Module Code & Module Title

CS6004NP Application Development

Assessment Weightage & Type

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Abstract

This is an individual course work for the module “Application Development” for Student Information System which is developed using Visual Studio Platform using C# language. The coursework is released in the week 5 and it is supposed to be submitted in the week 11.

With the great contribution of Mr. Ishwor Sapkota the course work was completed within the time duration.

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Introduction

The designed system is Student Information System. The system is highly designed developed and test under various circumstances. The features and functions that are required by Student's info are almost fulfilled by the developed system. It must allow the user to input the student personal detail including registration date so that a system can generate a weekly enrolment report of the student and their charts. System must include detail like Name, address, contact no, email, program enrol, registration date and daily wage amount of the employee. The application is to keep track of the student's details, program enrol and registration date. Furthermore, other available features are well explained in other sections of the report.

Current Scenario

This system keeps track of student scores in various tests taken outside the local grading system. The present situation in many schools is that there are many disconnected systems managing many different tasks. Systems with differing levels of functionality run independently of one another, causing multiple problems for the school's overall IT system. Many difficulties arise from inconsistently registered data, duplicate manual data entry, the extra time needed to manage multiple user accounts for one user, and non-productive time spent on technical support. In addition to these problems, the task of maintaining each individual system is time consuming. (Basal, n.d.)

Project Description

The system is a digitized system which is uniquely intended to overcome issue referenced previously. The system guarantees security with the presence of the login section. Section of information and data have been made simple with the presence of simple UI.

User Manual

After starting the information system, you can view login page. The username and password of the system is “admin”.

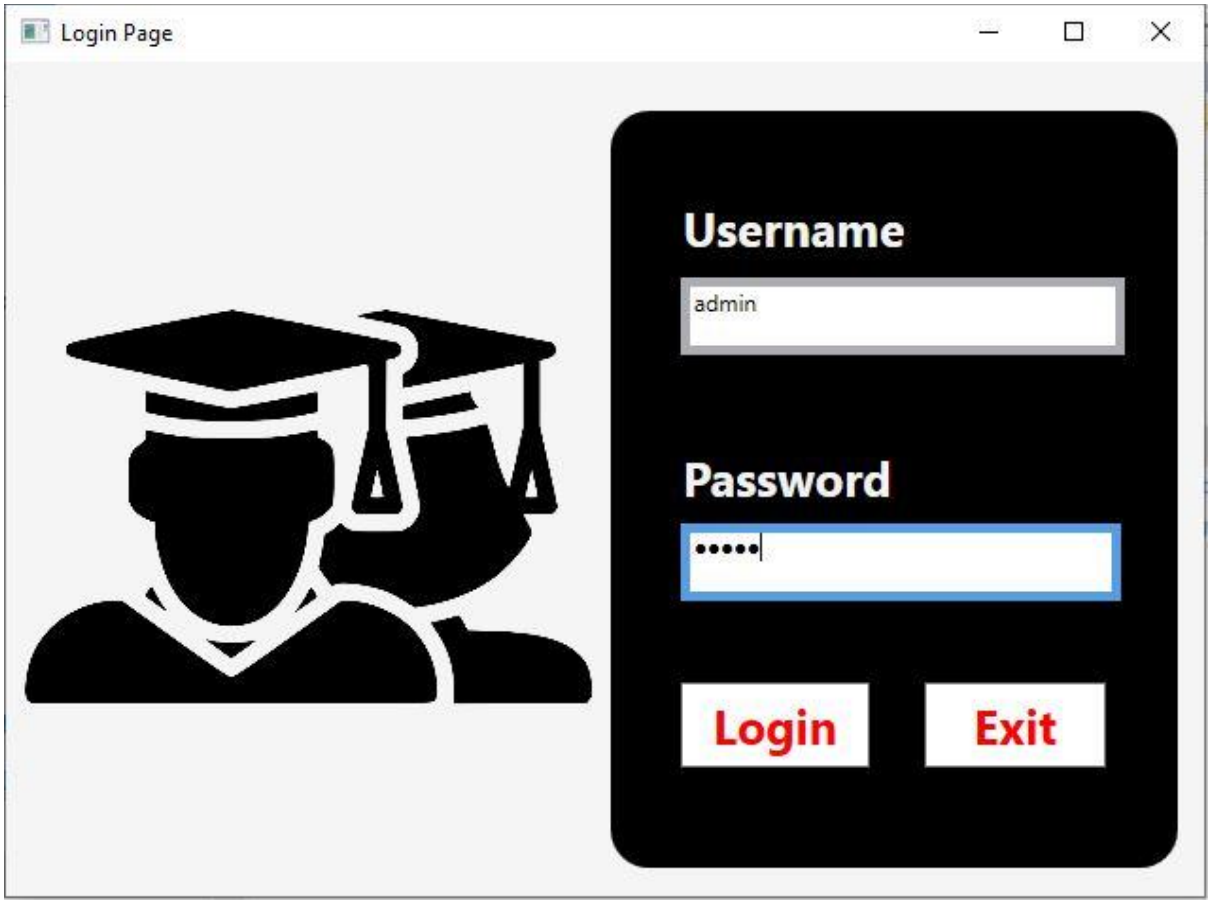

Figure 1: login page

After login page displayed, student has to provide login “username” and “password” to access into home (Student Information System). If student has provided incorrect “username” and “password”, then error message will be displayed.

Figure 2: invalid username and password

After login page displayed, when student had to exit the system then some message pop up as “Do you want to close this window?” if “Yes” they can click “Yes” button to get out from the system and vice versa.

Figure 3: exit

After login page displayed, student has to provide login “username” and “password” to access into home (Student Information System). If student has provided correct “username” and “password”, then home (Student Information System) will be displayed.

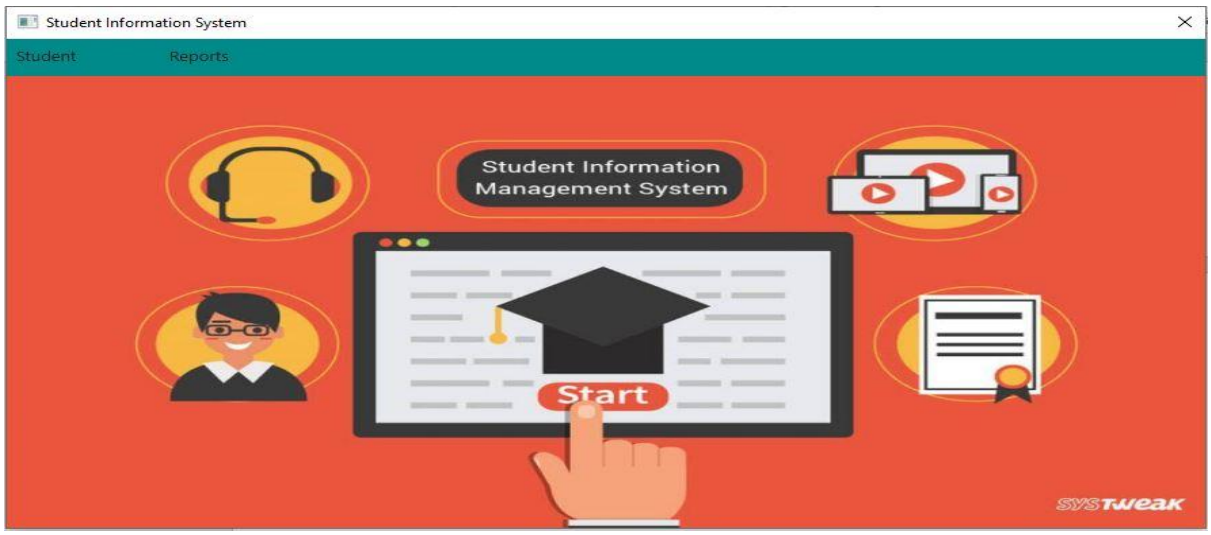

Figure 4: home page of student information system

There are different buttons in navigation bar with their functionalities. Some are them as follow:

Enrol Student: It is used to add the student and save a data of the students.

Import from CSV: It is used to import student csv from excel.

Student Details: It add the student full details.

Weekly Report: It generate weekly report from student details.

Chart: It preview chart of the student’s detail.

Sort by Name and Registration Date: It displays student detail sort by Name or Registration Date

Functionality

The system’s sole purpose is to enter visitors’ data. It requires 2GB Ram on the computer system as well as Windows operating system.

