DON BOSCO INSTITUTE OF TECHNOLOGY

Skill Lab: C++ and Java Programming
MINI PROJECT REPORT

On

"STUDENT MANAGEMENT SYSTEM"
2021-22

Submitted By:

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Under the guidance of
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Mini Project Title **:** Student Management System

Institute Name **:** Don Bosco Institute of Technology.

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Department **:** Electronics and Telecommunication

Class **:** Second Year (Sem 3)

Project Group Members :

	Names of students	**Roll No.**
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Date of Submission **: 10|12|2021**

Guide : Ms. Deepali Kayande

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CHAPTER 1

INTRODUCTION

1.1 Overview

C++, as we all know is an extension to C language and was developed by Bjarne stroustrup at bell labs. C++ is an intermediate level language, as it comprises a confirmation of both high level and low level language features.

C++ introduces Object-Oriented Programming, not present in C. Like other things, C++ supports the four primary features of OOP: encapsulation , polymorphism, abstraction, and inheritance.

A function is a minimum requirement for a C++ program to run.

1.2Project

Our project is based on Student Management System using File Handling.

1.3The project contains the following scenarios :

- **Getting student details** : Get data from user and add a student data to the list of students.
- **Read data from file** : We can read the input data from the file.
- **Search data from file** : We can search the data from the file as per our requirement.
- **Delete data from the file** : We can delete the data the data if not required.
- **Modify data in file** : We can modify the data as per our convenience.

1.4 Following Header Filed have been used :

#include<iostream>

- It is used as a stream of Input and Output using cin and cout.

#include<fstream>

- It represents both output Stream and input Stream. So it can read from files and write to files.

#include <iomanip>

-It is used to set basefield flag. It is used to set fill character. It is used to set decimal precision. It is used to set field width.

#include <stdlib.h>

- It is of the general purpose standard header which includes functions of Dynamic Memory allocation and other Standard Functions.

CHAPTER 2

PROBLEM DEFINITION

The technological development and impact of computers and internet have been increased over time. And almost every task we do today is being run through computers.

However, the process of student management system is performed manually sometimes.
So, this project aims at creating student management system, which will help in reducing time, effort and improving security.

This project results in the development of Student Management System using File Handling., which is developed using C++ programming language.

CHAPTER 3
IMPLEMENTATION

```
 // CODE of our mini project on student management system



#include <iostream>
#include <fstream>
#include <iomanip>
#include <stdlib.h>

using namespace std;

class Student
{
        int admno;
        char name[20];
        char gender;
        int std;
        float marks;
        float percentage;

public:
        void getData();
        void showData();
        int getAdmno() { return admno; }
} s;

void Student::getData()
{
        cout << "\n\nEnter Student Details.....\n";
        cout << "Enter Admission No.     : ";
        cin >> admno;
        cout << "Enter Full Name         : ";
        cin.ignore();
        cin.getline(name, 20);
        cout << "Enter Gender (M/F)      : ";
        cin >> gender;
        cout << "Enter Standard          : ";
        cin >> std;
        cout << "Enter Marks (out of 500): ";
        cin >> marks;
        cout << endl;
        percentage = marks * 100.0 / 500.00;
}

void Student::showData()
{
```

```
	cout << "\n\n.......Student Details......\n";
	cout << "Admission No.     : " << admno << endl;
	cout << "Full Name         : " << name << endl;
	cout << "Gender            : " << gender << endl;
	cout << "Standard          : " << std << endl;
	cout << "Marks (out of 500): " << marks << endl;
	cout << "Percentage        : " << percentage << endl;
	cout << endl;
}

void addData()
{
	ofstream fout;
	fout.open("Students.dat", ios::binary | ios::out | ios::app);
	s.getData();
	fout.write((char *)&s, sizeof(s));
	fout.close();
	cout << "\n\nData Successfully Saved to File....\n";
}

void displayData()
{
	ifstream fin;
	fin.open("Students.dat", ios::in | ios::binary);
	while (fin.read((char *)&s, sizeof(s)))
	{
		s.showData();
	}
	fin.close();
	cout << "\n\nData Reading from File Successfully Done....\n";
}

void searchData()
{
	int n, flag = 0;
	ifstream fin;
	fin.open("Students.dat", ios::in | ios::binary);
	cout << "Enter Admission Number you want to search : ";
	cin >> n;

	while (fin.read((char *)&s, sizeof(s)))
	{
		if (n == s.getAdmno())
		{
			cout << "The Details of Admission No. " << n << " shown herewith:\n";
			s.showData();
			flag++;
		}
	}
	fin.close();
	if (flag == 0)
		cout << "The Admission No. " << n << " not found....\n\n";
```

