SCHOOL TRANSPORT MANAGEMENT SYSTEM

PROJECT ON C++ PROGRAMMING

SUBMITTED BY

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INTRODUCTION

The “School Transport and Management System” aims at reducing the consumption of time during maintaining the records of transport management system. Separate divisions are provided to independently maintain the records of students and faculties availing the facilities as well as the routes and stops, etc.

OBJECTIVE

This project will serve the following objectives:

1. Add and maintain records of students/faculties availing facility of transportation.
2. Add and maintain description of routes and stops.
3. Easy operation for the operator of the system.
4. Provides a convenient solution to the manual counterpart of maintaining records.
5. It can be used to manage the data of all type of transportation systems as well supporting both stand alone and network environment.

PROBLEM OF EXISTING SYSTEM

Today all the work at the time of taking transport services of the students is done manually by ink and paper, which is very slow and effort intensive. Since the number of students grows with each coming sessions, it becomes a necessary need to implement a solution to maintain such queries in an optimized and efficient way.
Since the management faces difficulty in maintaining such records of students and the provided facilities, it is required to design a digital solution to speed up the process and make it effective. It also provides a solution to have an interaction between the management and persons availing the facilities.

CHARACTERISTICS OF PROPOSED SYSTEM

The proposed system provides the solution to the existing problem in a much efficient and automated way. This system allows a user availing the transportation facility whether student or a faculty (explicitly categorized) to get registered and have a seat reserved for them at instant time.
Every user has their own personal account to login into and view their routes of travel, their pending dues and any announcement done by the management.
By developing the system, we can attain the following facilities:

1. Easy to handle and feasible.
2. Easy to operate.
3. Cost reduction
4. Fast and convenient.

MODULE DESCRIPTION

1. **Registration Module:**
   This module allows new users to register into the system and have their personalized account created.
   Each user gets an auto-generated username along with the password of their choice to access the system in future course. The module contains the following functions:
   a. notice() , to view current notices
   b. instructionform(), to inform registering users of the terms and conditions of availing transport facilities.
   c. registration_form(), that allows users to fill their details in a formatted form.
   d. confirmform(), that previews all the details filled by user before confirmation.

2. **Student Module:**

   This module is accessible to students only. This module allows students to login into their personal accounts and access other provided options which includes viewing allotment of seats for the individual, access to contact details of staffs, complaint box, etc. This module includes the following sub modules:

   a. Login(), it allows students to login into their account.
   b. Allotmentform(), allows user to view seat allotted to them and the associated necessary details.
   c. Contactdetails(), it can be used to view contact information of staffs and person in charge .
   d. Complaints(), that allows users to file complaints regarding any irregularities found in the services provided to them.

3. **Staff Module:**

This module is accessible to registered staffs only. This module allows staffs to login to their accounts and access provided options. This module includes the following functionalities:

a. Login(), it allows staff to login into their accounts.
b. Complaintbox(), that allows staffs to view all the complaints filed regarding the transportation facilities by users and take corrective measures.
c. Notice(), that allows staffs to issue any notice regarding the academics.
d. Allotted_route(), that allows staff to view all the available routes for the transportation facility available.