Diagram

Architecture Diagram

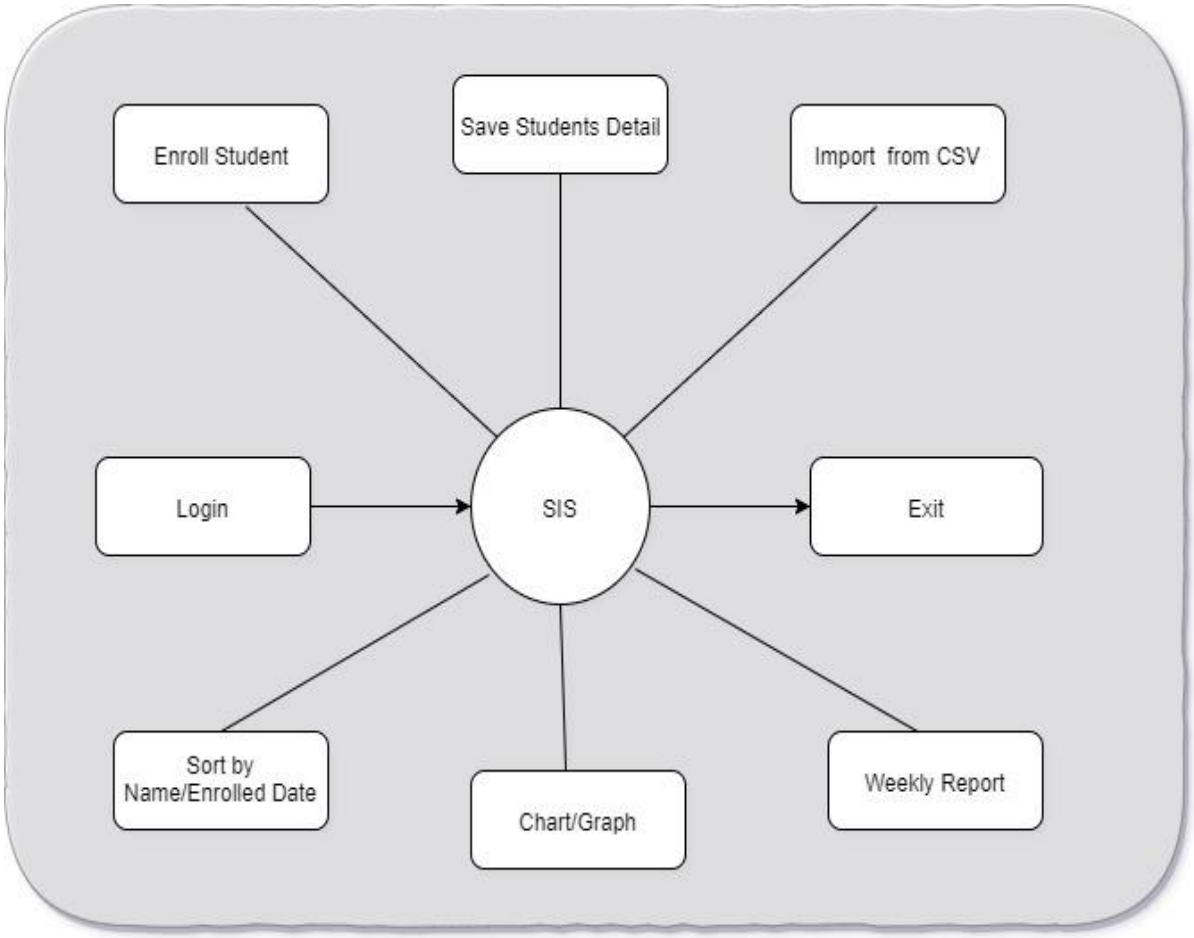

Figure 5: Architecture diagram of the student information system

The information system requires a correct “Username” and “Password” to login. The student gets access to the home page after a successful login. Home page holds enrol student to add student’s detail and save, where import from CSV, student’s detail, like full name, address, contact number, course enrol and registration date which can be added. Admin can update the student information and then log out of the system.

