Informatics College Pokhara

Application Development
CS6004NA
Coursework 1

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1. Introduction

The Student Information System is designed to handle the data of student in more systematic pattern which can be able to perform basic pattern like adding, sorting and displaying. This kind of system is useful in many educational organization and institution to track the data in more proper way. This system was done with C# that is capable to take the entry from users like their registration number, id, date and so on and able to add in its system. This should also be able to add, clear and show the weekly report of the student in the form of table. This system must be able to keep the proper track of the student and be able to do it in desktop form. This kind of system will be more useful in the coming future on the field related to the education system.

1.1 Current Scenario

As we know that, the education system in Nepal is getting better and better. This kind of Information System will definitely help in such organizations to keep the proper data and make them designed their data in more systematic and simpler way. This will help the chance of reducing any kind of error or loss of any important data in the future. So this system will play an important role in the field of educational system in the current scenario of our country. Some of the current Scenario regarding the System are:

1. Hard to navigate
2. Greater Entry Of Barrier
3. Expensive and Hard To maintain
4. Cost in effective

1.2 Proposed System

The system is designed in order to prevent any sort of error that can happen in the near future which is related to data handling and sorting. This system will be able to help the user to make and track data in simpler way and quickly. The proposed System is:

1. Easy to navigate and use
2. User Friendly
3. Sorting done for further ease
4. Graphical and tabular display

2. User Manual

A correct user manual is needed so that people can easily navigate in the system without need of developer by their side. Screenshots are displayed below:

2.1 Login

In this part, the user have to put their authorized user name and password to get login.

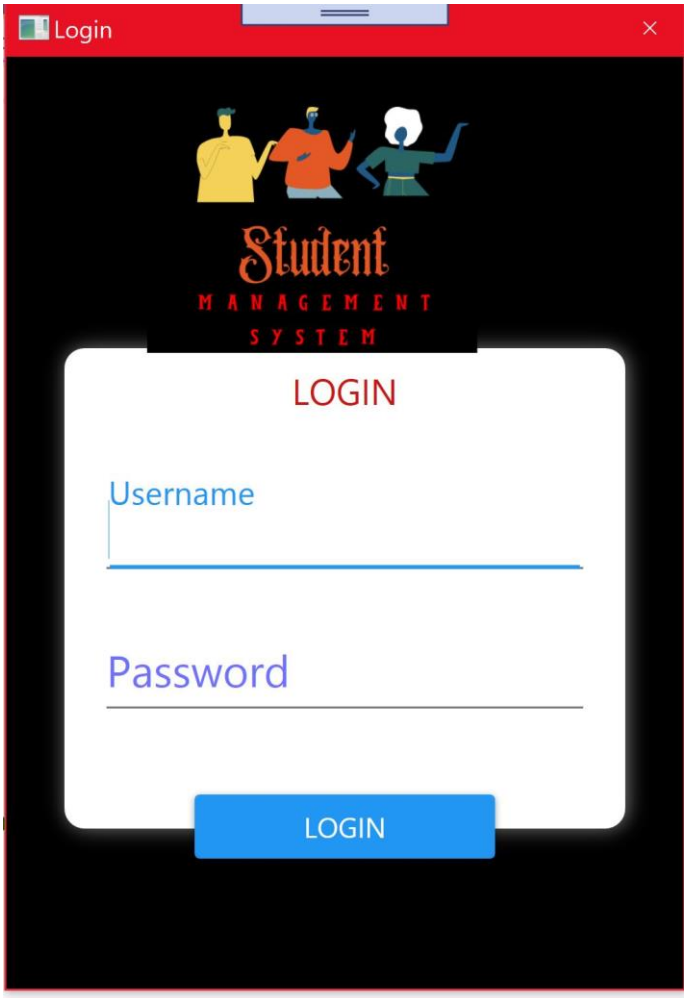

Figure 1: Login Window

2.2 Enroll System

This is the main window where the user have to put all their basic details like id, name, date and others so that the details of the student can be added and also will be useful for displaying weekly report and chart.