CODE

```
#include<fstream>

#include<iomanip>

#include<windows.h>

#include<conio.h>

#include <ctype.h>
```

```
#include<stdlib.h>
#include<iostream>
#include<cstring>
#include<stdio.h>
using namespace std;
void gotoXY(int x, int y);                                          //custom
function for windows cursor movement
HANDLE console = GetStdHandle(STD_OUTPUT_HANDLE);
COORD CursorPosition;
int std_num,stf_num;
static int a;                                                       //declaration
of static variable to count number of registrations
class staff_login;                                                          //class
specifications
class student_login;
class register_now
{
        string name[10];
        public:
                int notice();
                int instructionsform();
                int registration_form();
                int confirmform();
                int routes();
                friend student_login;                                       //friend
function
                friend staff_login;
        //friend function
};
class student_login
```

```
{
        public:
                int login();
                int allotmentform();
                int contactdetails();
                int complaints();
                friend register_now;                                    //friend
function
};
class staff_login
{
        public:
                int login();
                int complaintbox();
                int notice();
                int allot_route();
};
int staff_login::login()                                    // Login function for staffs
{
        staff_login s1;
        int u;
        string a[100],user1,user2,user3;
        char line[80];
        system("cls");                                                          // clear
console screen
        cout<<"\n\n\n\n\n\n\n\n\n\n\n\n              USERNAME:";
        cin>>user1;
        int i=0;
        char pwd[5];
```

```
        cout<<"                 PASSWORD:";
        while(i<4)
        {
                pwd[i]=getch();
                putchar('*');
                ++i;
        }
        int j=0;
        user2=pwd;
        user3=user1+user2;
        //username+password
        ifstream fil5;
        fil5.open("login.txt",ios::out);                    //open file using ifstream
        while(fil5)
        {
                fil5.getline(line,80);
                a[j]=line;
                j++;
        }
        for(nit k=0;k<50;k++)
        {
                if(a[k]==user3)                                                 // user login
credentials authentication
                {
                while(1)
                {
                        system("cls");
                        cout<<"\n\n WELCOME TO "<<user1;
                        cout<<"\n\n\n\n\n\n\n                1.Complaint Box"<<"\n                2.Edit
notice";
```

```
                cout<<"\n               3.Routes with alloted staff";
                cout<<"\n               4.To LOGOUT";
                cout<<"\n\n\n Select your option";
                cin>>u;
                switch(u)
                {
                        case 1:system("COLOR 5F");              //calling batch
command color using function system() to change background color
                        s1.complaintbox();
                                 break;
                        case 2:system("COLOR 5F");
                        s1.notice();
                                break;
                        case 3:system("COLOR 5F");
                        s1.allot_route();
                                break;
                        case 4:system("COLOR 5F");
                        system("cls");
                                cout<<"\n\n\n\n\n\n\n\n      LOADING PLEASE
WAIT ... ";
                                Sleep(500);
                                return 0;
                        break;
                        default:return 0;
                }
        }
    }
}
    system("cls");
```

```
                cout<<"\n\n\n     SORRY,"
                        <<"\n     invalid username or password";
                Sleep(300);
        return 1;
}
int staff_login::notice()                       // Function to edit notices accessible to
staffs only
{
        system("cls");
        fstream fin;
        fin.open("program.txt",ios::out | ios::app );
        fin<<endl;                                      // writing newline character
to begin editing from a new line
        string mystr;
        getline (cin, mystr);
        cout << "Enter the Notice :";
        getline (cin, mystr);
        fin<<mystr;                                     // Updating notices list
        cout<<"\n\n\n\nEnter any key to return main menu :";
        getch();
        return 1;
}

int staff_login::complaintbox()                 //function to preview complaints filed
{
        char ch;
        system("cls");
        ifstream fin6;
        fin6.open("complaintbox.cpp",ios::in);
```

```
        while(fin6)
        {
                fin6.get(ch);
                cout<<ch;
        }
        cout<<"\n\n\n\n\n\n   Enter the any key to return to main menu";
        getch();
        return 1;
}
int staff_login::allot_route()                  // Function to preview availabe bus routes services
for passengers
{
        system("cls");
        char ch;
        ifstream fin6;
        fin6.open("ROUTES.cpp",ios::in);
        while(fin6)
        {
                fin6.get(ch);
                cout<<ch;
        }
        cout<<"\n\n\n\n\n\n   Enter the any key to return to main menu";
        getch();
        return 1;
}
int student_login::login()                              //Student login function
{
        student_login s2;
        int u;
```

```
string a[100],user1,user2,user3;
char line[80];
system("cls");
cout<<"\n\n\n\n\n\n\n\n\n\n\n\n                USERNAME:";
cin>>user1;
int i=0;char ch;
char pwd[5];
cout<<"                PASSWORD:";
while(i<4)
{
        pwd[i]=getch();
        putchar('*');
        ++i;
}
int j=0;
user2=pwd;
user3=user1+user2;                                  //username+password
ifstream fil5;
fil5.open("login.txt",ios::out);
while(fil5)
{
        fil5.getline(line,80);
        a[j]=line;
        j++;
}