Class Diagram

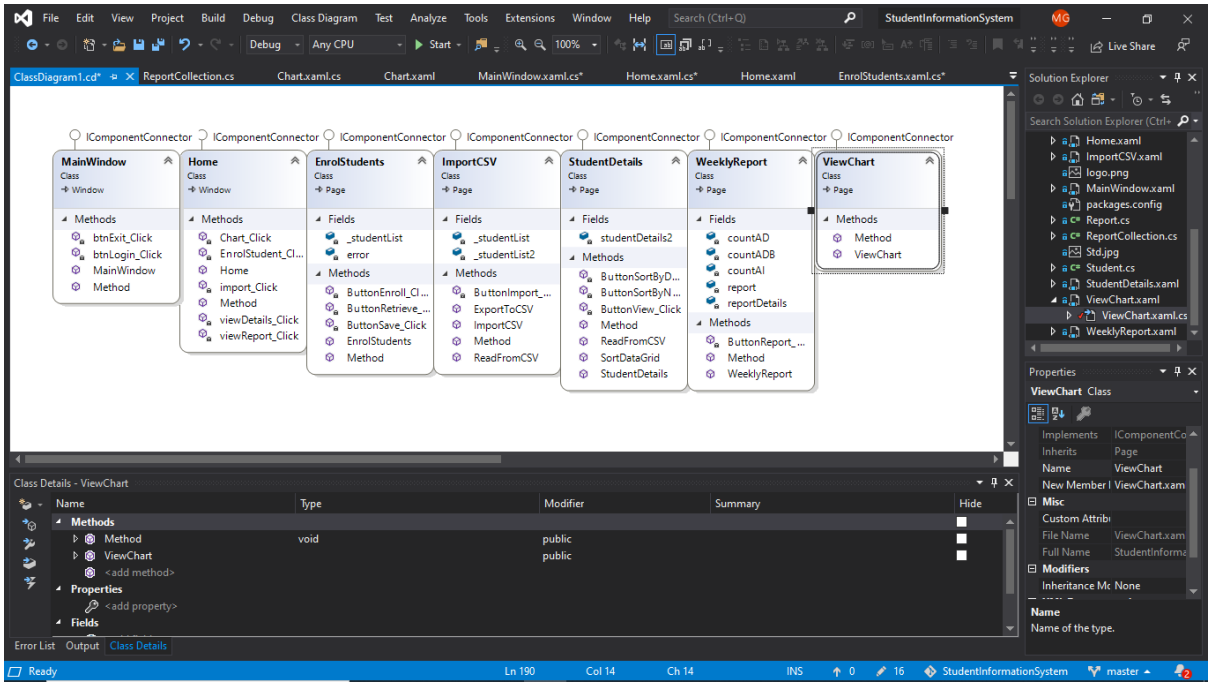

Figure 6: Class diagram of system

Classes and Methods

Main Window

Home

Enrol Students

Import form CSV

Student Details

Weekly Report

View Chart

Flowchart

Weekly Report

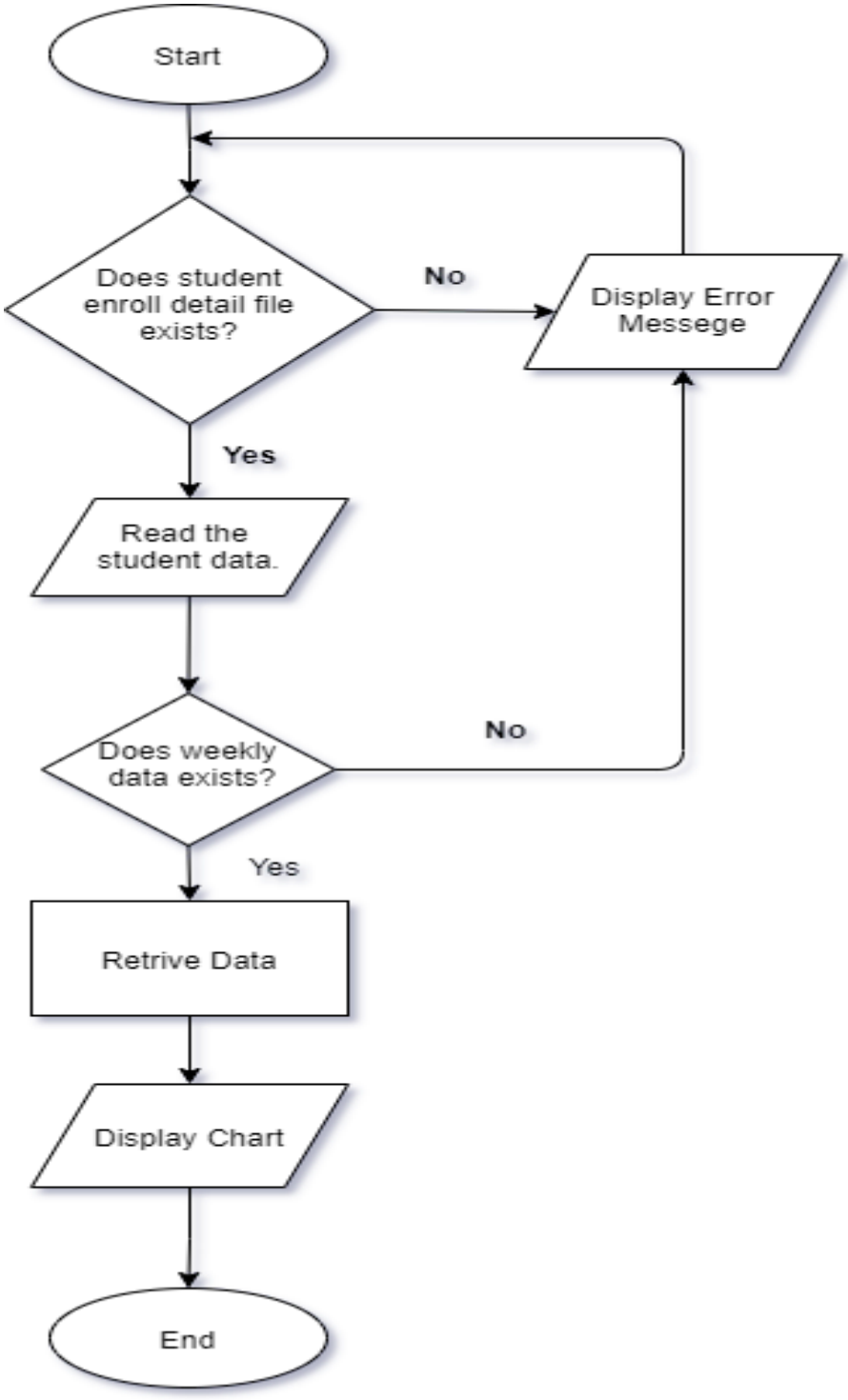

Figure 7: Flowchart of the weekly report

Algorithm

“Sort by comparing each adjacent pair of items in a list in turn, swapping the items if necessary, and repeating the pass through the list until no swaps are done.” [1]

(nist.gov/dads/HTML/ bubblesort, 2016). Bubble sort is such types of algorithm, which compare the element in array in ascending or descending with swapping if necessary.

Base on working: - with ascending order.

Let’s take an element of Z = [15, 10, 25, 20].

Step 1) Here, the element of z is unsorted.

[15, 10, 25, 20]

Step 2) Bubble sort compare the first two element. Here, as the first element (15) is greater than the second element (10) so the bubble sort interchanges the element. As it look like this-

[10, 15, 25, 20]

Step 3) Now bubble sort algorithm compare second element (15) and the third element (25) as 15 is already smaller than 25 so no swapping of position is done.

[10, 15, 25, 20]

Step 4) Again, bubble sort algorithm compare last two element (25) and (20) as 25 is greater so automatically bubble sort interchanges the element, the array look like this-

[10, 15, 20, 25]

Step 5) At last, there's no swap in ascending order so the bubble sorts shows that an array is completely sorted.

[10, 15, 20, 25] (Anon., n.d.)

Weekly Report

Steps:

1. Start
2. Check whether the student login exists or not.
3. If it doesn’t exist, display error message and restart
4. If exists, read the available student data
5. Check whether there is student enrol data or not
6. If data doesn’t exist, display error message and restart
7. If data found, retrieve the data
8. Display the student details in the data grid.
9. Stop

Data Structure

List <T>

List<T> class represents the list of objects which can be accessed by index. It comes under the System. Collection. Generic namespace. List class can be used to create a collection of different types like integers, strings etc. List<T> class also provides the methods to search, sort, and manipulate lists. (Anon., n.d.)

List <T> is used in every part of the system such as enrolling the student details and import from CSV file, display weekly report and chart because it can store the object of a class of any data types. To display data grid of file it is used sort by name list and registration date.

Testing

There is many testing after the completion of this information system. Some of the testing are as follows:

Test 1:

The username and password of the system is “admin”. Only a correct username and password can provide access to the system.

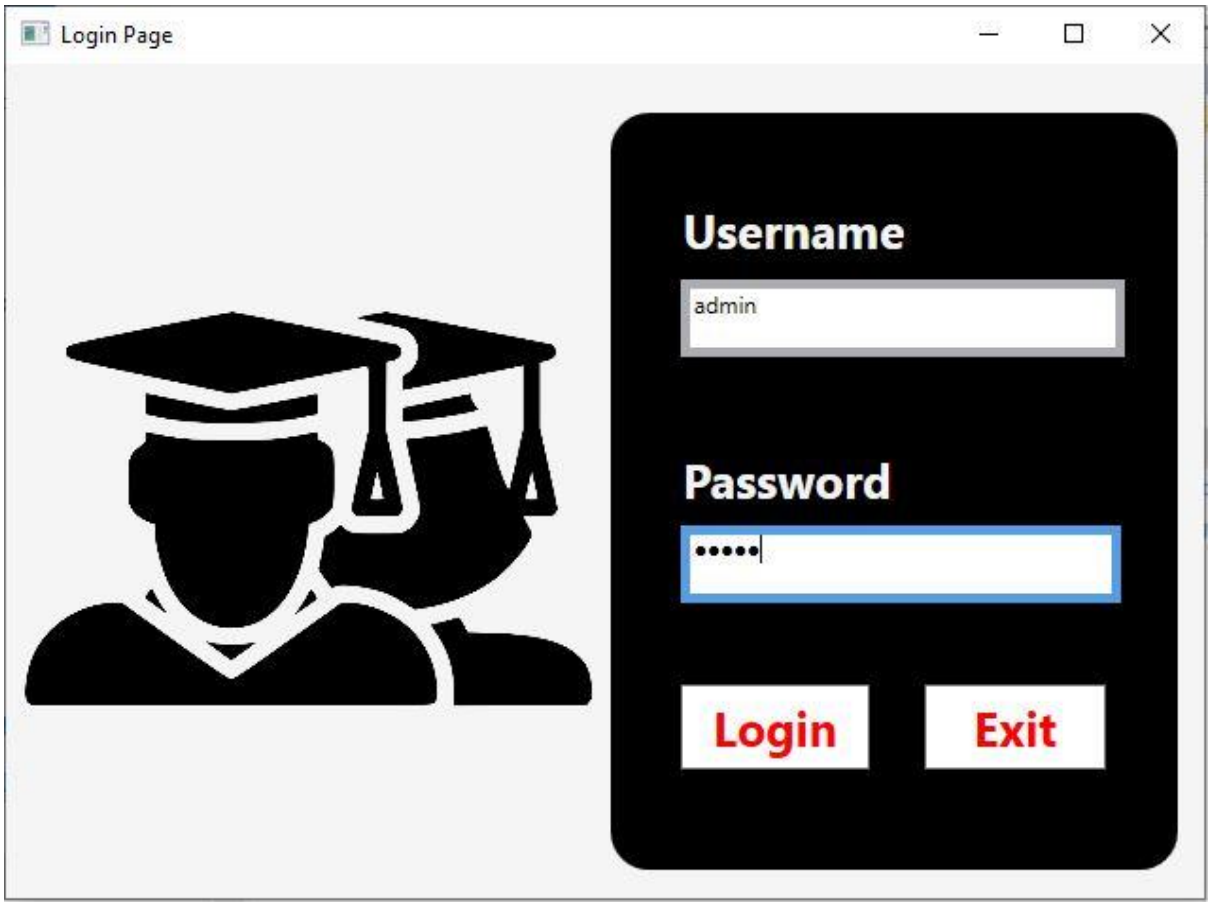

Figure 8: login page of system

Test 2:

After successfully login the main screen of the system displayed.

Figure 9: homepage of the system

Test 3:

After that the student screen of the system displayed.

Figure 10: student page of system

Test 4:

The Reports screen of the system is displayed.