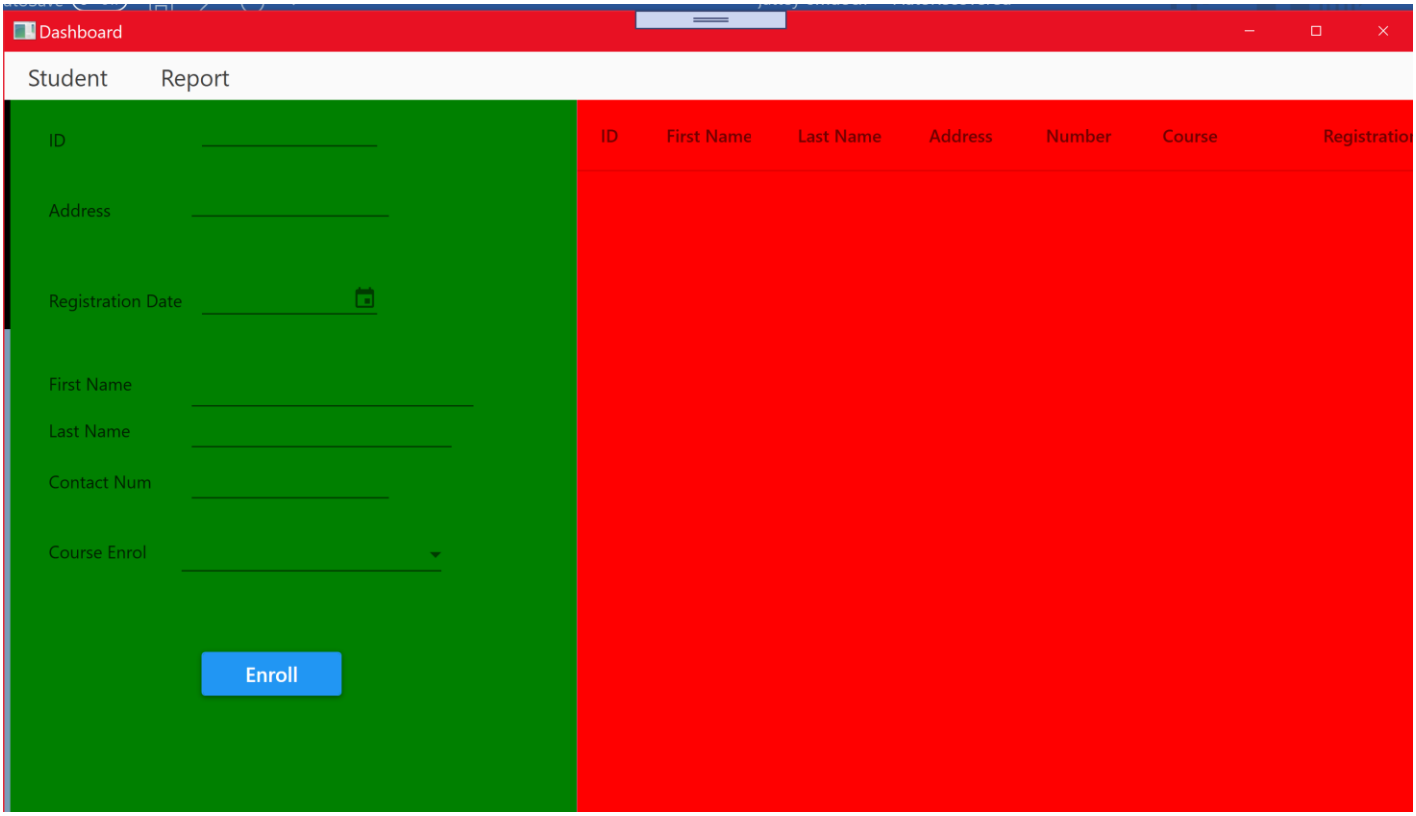

Figure 2: Student Information System

2.3 Enroll Imput

As the user visits the Visitor Entry Section user have six features to work with.
The first feature is to add the details of the visitor's entry to the system which includes the date, day is automatically taken by the system.

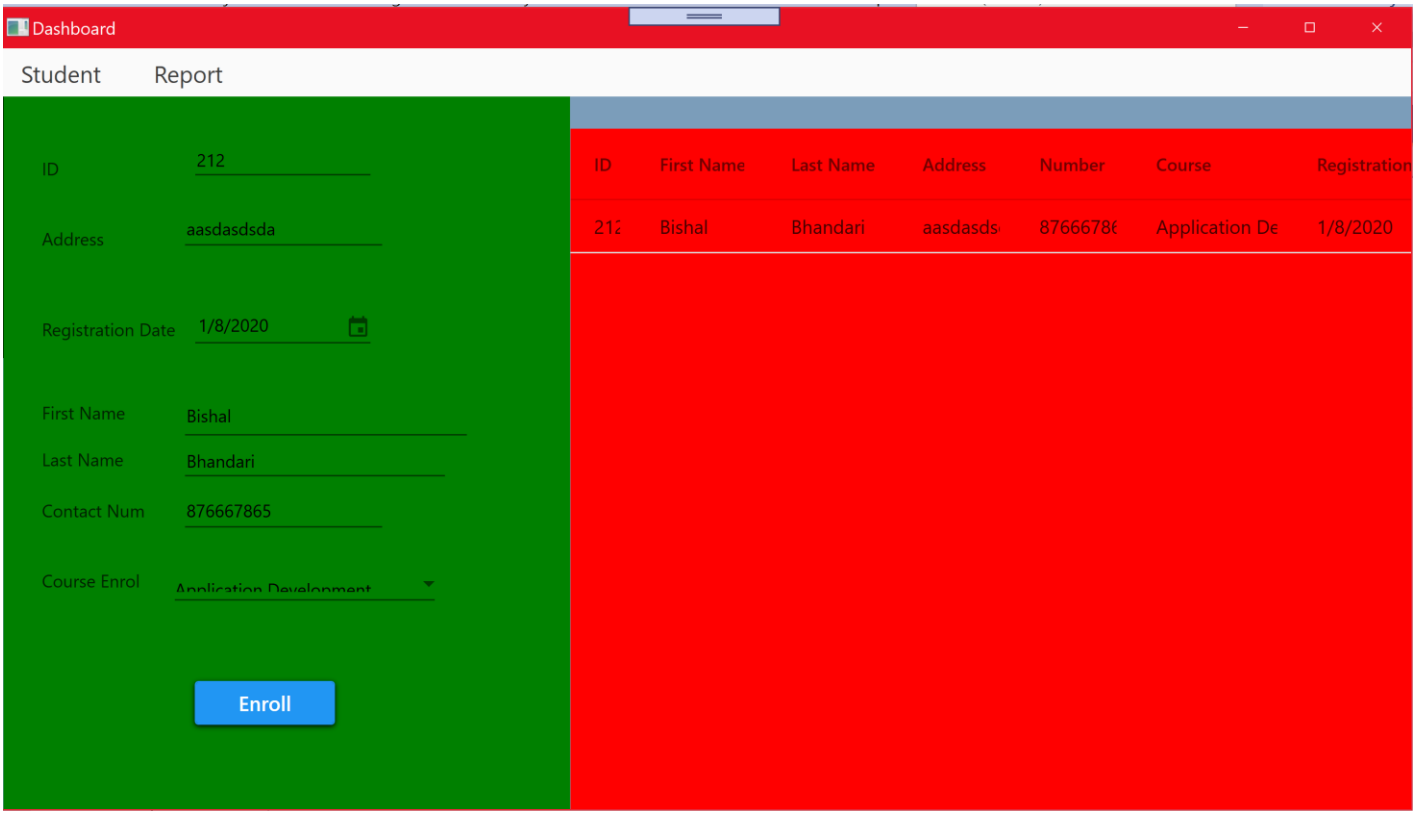

Figure 3: System Input Section

2.4 Validation

User must put data in the input fields so that data can be filled in the DataGrid. If they don't enter any data they will be displayed an error box to display required data.