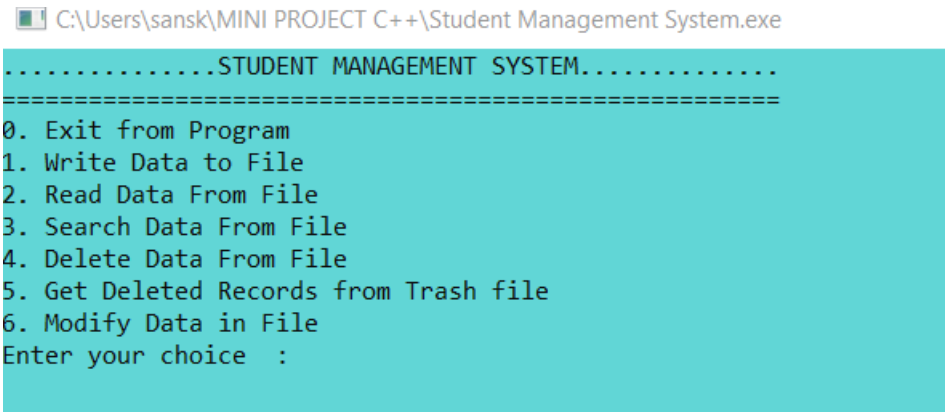
```
	cout << "\n\nData Reading from File Successfully Done....\n";
}

void deleteData()
{
	int n, flag = 0;
	ifstream fin;
	ofstream fout, tout;

	fin.open("Students.dat", ios::in | ios::binary);
	fout.open("TempStud.dat", ios::out | ios::app | ios::binary);
	tout.open("TrashStud.dat", ios::out | ios::app | ios::binary);

	cout << "Enter Admission Number you want to move to Trash : ";
	cin >> n;

	while (fin.read((char *)&s, sizeof(s)))
	{
		if (n == s.getAdmno())
		{
			cout << "The Following Admission No. " << n << " has been moved to
Trash:\n";
			s.showData();
			tout.write((char *)&s, sizeof(s));
			flag++;
		}
		else
		{
			fout.write((char *)&s, sizeof(s));
		}
	}
	fout.close();
	tout.close();
	fin.close();
	if (flag == 0)
		cout << "The Admission No. " << n << " not found....\n\n";
	remove("Students.dat");
	rename("tempStud.dat", "Students.dat");
}

void getTrash()
{
	ifstream fin;
	fin.open("TrashStud.dat", ios::in | ios::binary);
	while (fin.read((char *)&s, sizeof(s)))
	{
		s.showData();
	}
	fin.close();
	cout << "\n\nData Reading from Trash File Successfully Done....\n";
}
```

```
void modifyData()
{
	int n, flag = 0, pos;
	fstream fio;

	fio.open("Students.dat", ios::in | ios::out | ios::binary);

	cout << "Enter Admission Number you want to Modify : ";
	cin >> n;

	while (fio.read((char *)&s, sizeof(s)))
	{
		pos = fio.tellg();
		if (n == s.getAdmno())
		{
			cout << "The Following Admission No. " << n << " will be modified with
new data:\n";
			s.showData();
			cout << "\n\nNow Enter the New Details....\n";
			s.getData();
			fio.seekg(pos - sizeof(s));
			fio.write((char *)&s, sizeof(s));
			flag++;
		}
	}
	fio.close();

	if (flag == 0)
		cout << "The Admission No. " << n << " not found....\n\n";
}

void project()
{
	int ch;
	do
	{
		system("cls");
		cout << ".............STUDENT MANAGEMENT SYSTEM.............\n";
		cout <<
"=====================================================\n";
		cout << "0. Exit from Program\n";
		cout << "1. Write Data to File\n";
		cout << "2. Read Data From File\n";
		cout << "3. Search Data From File\n";
		cout << "4. Delete Data From File\n";
		cout << "5. Get Deleted Records from Trash file\n";
		cout << "6. Modify Data in File\n";
		cout << "Enter your choice  : ";
		cin >> ch;
		system("cls");
		switch (ch)
		{
```