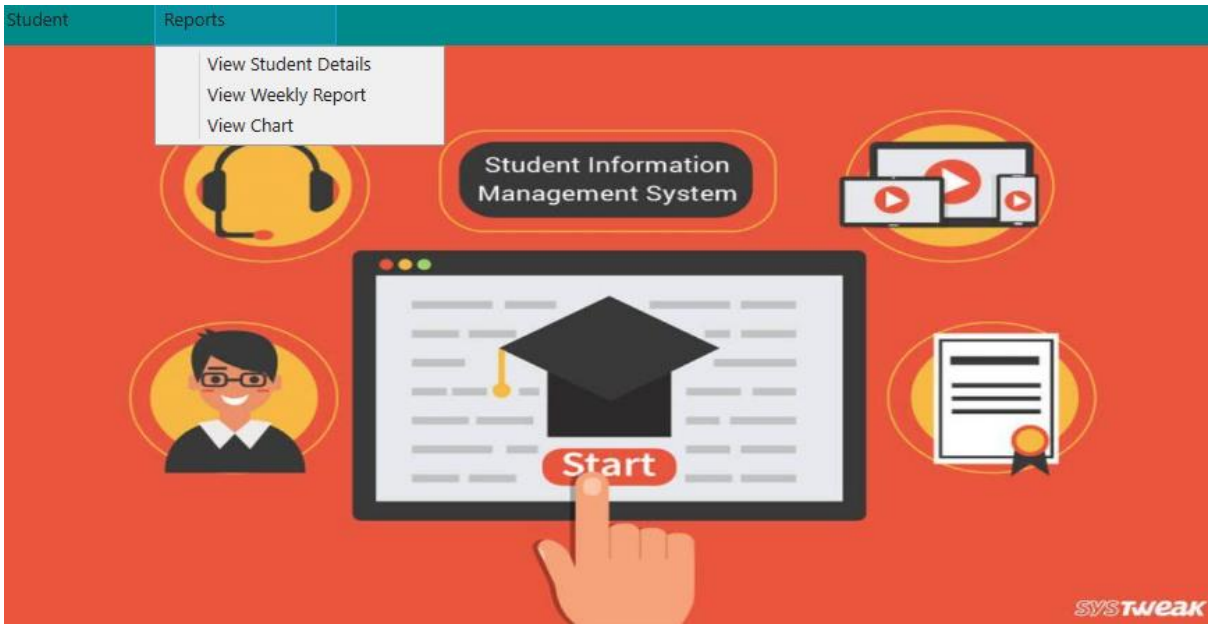

Figure 11: Reports page of system

Test 5:

Student details are enrolled in the system.

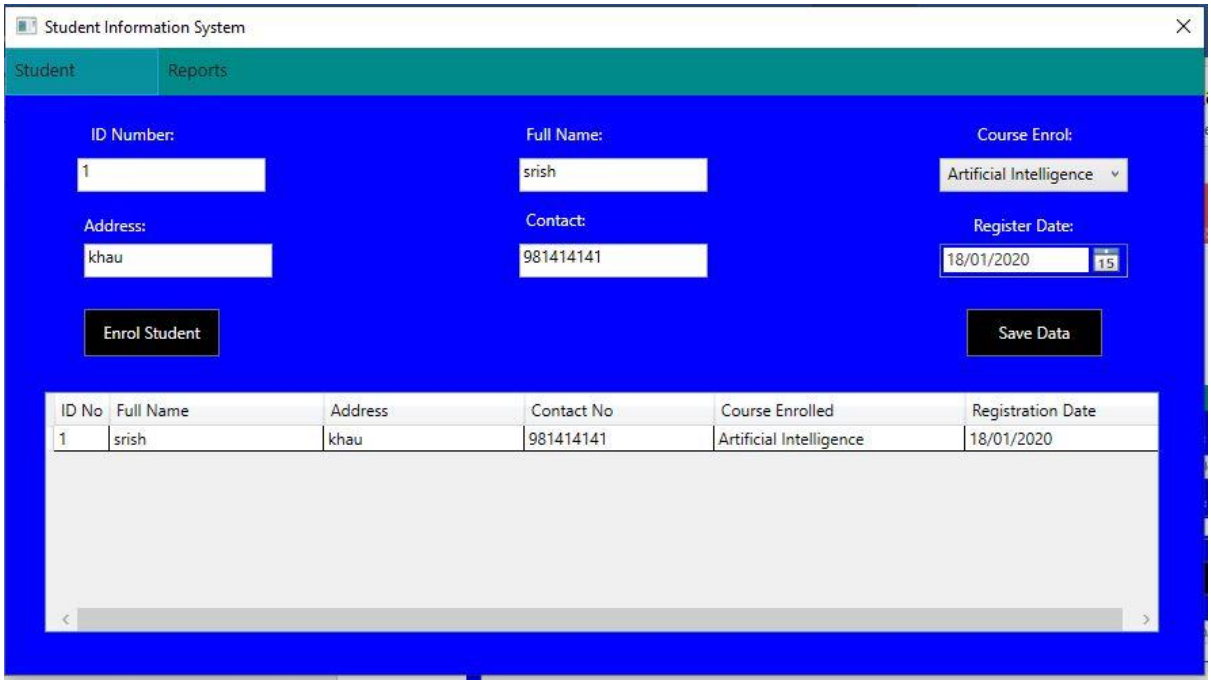

Figure 12: enrol student of SIS.

Test 6:

After enrol the student, the details are saved/exported as studentdetails.CSV file.

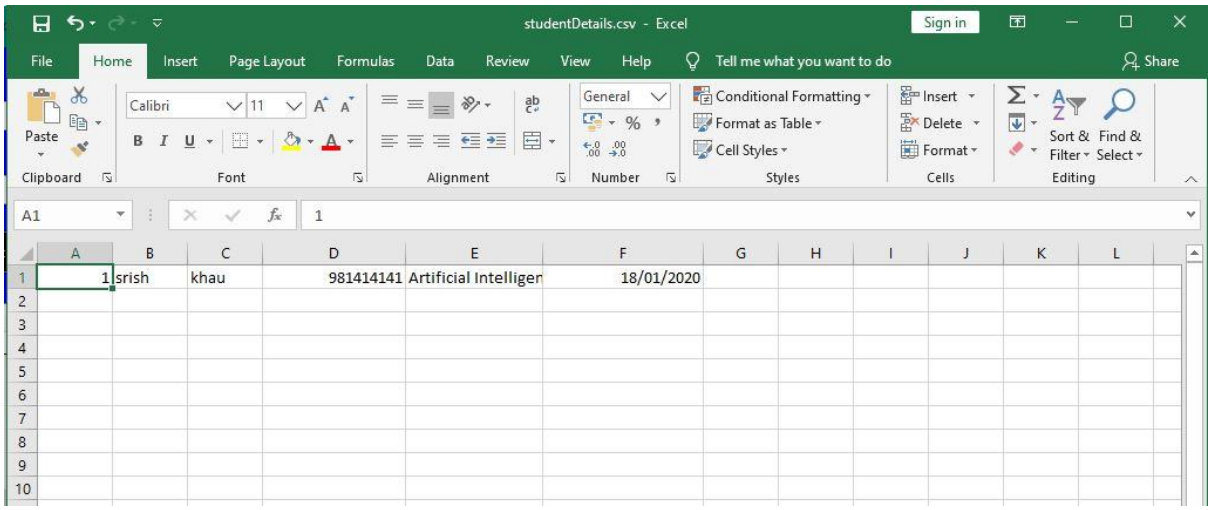

Figure 13: enrol student of CSV file

Test 7:

Enrolled students are successfully saved in the system.

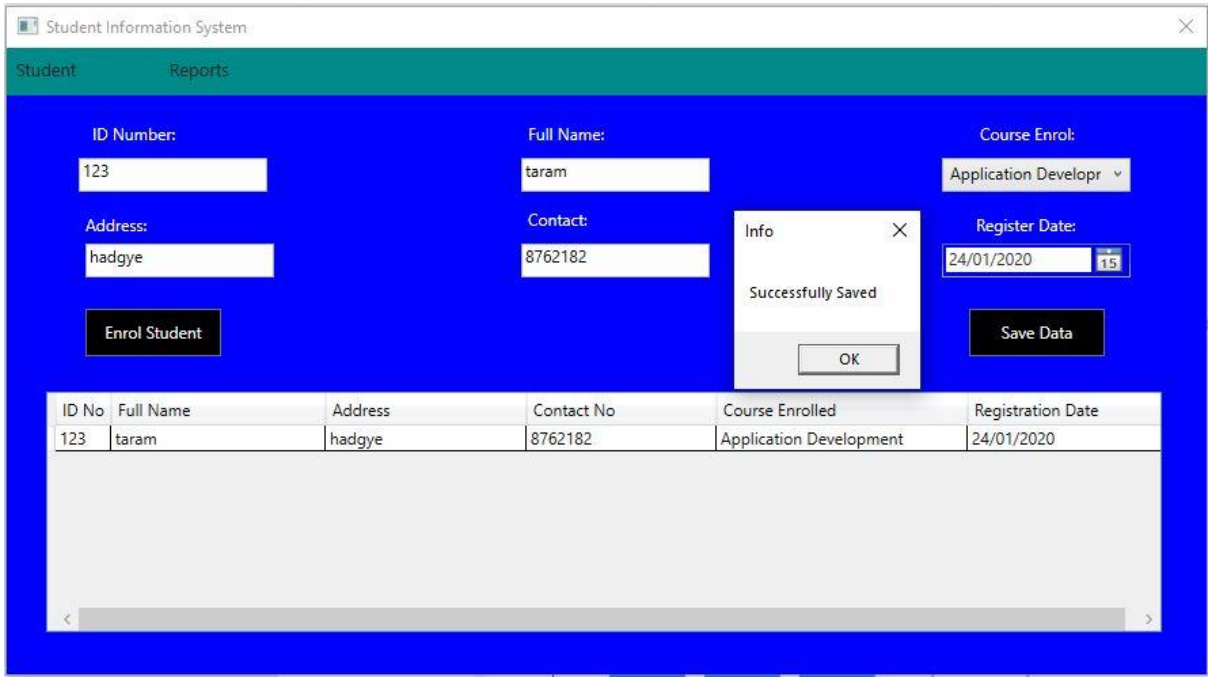

Figure 14: successfully saved of enrol student

Test 8:

While clicking to the import from CSV of student, the UI of the import from CSV is displayed.