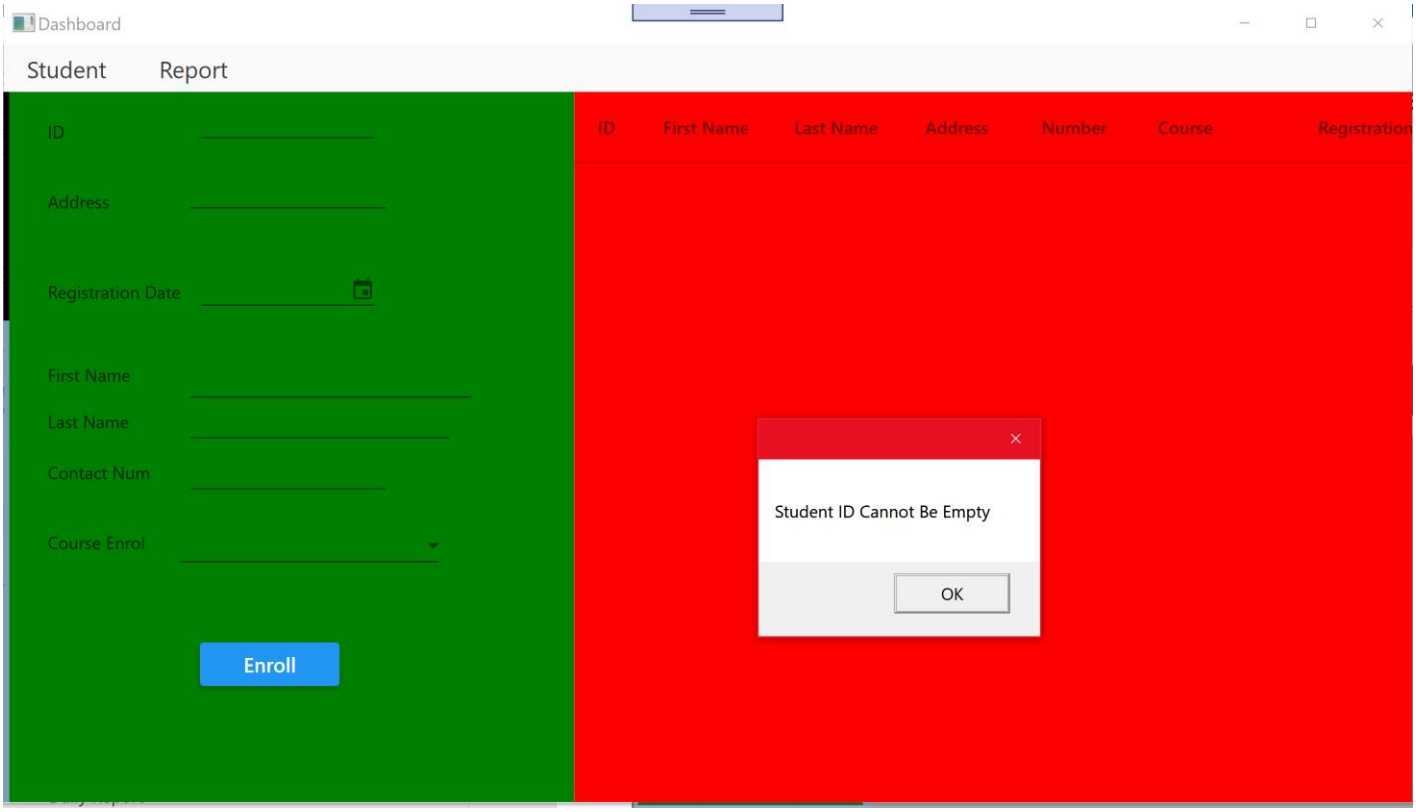

Figure 4: Data requirement

2.5 Calendar Features

When the user access the system in a valid day and time can now access the facility of adding visitor entry details.

