system shall display the values in the following format:
      1. Student Name, ID, and Overall GPA on the first line
      2. Each additional line shall contain 1 course with the course prefix, number, year, semester, and grade received.
      3. The system shall display a confirmation prompt to verify the information.
         1. If the user confirms, the information shall be printed.
            1. Once printing is complete, the system shall continue to 4.7.
         2. If the user selects “Go Back” the system shall return to 4.3
   7. The system shall display a success message.
   8. The user shall close the message.
   9. The system shall return to the main menu.
5. The system shall display a main menu to the user.
   1. Upon opening, the system shall display the following options to the user:
      1. Add Record
      2. Display Existing Grades
      3. Print Student Grade Report
      4. Exit
   2. The user shall select Exit once they wish to close the application.
   3. The system shall exit.

**Non-functional Requirements:**

1. The system shall only accept excel files in the format “[Course Prefix][Number][Year][Semester]”.
   1. The columns of the excel file shall be the following:
      1. Name
      2. ID
      3. Grade
2. The system shall only check for excel files in folders that have the following naming format “Grades [Year][Semester]”.