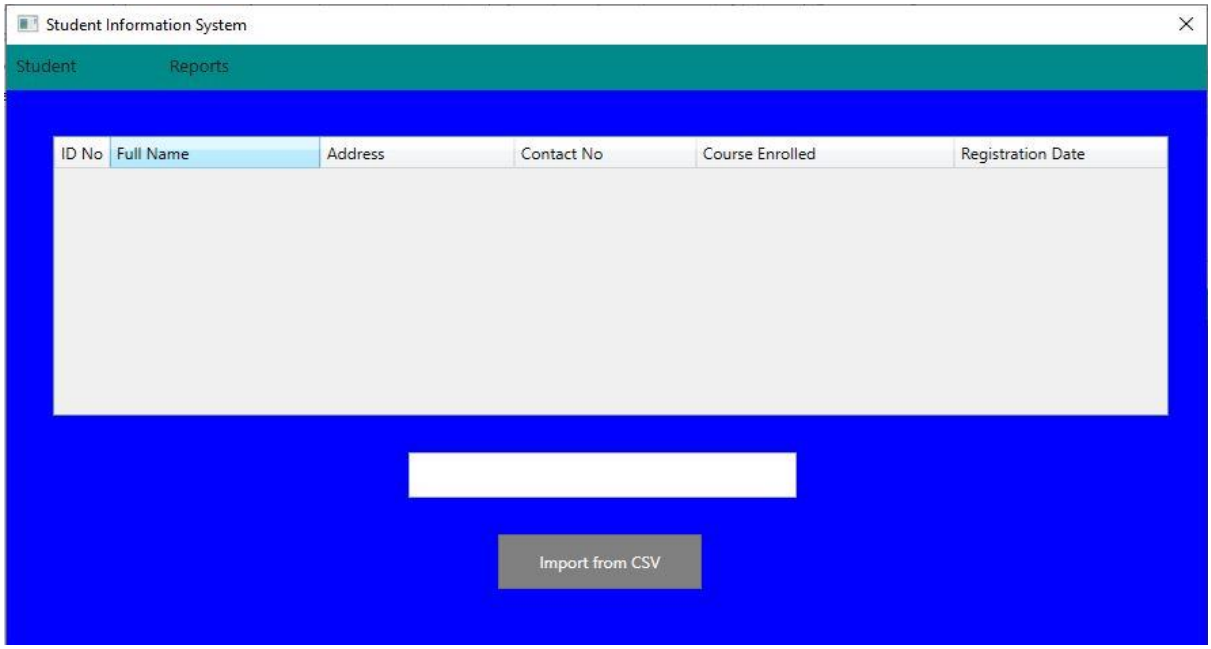

Figure 15: import UI of the system

Test 9:

While importing from CSV, csv file will be pop up from the existing system.

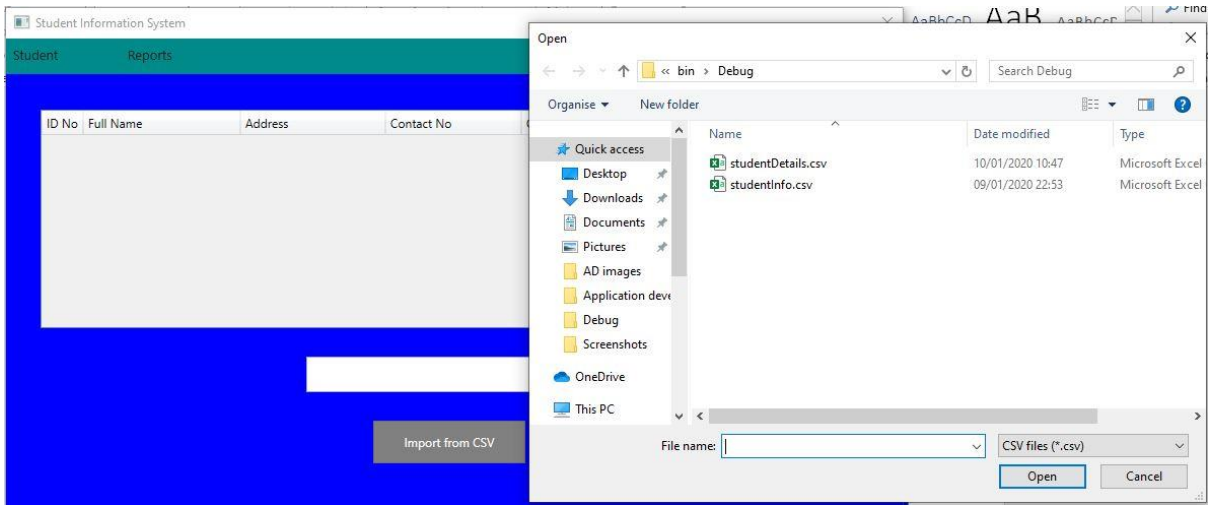

Figure 16: show folder of CSV file while importing

Test 10:

The CSV file with the student details which is to be imported to this system.

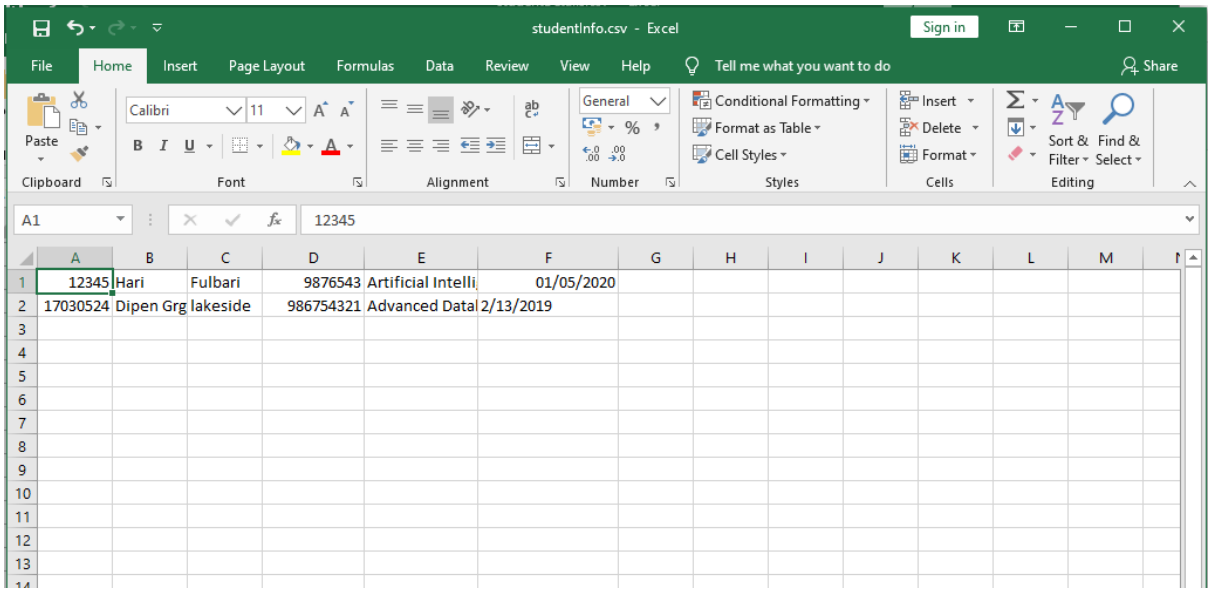

Figure 17: import student detail to the CSV file

Test 11:

The detail of student that are imported from CSV file.