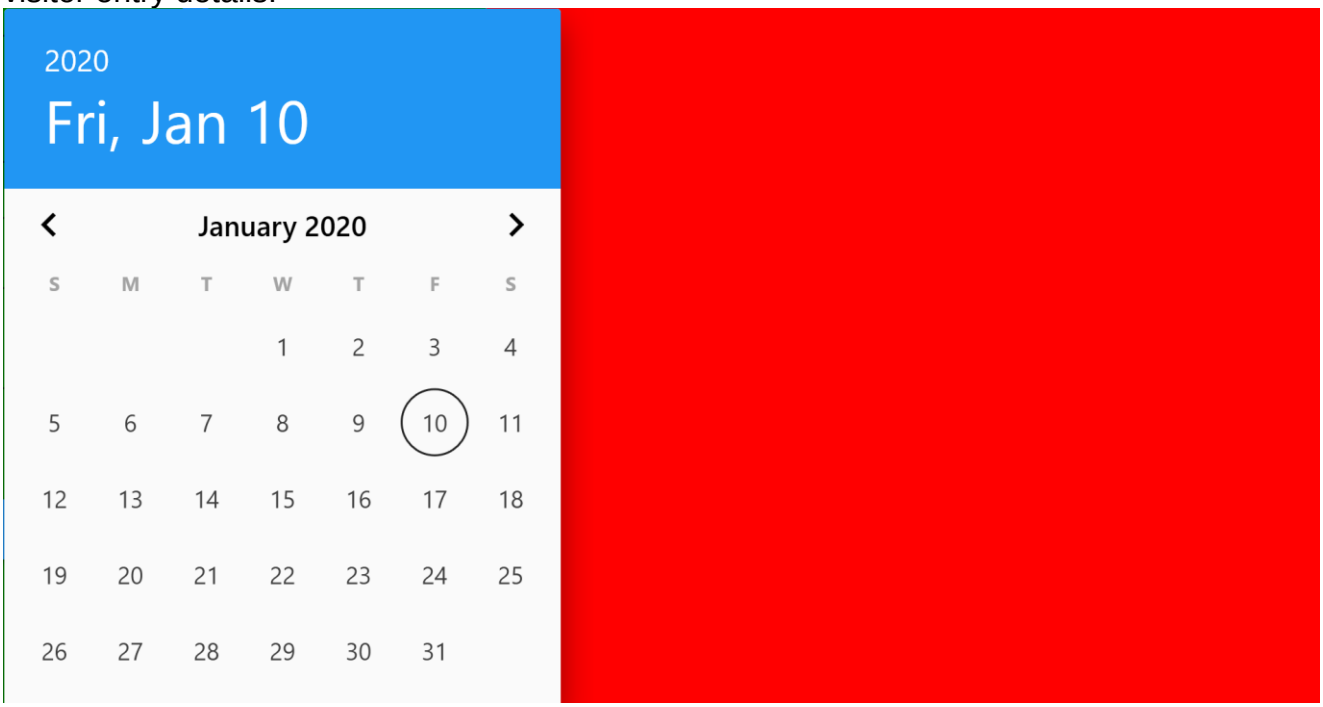

Figure 5: Data And Time Feature

2.6 Import CSV

A user can import the data from CSV file into the grid as below.

Figure 6: CSV import

2.7 Unsorted Data

The unsorted data will be displayed in the grid as shown below.

Figure 7: Sorting Unsorted Date

2.8 Sorted Data

An end user can sort data present in the grid by clicking on ‘Sort by Name and Date’ which is present in Top Right corner. The Sorted data looks alike.

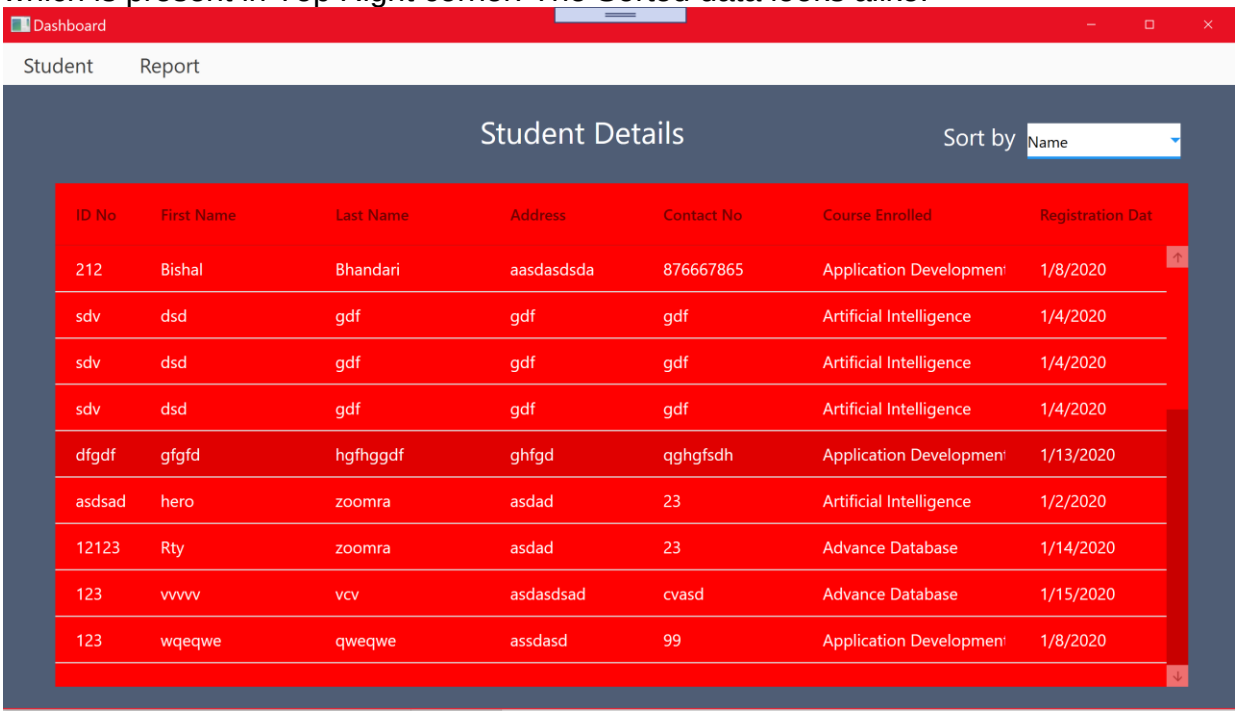

Figure 8: Sorted Data

A key feature is the report section. Report features like Daily Report and Chart and Weekly Report and Chart. To access the report section a user should click on the Report section and choose either Daily or Weekly.

