UML DIAGRAM AND NARRATION: STUDENT INFORMATION SYSTEM

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Design

When the Student Information System was accessed, the system will pop out a login page first which required username and password from the user. If the users haven't sign up before, the user was allowed to sign up by clicking the sign up then the system will direct the user to the 'SignUp' scene. In the 'SignUp' scene, the user able to sign up by filling their username and password. Then, press the signup button to sign up. The 'SignUp Success' text will show if the user signup successfully. Then, the username and password will save into the 'UserName2' database, 'users' table. After that, the user will use the registered username and password to login. If the username and the password entered correctly, then the user able to access the system. There will be three main parts in this Student Information System which are "Student", "Course" and "Score". User able to perform a series of operations and the data entered or edited is saved into a file and stored in a database called StudentDatabase. Besides, in the menu there will be a menu item called 'HomePage' which allows the user back to the home page and log out from the system. Other than that, the "Help" helps the user to use the system.

LoginController

This class has 9 attributes and 4 methods. Alert is a label where it will show the text "Incorrect Username or password" if the user entered the username or password wrongly. There is also textfield and passwordfield to get the text from the user and then to determine the username and password match to the registered username and password or not.

In the Login operation, there will be a connection to connect with the database UserName2.db. Then, from there will select the data from the users table to match with the username and password entered by user. If it is match, then the alert label will show "Success Login" and the user will direct to the home page. The signUp method was used to direct the user to the signup scene.

SignUpControllelr

This class has 8 attributes and 3 methods. sgLabel is a label which will show "SignUp Success" if the user sign up successfully with the username which does not crash with the previous saved username.

In the userSignUp function, there will be a connection to connect with the database UserName2.db. Then, it will get text from the textfield and passwordfield for username and password and these will be insert into the users table in the UserName2.db.

AddStudentController

This class has the attributes of textfields that takes the data from the user to store in the database. This class are used to only add student. The add method are use to add the student details into the database.

To change to other menu, this class also implements the ChangeScene Interface as the interface has all the method to change to other menu which are

AddCourseController

This class has the attributes of textfields that takes the data from the user to store in the database. This class are used to only add course which will are done using the add method. From this class, user can also switch to another window by selecting the menu choice either the user wants to switch to student, course, score, help or homepage section.

To change to other menu, this class also implements the ChangeScene Interface as the interface has all the method to change to other menu which are

ManageStudentController

In this class, the admin can add a student detail and store it in the database, edit or remove the student details. In this class, user can also look at the the list of students registered , different than AddStudentclass where user can only add the student. From this class, user can also switch to another window by selecting the menu choice either the user wants to switch to student, course, score, help or homepage section.

To add, edit and remove the student details, this class uses the interface methods to do the operation as this class implements Operations interface class that has the add, edit and remove method.

To change to other menu, this class also implements the ChangeScene Interface as the interface has all the method to change to other menu.

ManageCourseController

In this class, the admin can add a course detail and store it in the database, edit or remove the course details. In this class, user can also look at the the list of course registered in UTP, different than AddCourse class where user can only add the course. From this class, user can also switch to another window by selecting the menu choice either the user wants to switch to student, course, score, help or homepage section.

To add, edit and remove the course details, this class uses the interface methods to do the operation as this class implements Operations interface class that has the add, edit and remove method.

To change to other menu, this class also implements the ChangeScene Interface as the interface has all the method to change to other menu which are

Student Class

This class has variables that contains the details of student. In this class we declare the student details attributes which are Firstname, LastName, Gender, Id, PhoneNumber and Address. we also have a constructor, set, and get method for all the attributes in this class .

Course class

This class has variables that contains the details of a Course which are Coursename, CourseCode, and CreditHour. we also have a constructor, set, and get method for all the attributes in this class .

CreateDB Class

This class is used to create the database from students and courses created by fatin. So in this class, we will have 2 method which is the createNewDatabase() t create new databaseand createNewTable() to create 2 table in the database which is the student and the courses

ChangeScene Interface

This is an interface where consists of functions which areisplayAbout, displayHomePage, sc_DisplayEdit, sc_DisplayShow, studentDisplayAdd, studentDisplayManage, courseDisplayManage, courseDisplayManage, courseDisplayAdd. The interface was created as there is several classes which share the same functions. The functions of this interface about the operations to change the scene from one to another.

HomePage Class

This class consists of 5 attributes, 9 operations and 1 constructor. In this class there is 8 operations which implements from the ChangeScene interface which are displayAbout, displayHomePage, sc_DisplayEdit, sc_DisplayShow, studentDisplayAdd, studentDisplayManage, courseDisplayManage, courseDisplayManage, courseDisplayAdd. These functions were mean to display the scene in the scene builder.

Besides, there is a logout function which will pop out an alert for the user to confirm is he or she confirm to log out or not. If the ok button is pressed, then the user will log out and the system will direct the user back to the log in page but if the user chooses for cancel then the user will remain on the current page.

Scores Class

This class consists of 3 attributes, 6 operations and 1 constructor. This class was designed for better organisation for the scores of the students. The user able to add, edit, and remove the score, id and course.

The operations getCourse, getId, and getScore is to get the value from the user and setCourse, setId, and setScore, is to set the value of the course, id and score.

Scores_Controller Class

This class consists of 11 attributes and 15 operations where 8 operations are from the ChnageScene interface. The addScore function will connect with Score.db and insert the typed id, score and course into the scores table to save it into database. The select function was to select the rows from the table for the purpose of edit and remove. The editScore operation will also connect with Score.db and will updates the edited id, score or course in the score table of Score.db. Whole the removeScore function will delete the selected rows from score table of Score.db. Lastly, the updateTable helps to update the values of the table.

DisplayScore_Controller Class

This class also implements the ChangeScene interface hence from the 12 operations recorded there are 8 operations which from the ChangeScene interface. Besides, this class has 6 attributes. The purpose of this class is to display the table which consists of id, course and score. Besides, this class also has the function of search for the user to have a better view on the result of the table. The user able to search according course or id.

About Class

This class implements 8 operations from ChangeScene interface. This class were mean to display to the user how to use the system.

CreateDBScore Class

This class consists of 4 operations which are createDBScore, createNewdatabase, createNewTable and main. These functions were used to create a new database for Score if the database have not existed and create the table for score in the database if not exist. The scores table in the Score database consists of three column which are id, course, and score. The value which added by users will be save into this database.

SQLConnectScore Class

The operations consist are SQLConnectScore, ConnectDB, createNewTable and getDatausers. This class was used to connect the SQL database created which is Score.db with the code. It will create a new table for score if it does not exist. The getdatausers will select the data from scores and was used to help to display the scores in the table view later.

SQLConnectUserName Class

This class was used to connect the SQL database created which is UserName2.db with the code.

CreateDBUsernameClass

This class consists of 4 operations which are createDBUsername, createNewdatabase, createNewTable and main. These functions were used to create a new database for UserName if the database have not existed and create the table for users in the database if not exist. The users table in UserName2.db consists of 2 columns which are username and password. The registered username and password will be save into this database.