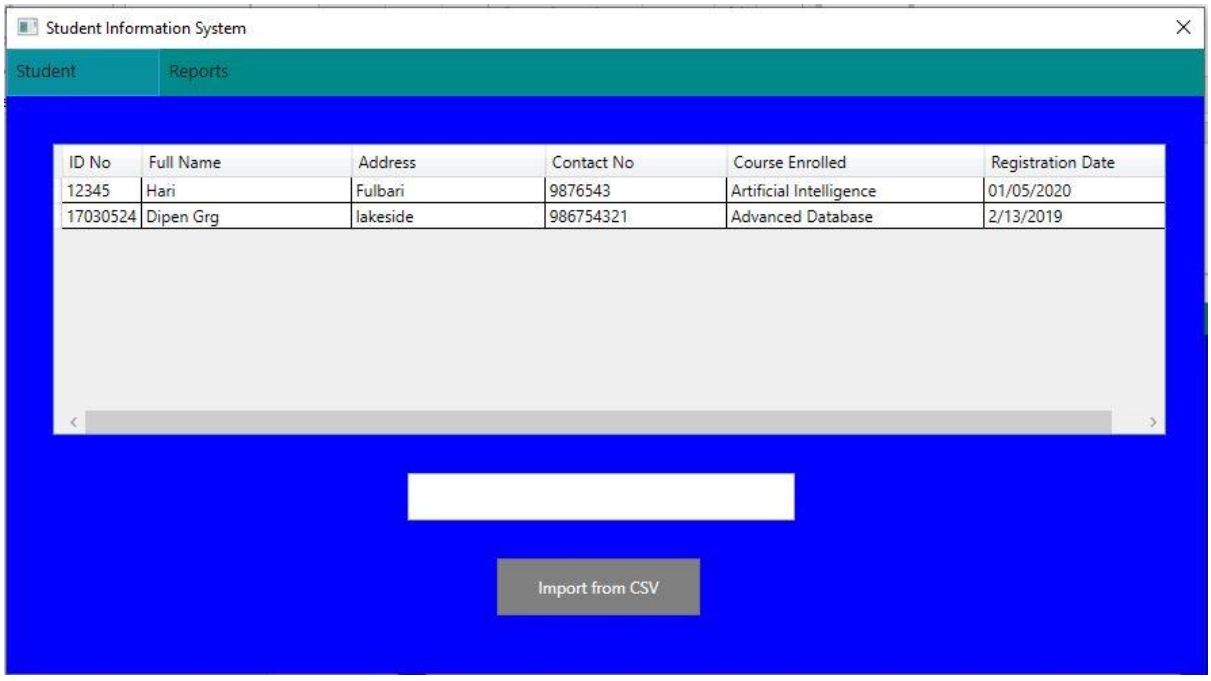

Figure 18: imported file

Test 12:

After importing the csv file the data are stored in studentdetails.CSV file.

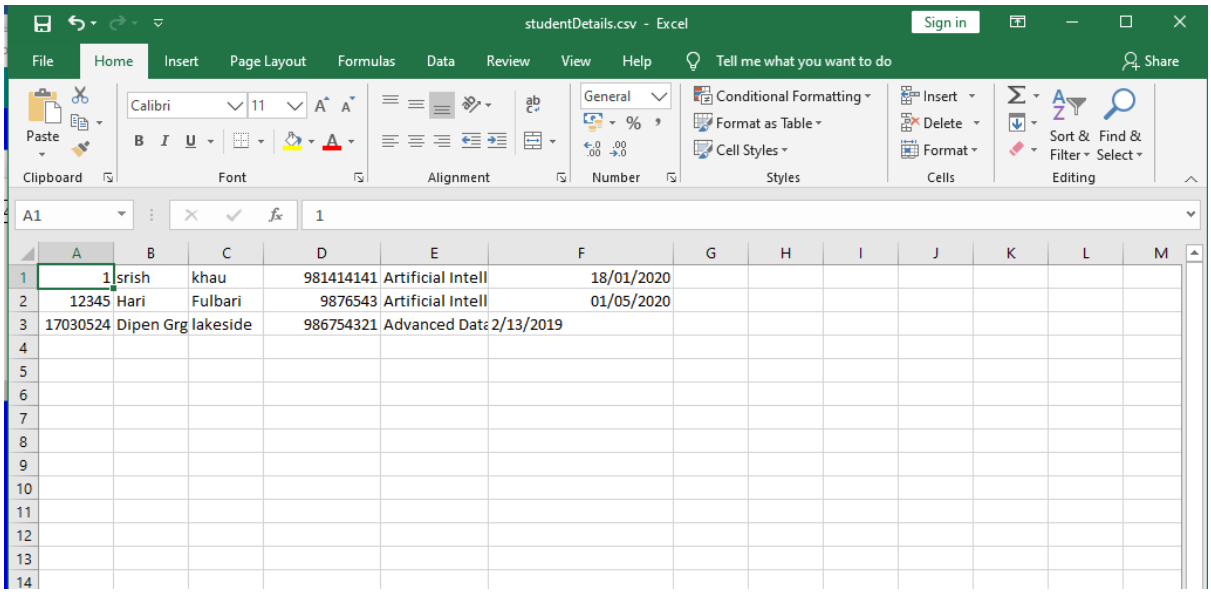

Figure 19: stored student details in student details CSV file

Test 13:

While clicking to the view student details of reports, the UI of the student details is displayed.

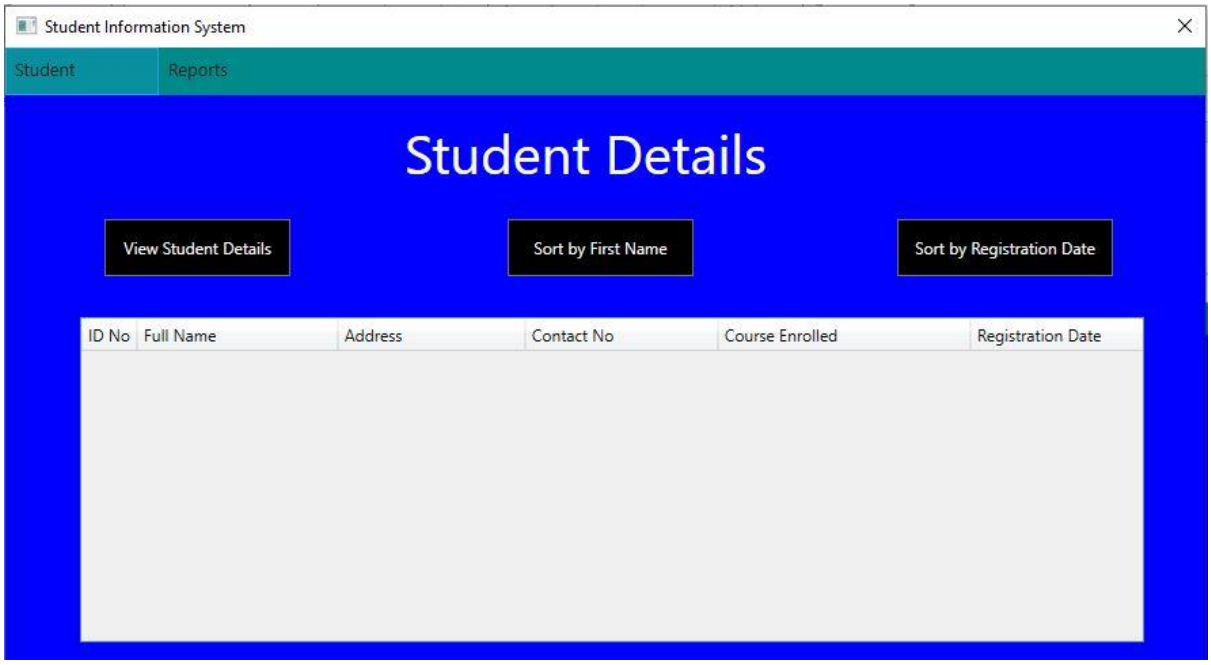

Figure 20: Student details UI

Test 14:

The details of student are shown while clicking view student details.