2.9 Weekly Table

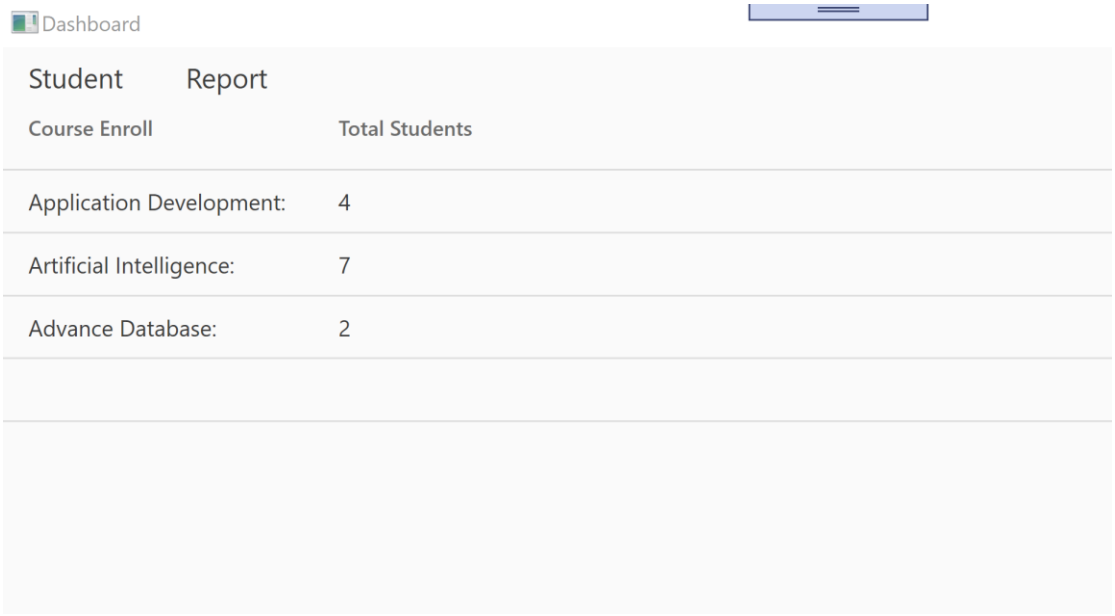

Figure 9: Weekly Table

2.10 Chart View

To view the Daily Detail in a chart section a user should simply click on Display Chart and following screen will appear.