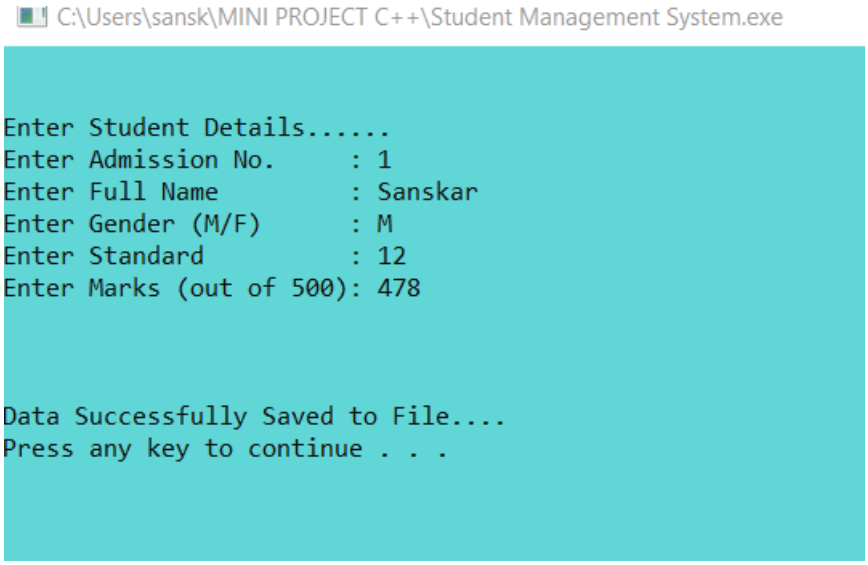
```
                case 1:
                        addData();
                        break;
                case 2:
                        displayData();
                        break;
                case 3:
                        searchData();
                        break;
                case 4:
                        deleteData();
                        break;
                case 5:
                        getTrash();
                        break;
                case 6:
                        modifyData();
                        break;
                }
                system("pause");
        } while (ch);
}

int main()
{
        system("color B0");
        project();
}
```