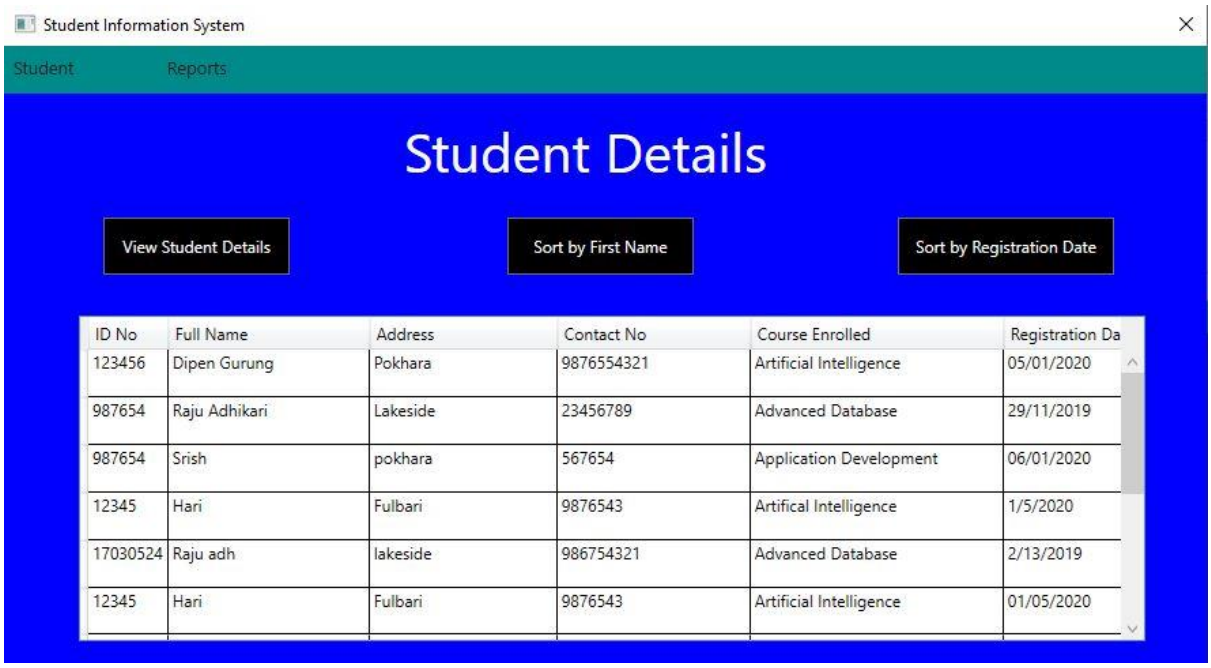

Figure 21: view student details

Test 15:

The student details which is sort by name is properly displayed.

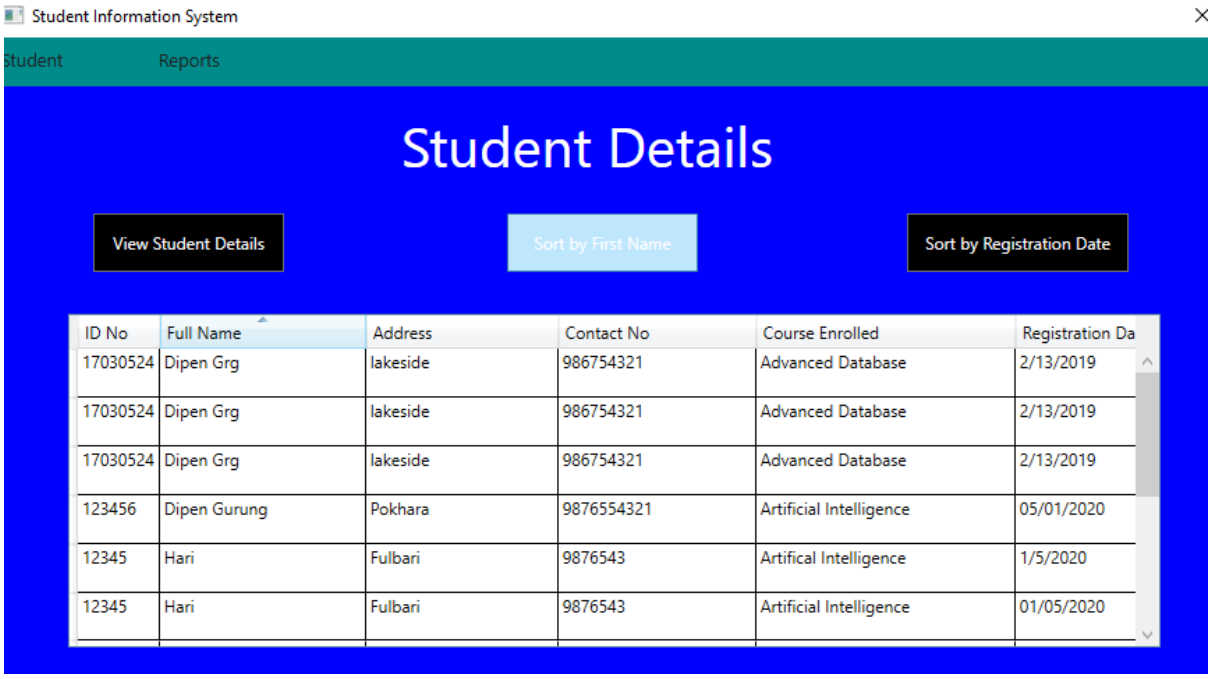

Figure 22: view sort by name

Test 16:

The student details which is sort by registration date is properly displayed.

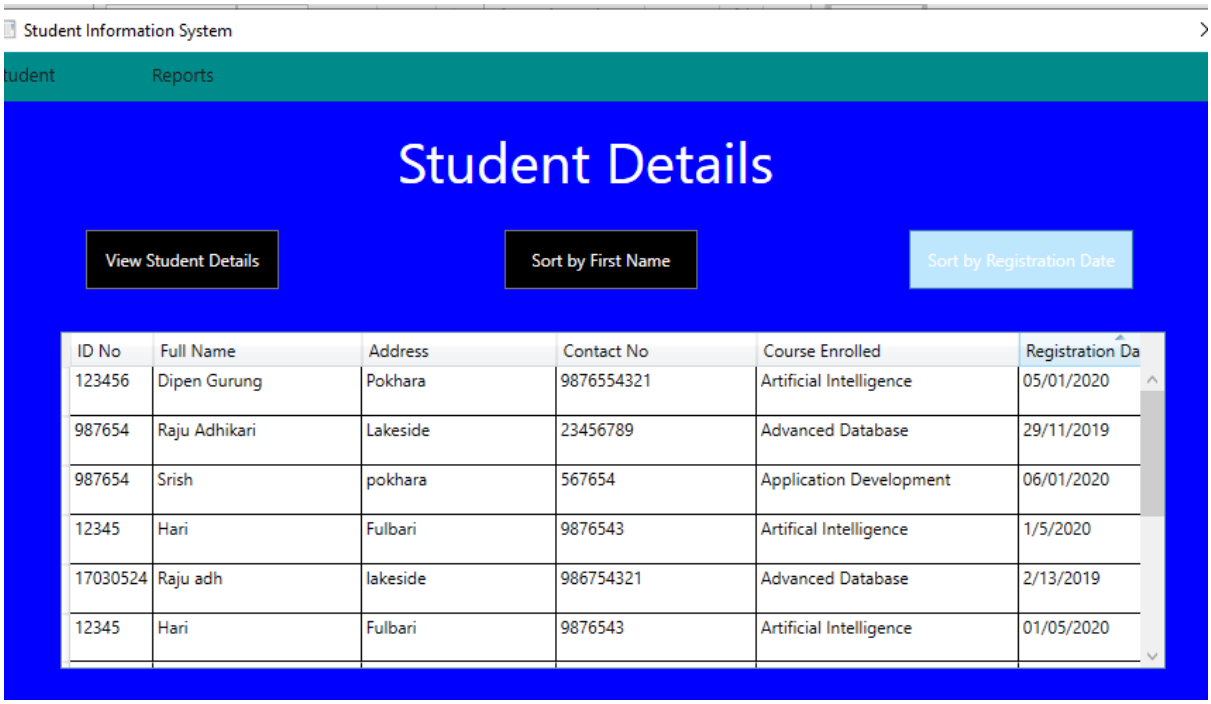

Figure 23: view sort by registration date

Test 17:

While clicking to the weekly report of reports, the UI of the weekly report is displayed.