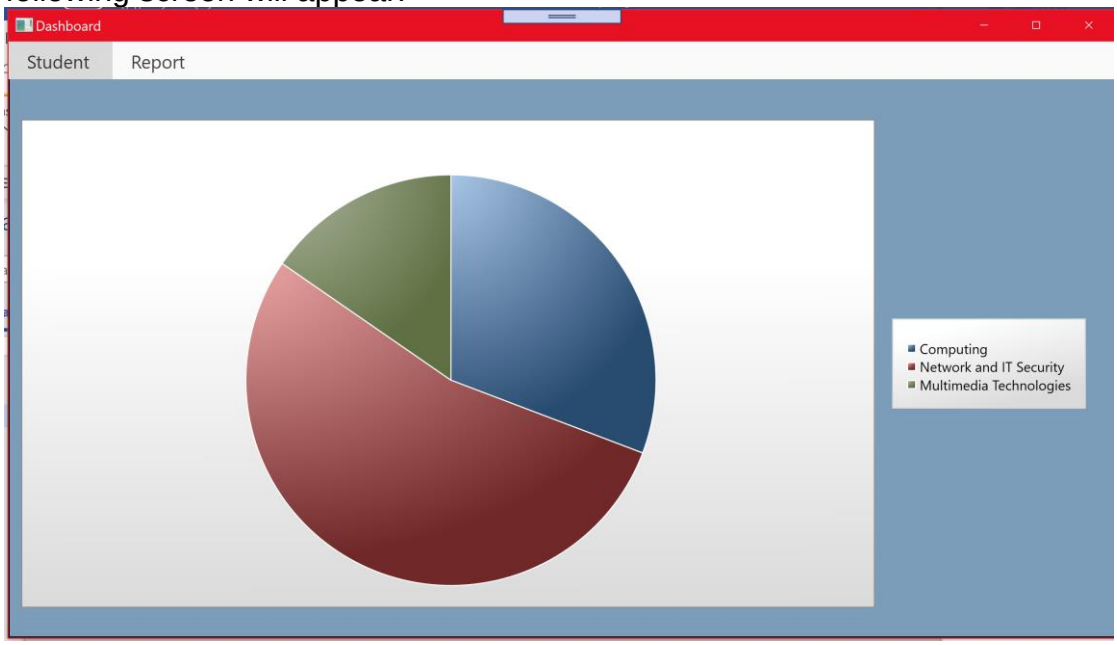

Figure 10: Chart Screen

3. Flowchart for Reports

3.1 Enrollment Report Chart

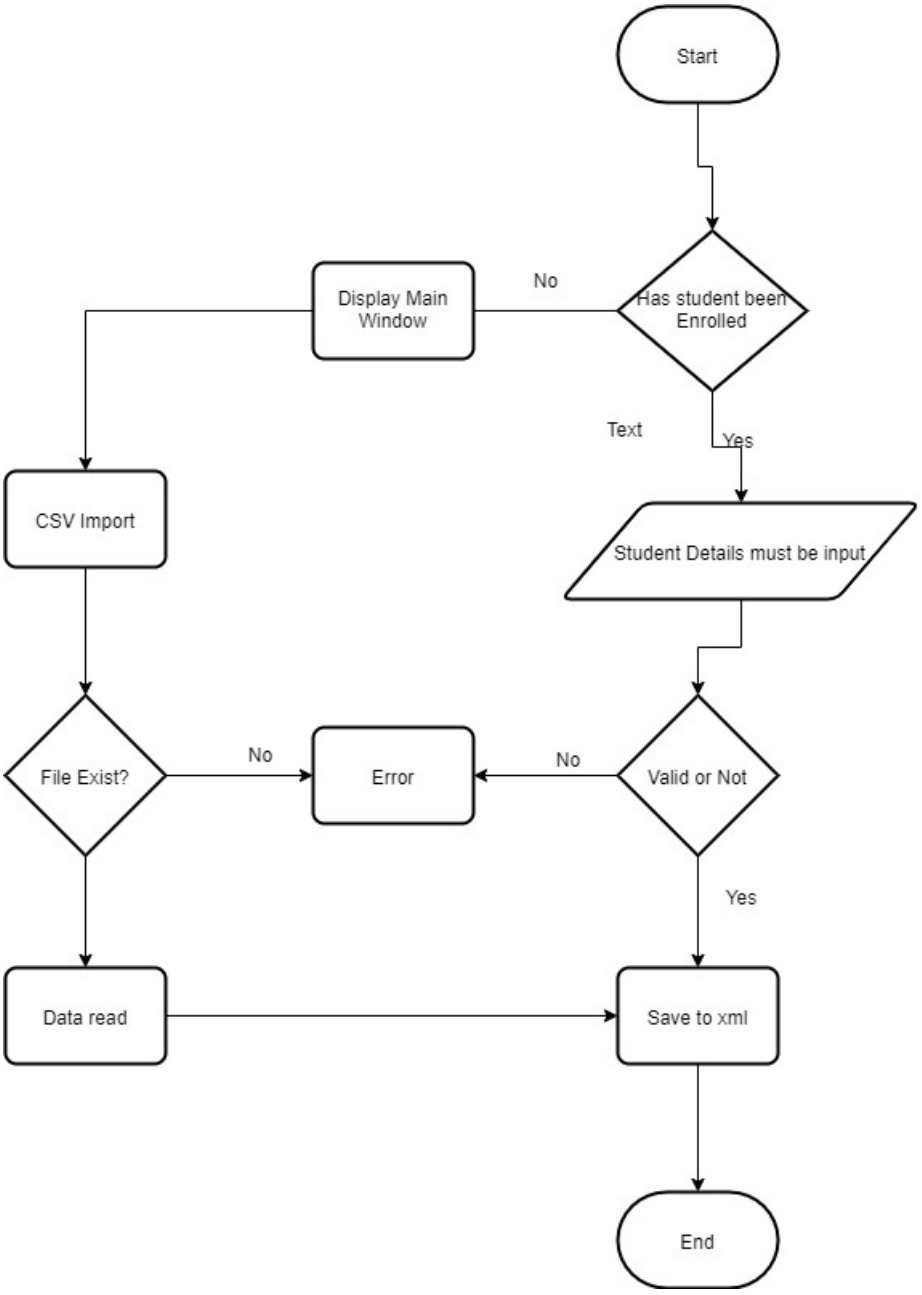

Figure 11: Enrollment Report

3.2 Daily Enrollment Report Chart

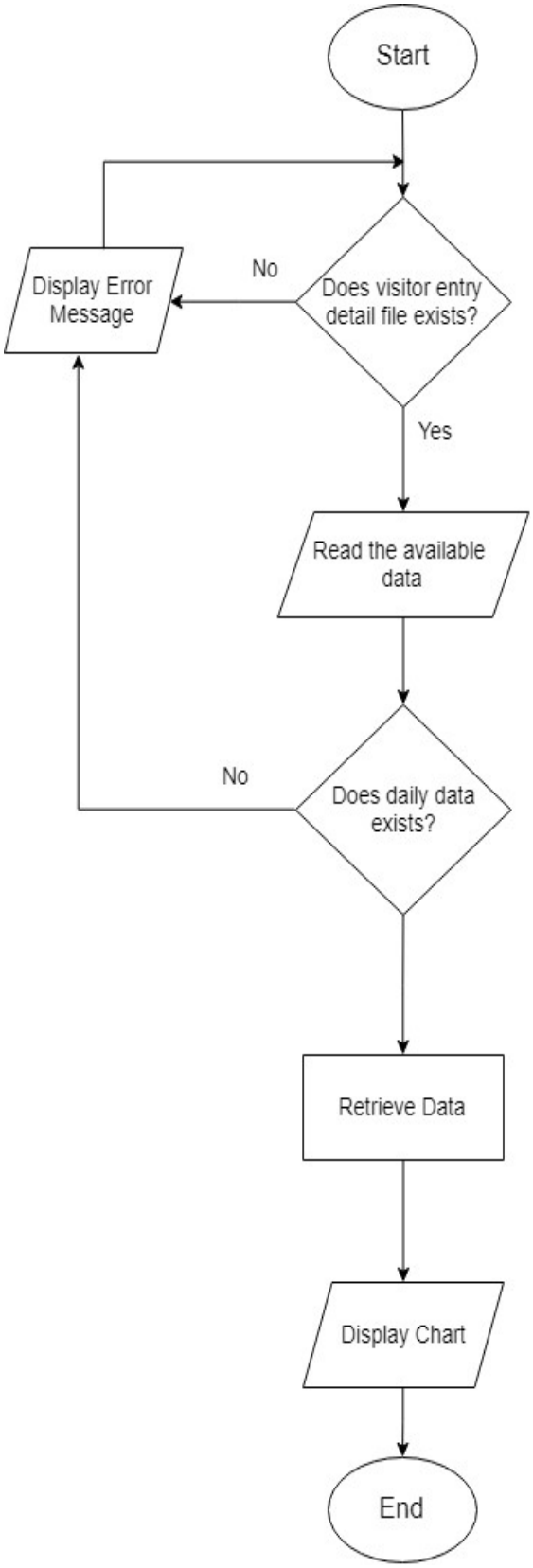

Figure 12: Daily Report Flow Chart

3.3 Weekly Report

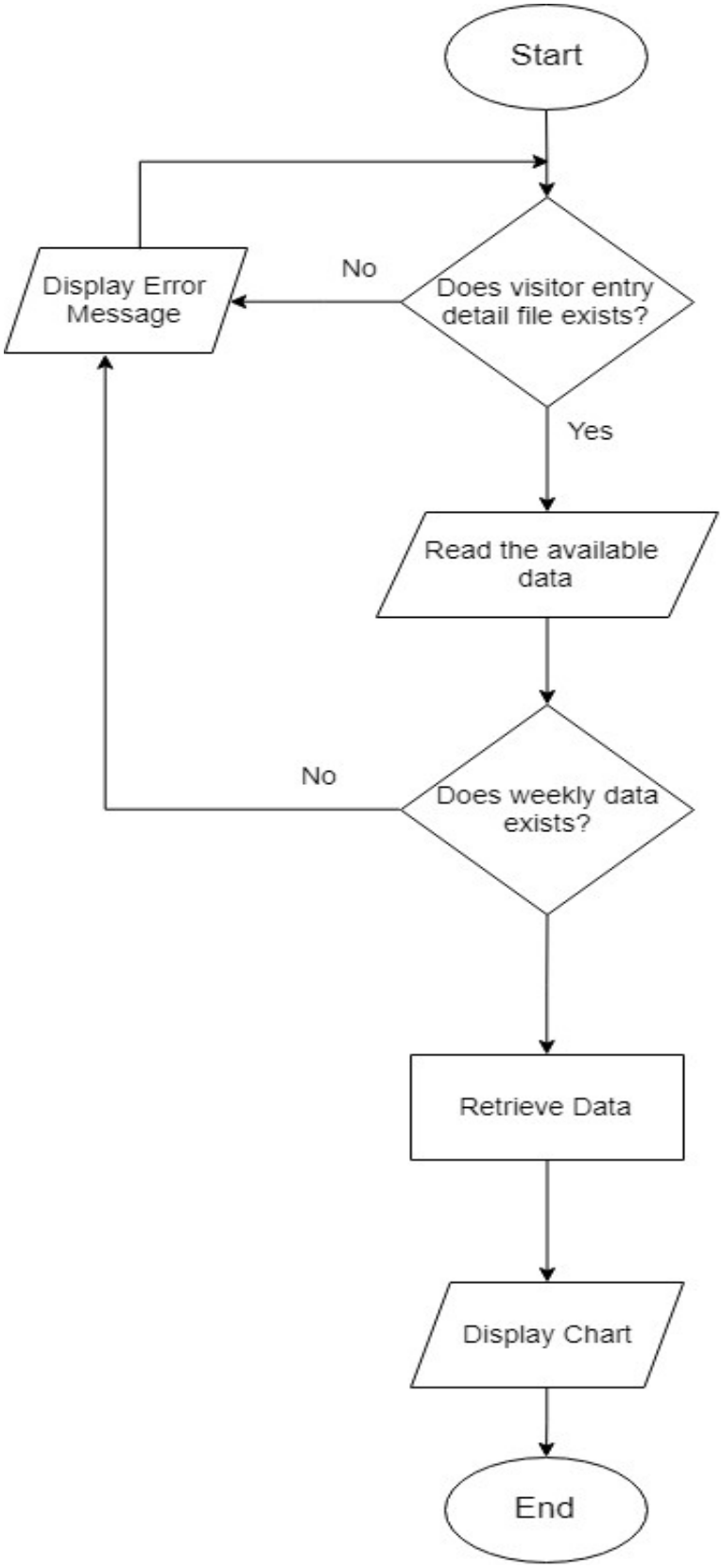

Figure 13: Weekly Report Flow Chart

4. System Architecture

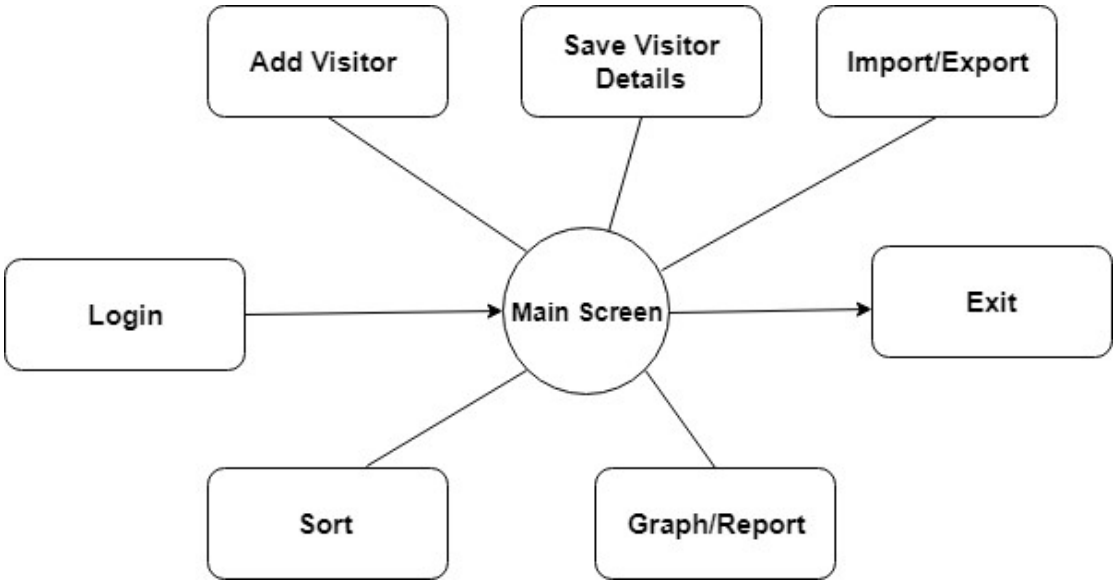

Figure 14: Architecture Diagram

5. Class Diagram:

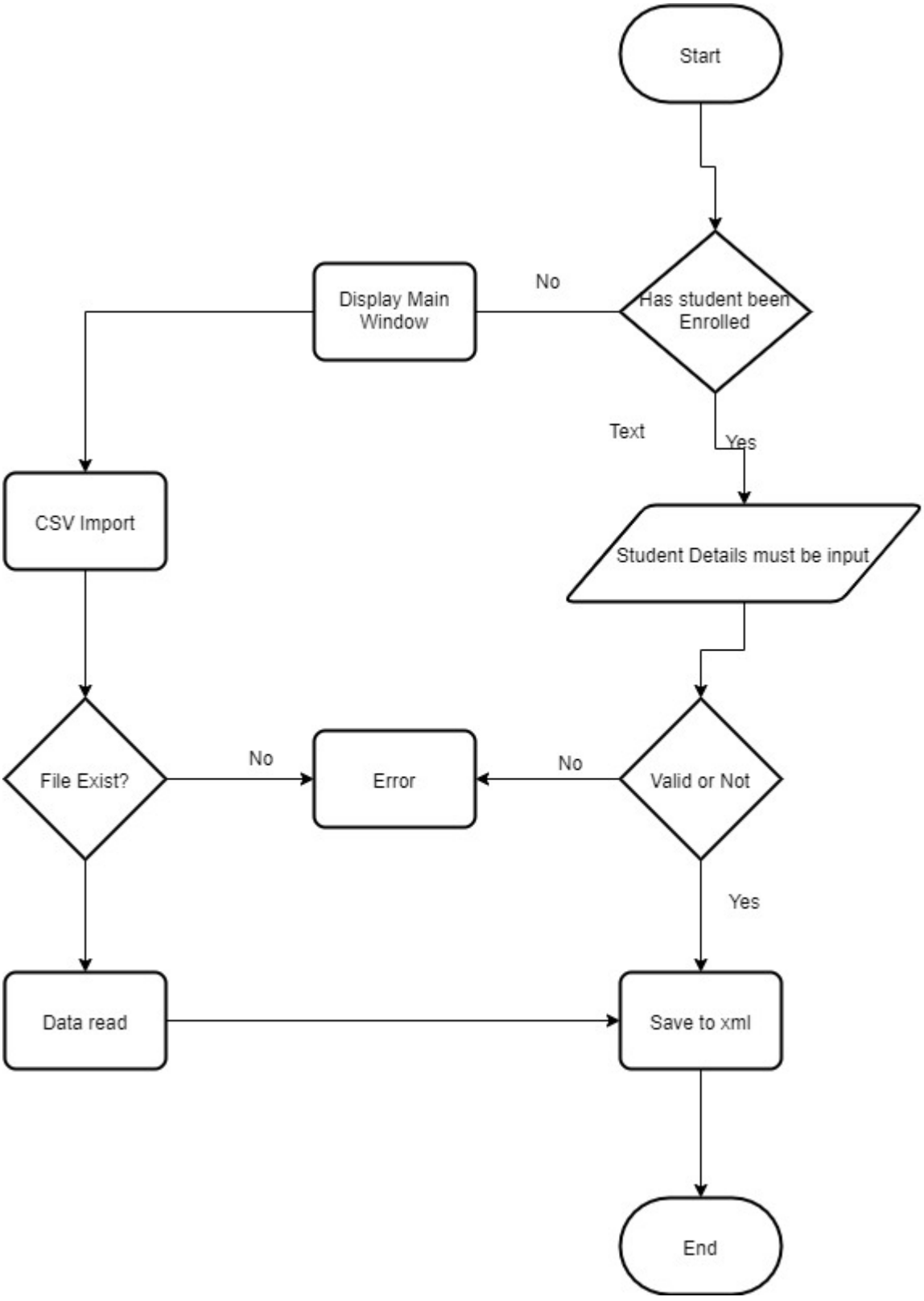

Figure 15: Class Diagram

6. Algorithms of Reports

6.1 Enrollment

Steps:

1. Start
2. Login In The System
    a. If Login Fails
        i. Show Error Message
    b. Else
        i. System login
        ii. Show Enrollment Sheet
        iii. Enter Student Details
        iv. Enroll Student
3. Add Data In Sheet
4. Exit System

6.2 Daily Report

Steps:

1. Start
2. Check whether the visitor entry data file exists or not.
3. If it doesn't exists, display error message and restart
4. If exists, read the available data
5. Check whether there is visitor entry data of the particular day or not
6. If data doesn't exist, display error message and restart
7. If data found, retrieve the data
8. Display the data in the Bar chart
9. Stop

6.3 Weekly Report

Steps:

Start

1. Check whether the visitor entry data file exists or not.
2. If it doesn't exists, display error message and restart
3. If exists, read the available data
4. Check whether there is visitor entry data or not
5. If data doesn't exist, display error message and restart
6. If data found, retrieve the data