CHAPTER 4
RESULT SNAP SHOTS

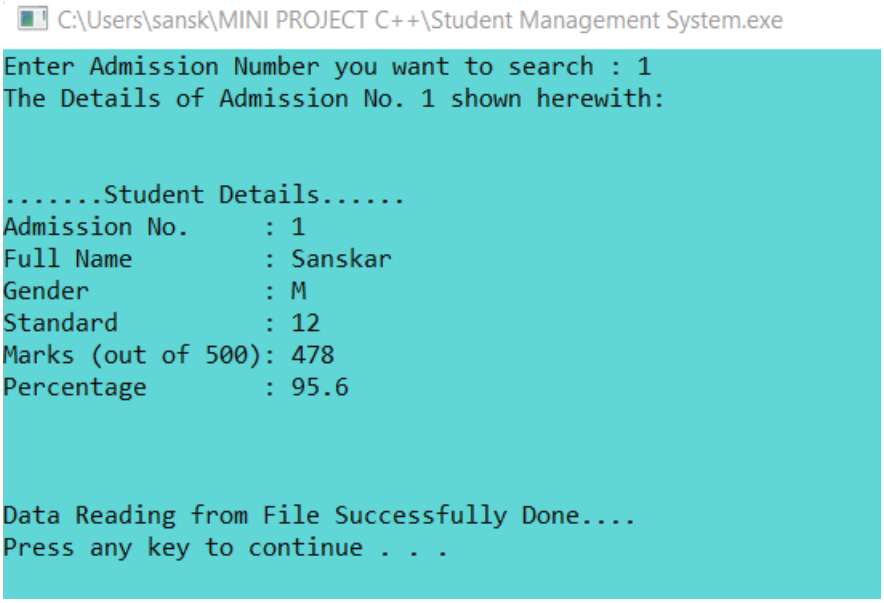
WINDOW



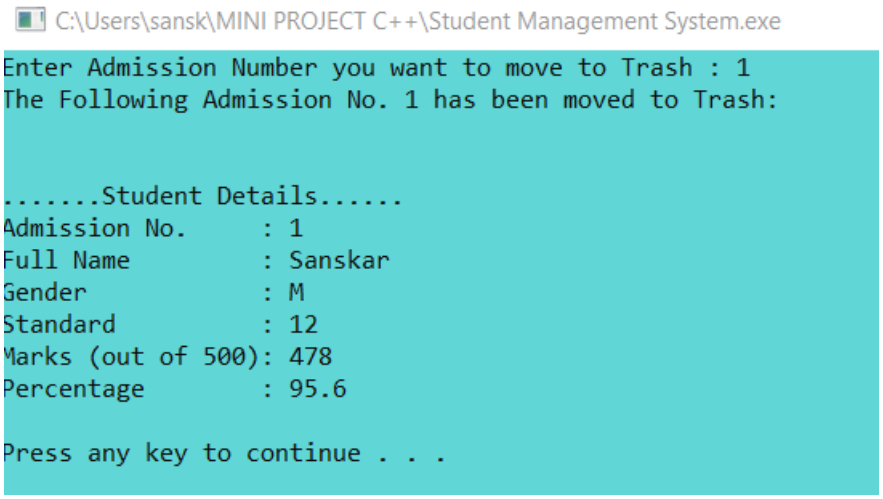
ENTER DETAILS



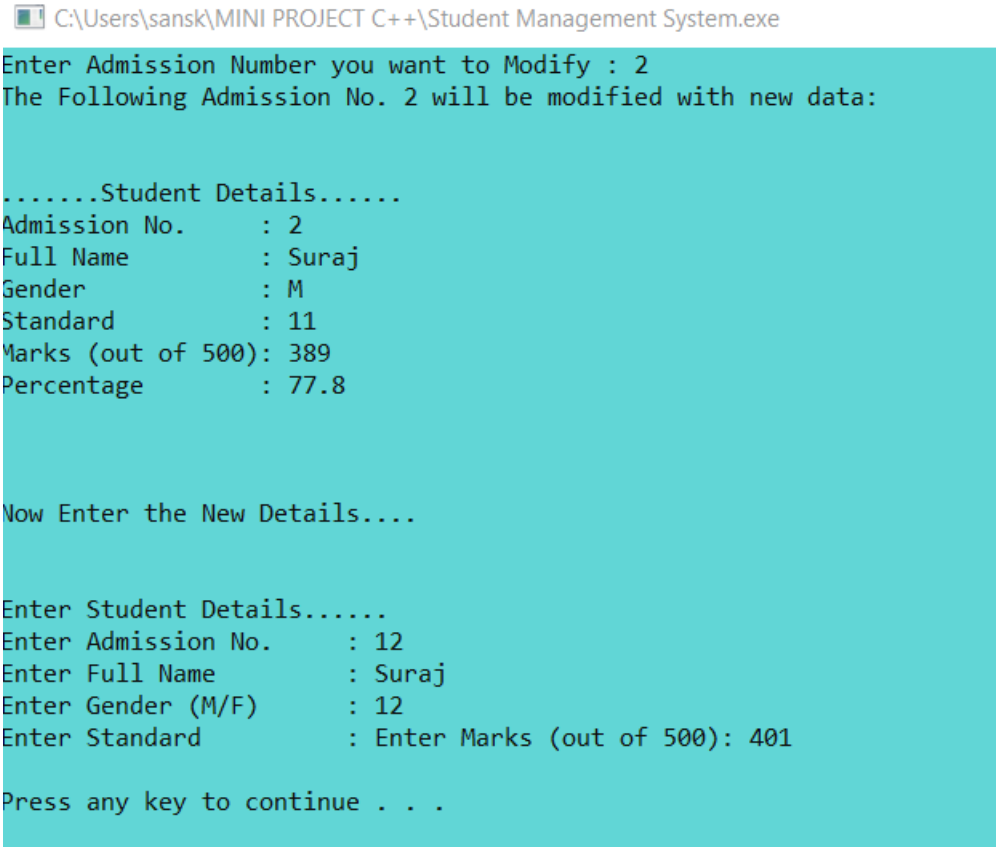
SEARCH



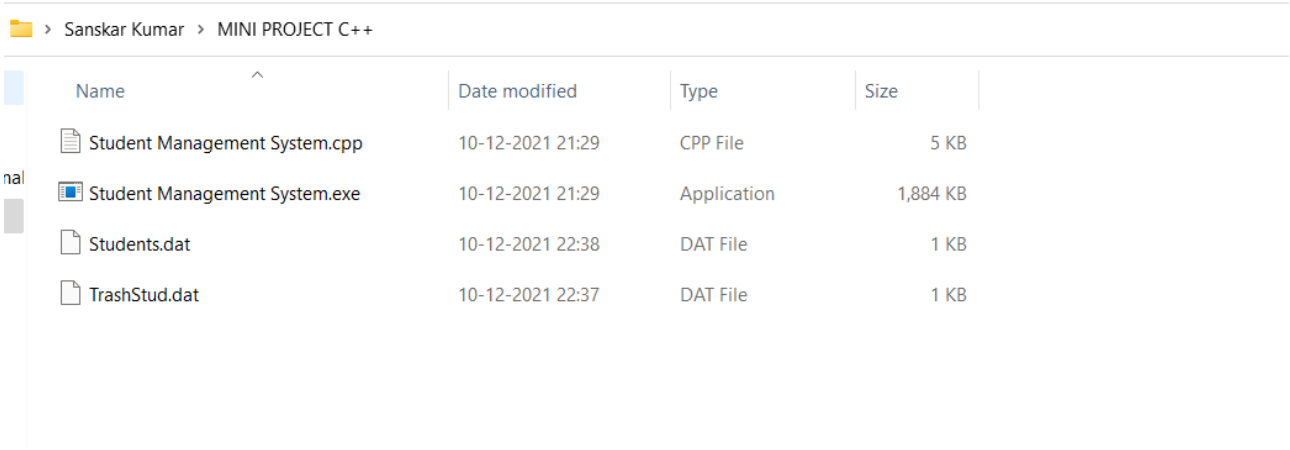
MOVED TO TRASH



MODIFICATION PROCESS



STORING ENTERED DATA



CHAPTER 5
CONCLUSION

- The project Student Management System has been computed successfully.
- It is user friendly and has required options that can be utilized by the user to perform the desired operations.
- Main focus of this project is to lessen human effort and encourage efficient record keeping.
- The code is developed using C++ language.
- This project helps to store all the student data precisely and securely in the system .
- This was an effort to develop simple student management system .

CHAPTER 6
REFERENCES

https://www.tutorialspoint.com/cplusplus/index.htm

https://www.geeksforgeeks.org/introduction-to-c-programming-language/

https://www.youtube.com/watch?v=GjzyCUqDMoA

THANKYOU !