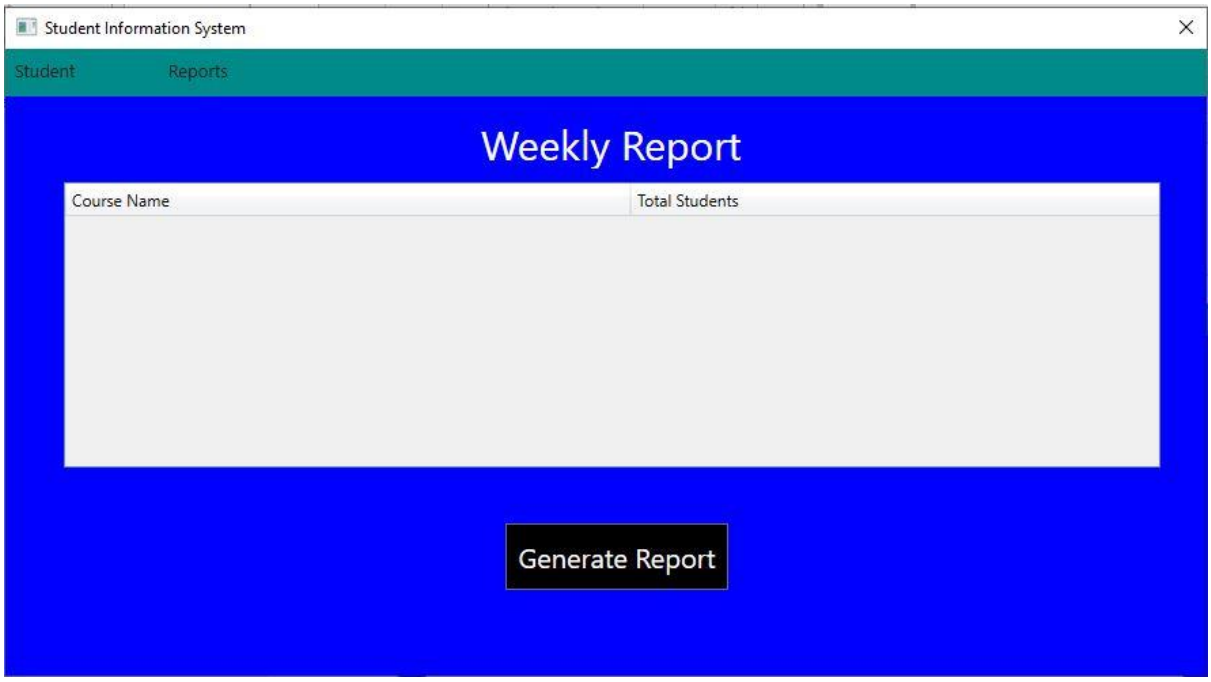

Figure 24: weekly report UI

Test 18:

The total student of the course name is displayed in weekly report.

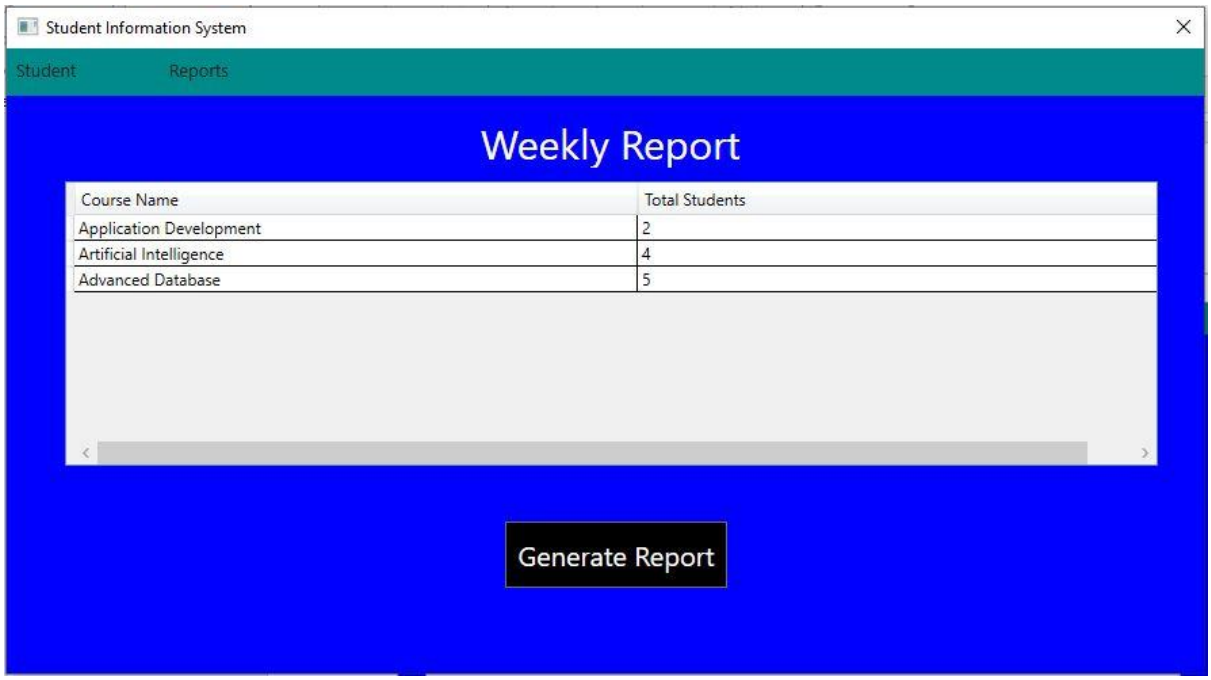

Figure 25: view weekly report

Test 19:

While clicking to the chart of reports, the UI of the chart is displayed.

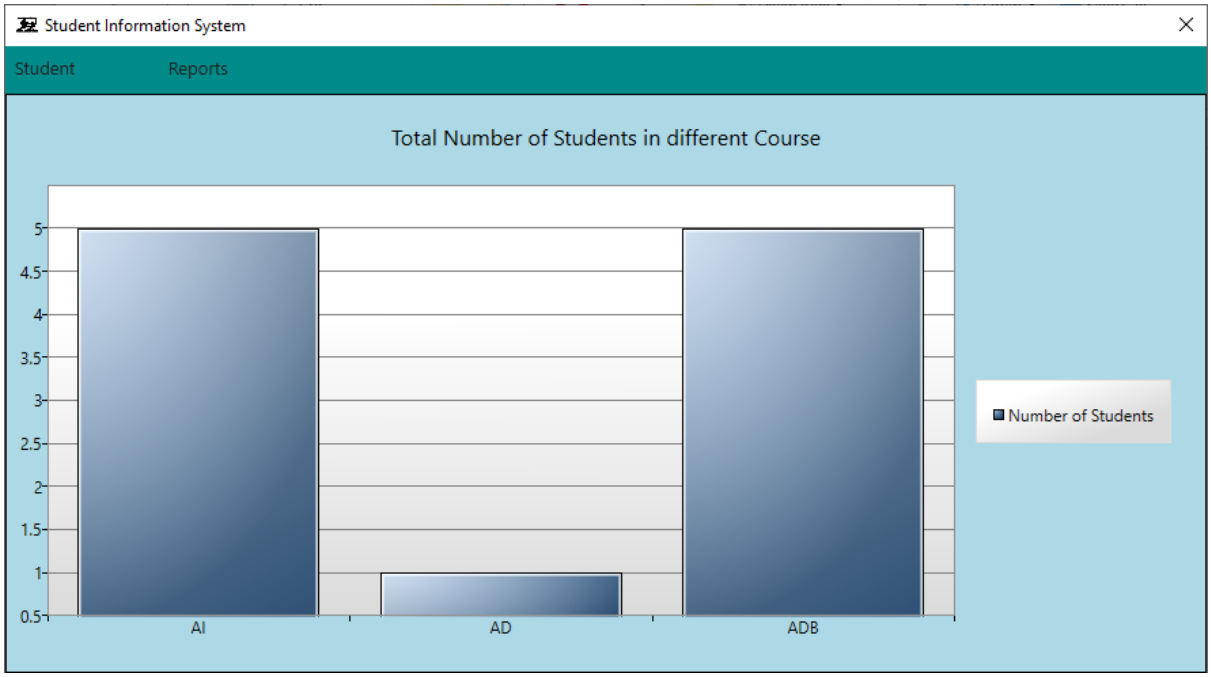

Figure 26: view weekly chart

Reflection

Visual studio 2019 has been the best platform to develop student information system. The project reflects real working environment for a system to enrol student details like name, address, contact number etc. The project UI have many feature and functionalities like images, button, fonts and other features of the system. Though different research and hard I have completed the task.

The system is developed in C# programming language (WPF) using visual studio. Though it was not easy to make a sublime user interface. I have in one way or another made it conceivable. I had drawn a few personality maps while developing the program. I needed to drop numerous plans and ideas to accompany the best one. I have put forth a valiant effort and go to the outcome.

After the project's completion, I have gained more knowledge about using (WPF) in visual studio. The project challenge to my creativity to complete my project successfully in dateline. The time I spent working on my project was very necessary and effective. It has polished me working in programming language.

Conclusion

The initial coursework for the module CS6004NP Application Development was to develop a student information and data. It required a long time to build up the task in Visual Studio Enterprise 2019 utilizing C# programming (WPF). The framework has login page to add details of the student. After login page, the system shows a homepage where every button with functionalities are found of their own work. Beside different shape section, class layout for all of the structures and classes were used.

With the help of module leader, the project Student Information system is successfully updated.

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