7. Display the data in the Bar chart

8. Stop

7. Sorting Algorithm

The sorting Algorithm that I used in the Student System is bubble sorting algorithm. Bubble Sort is a easy set of rules that is used to sort a given set of n factors supplied in shape of an array with n number of elements. Bubble Sort compares all the detail one by way of one and type them based on their values.

If the given array has to be taken care of in ascending order, then bubble sort will begin with the aid of comparing the first element of the array with the second detail, if the first detail is greater than the second one element, it's going to swap each the factors, and then pass on to compare the second and the third detail, and so on. If we've got total n elements, then we want to copy this system for n-1 times. It is called bubble sort, due to the fact with each whole iteration the largest detail inside the given array, bubbles up toward the last vicinity or the highest index, just like a water bubble rises as much as the water surface. Sorting takes region with the aid of stepping through all the factors one-by means of-one and comparing it with the adjacent element and swapping them if required (www.studytonight.com/, n.d.).

8. Reflection

A Student Information System was developed with the over all knowledge using Visual Studio 2019 and the C# language. The GUI is user Friendly and user can easily navigate through all the steps with no hassle. A user can add date time and other important information in the student while enrolling the student and that information can be saved in the xml files as well as exported in the csv files. Also user can import the file in the system with the help of import function. All the saved data can be retrieved and be shown I the data grid in the new window.

Learnig C# gave a whole new dynamics in my arsenal of programming skills. Features like creating chart, sorting, adding import and export sorting of data form the grid was a new thing for me and was really helpful while doing the coursework. Furthermore, import and exporting to CSV file was new aspect for me. Overall evaluation with the great support of my friends and teacher. I had a great experience with the Application Development of the student.

9. Conclusion

The In conclusion, this system has been one of the best learning tool to create a system where we can keep the proper track of student report and display it according to the desired input. In the end we were able to learn how to add, clear and show the weekly report of the student. We also managed to provide the chart and show it in more desired way. This kind of project helped us to face any kind of problem that can be faced during the future development and also we learnt to tackle the problems that can be faced during the system development. This helped us to know more about C# and management system and with the help of this we can now be able to develop similar srt of programs in the near future. Also I believe that with the help of such

project in the market and current scenario, education system can take a lots of benefits from it in a practical life.

10. References

www.studytonight.com/, n.d. *StudyTonight.* [Online]
Available at: https://www.studytonight.com/data-structures/bubble-sort
[Accessed 1 Jan 2020].