        for(int k=0;k<50;k++)
        {
        if(a[k]==user3)                             //authentication for student login
```

```
{
while(1)
{
	system("cls");
	cout<<"\n\n WELCOME TO "<<user1;
	cout<<"\n\n\n\n\n\n		1.Allotment form";
	cout<<"\n		2.Complaint"<<"\n		3.Staff contact details";
	cout<<"\n		4.To LOGOUT";
	cout<<"\n\n\n\n\n\n\n Select your option: ";
	cin>>u;
	switch(u)
		{
		case 1: system("COLOR 5F");
		s2.allotmentform();
				break;
		case 2: system("COLOR 5F");
		s2.complaints();
				break;
		case 3: system("COLOR 5F");
		s2.contactdetails();
				break;
		case 4:system("cls");
				cout<<"\n\n\n\n\n\n\n\n		PLEASE WAIT ...
LOADING";
				Sleep(500);
				return 0;
		default:return 0;
		}
	}
```

```
        }
   }
                system("cls");
                cout<<"\n\n\n     SORRY,"
                        <<"\n     invalid username and password";
                Sleep(300);
        return 1;
}
int student_login::allotmentform()                      //Function for Seat allotment form for
Students
{
        system("cls");
        string j,tem[10];
        int i,d;
        cout<<"Enter your Username :";
        cin>>j;
        ifstream f8;
        f8.open("list_of_students",ios::in);            //open list of students file
        f8.seekg(0,ios::beg);                                   //seek cursor to the
beginning of the file
        while(!f8.eof())
   {
      i++;
      string temp;
      f8 >> temp;
      if(temp == j)
      {
         d=f8.tellg();
         break;
```

```
    }
        }
        int y=d+6;
        int l=0;
        while(d!=y)
        {
                d++;
                string temp;
                f8>>temp;
                tem[l]=temp;
                l++;
        }
        system("cls");
        cout.setf(ios::left,ios::adjustfield);                  //adjusting formatted position for
the cout object
        cout<<endl<<endl<<"     NAME :"<<tem[0];
        cout<<"               FATHER NAME :"<<tem[1];
        cout<<endl<<endl<<"     Ph_no:"<<tem[2];
        cout<<"               ADDRESS:"<<tem[3];
        cout<<endl<<endl<<"     Alloted seat Number:"<<tem[4];
        cout<<endl<<endl<<endl<<"\n          Total amount DUE : Rs "<<tem[5]<<"|-
"<<endl<<endl
        <<"                                     student sign";
        cout<<"Enter any key to retun back to menu :";
        getch();
        return 1;
}
int student_login::complaints()                                 //function to fill complaints for
students
{
```

```
	char ch;
	system("cls");
	ofstream fin9;
	fin9.open("complaintbox.cpp",ios::app);
	fin9<<endl;
	string mystr;
	getline (cin, mystr);
	cout << "Enter the Complaint :";
	getline (cin, mystr);
	fin9<<mystr;                                          //writing complaint to the
file
	cout<<"\n\n\nEnter any key to retun back to menu :";
	getch();
	return 1;
}
int student_login::contactdetails()                    //function to show contact information
{
	system("cls");
	cout<<"\n\n\n   Dr. Ritika Watson,\n   Associate Professor,\n   Dept. of Computer
Science, MCA,"
	<<"\n  BVICAM Room no:E-201,"<<"\n   PASCHIM VIHAR,NEW DELHI";
	cout<<"\n   Phone no: 9832333393";
	cout<<"\n\n\n\nEnter any key to retun back to menu :";
	getch();
	return 1;
}
```

```
// member functions definitions of register_now class
int register_now::instructionsform()
{
	system("cls");
	cout<<"\n	";
	char b[]="Read the following Instructions\n";
	int x=strlen(b);
	for(int i=0;i<x;i++)
	{
		Sleep(25);
		cout<<b[i];					// print character by character
(animation effect!!)
	}
	char ch;
	char a;
	ifstream ins1;
	ins1.open("instructions.txt",ios::in);
		while(ins1)
		{
			ins1.get(ch);
			cout<<ch;
		}
	cout<<"To accept the above instructions press Y : ";
	cin>>a;
		if(a == 'y' || a == 'Y')
		{
			registration_form();		//calling registration form function
		}
		else
```

```
                {
                        system("cls");
                        cout<<"\n\n\n\n\n\n          sorry,YOU ENTERED A WRONG CHOICE.....";
                        Sleep(1000);
                        system("cls");
                }
}
int register_now::registration_form()
{
        string password;
        char pwd[5];
        int i=0;
        system("cls");
        a++;                                    //static variable 'a'
        fstream fil5;
        fil5.open("login.txt",ios::out|ios::app);
        ifstream stud;
        stud.open("std.txt");
        stud>>std_num;
        stud.close();
        ifstream staff;
        staff.open("staff.txt");
        staff>>stf_num;
        cout<<"          \n";
        char b[]="REGISTRATION FORM\n";
        int x=strlen(b);
        for(int i=0;i<x;i++)
        {
```

```
        Sleep(25);
        cout<<b[i];                                     //printing character by character
}
cout<<endl<<endl<<setw(5)<<"NAME :";
cin>>name[0];
cout<<setw(40)<<"FATHER NAME :";
cin>>name[1];
cout<<endl<<setw(5)<<"Ph_no:";
cin>>name[2];
cout<<setw(35)<<"ADDRESS:";
cin>>name[3];
cout<<endl<<setw(5)<<"Select seat Number:"<<endl;
int count=1;
for(int i=0;i<10;i++)
{
        for(int j=0;j<5;j++)
        {
                if(j==3)
                {
                cout<<"   ";
                }cout<<setw(4)<<count<<"  ";
                count++;
        }
        cout<<endl;
}
cout<<" ";
for(int i=51;i<=60;i++)
{
```

```
                cout<<setw(3)<<i;
        }
        string user4;
        cout<<"\nSeat Number: ";
        cin>>name[4];
        cout<<"staff or student: ";
        cin>>user4;
        if(user4=="student")
        {
std_num++;
ofstream stud;
stud.open("std.txt",ios::trunc);
stud<<std_num;
stud.close();
        cout<<endl<<endl<<"Your username :";
        cout<<"CBIT"<<std_num;
        cout<<endl<<"PASSWORD :";
        while(i<4)
        {
                pwd[i]=getch();
                putchar('*');
                ++i;
        }
        password=pwd;
        fil5<<"CBIT"<<std_num;
        fil5<<password<<"\n";
        name[5]="1700";
        cout<<"FEE: "<<name[5];
```

```
        fil5.close();
        fstream fil2;
        fil2.open("list_of_students",ios::in | ios::out | ios::app);
        fil2.seekg(74);
        fil2<<"CBIT"<<std_num<<"         ";
        for(int i=0;i<6;i++)
        {
        fil2.setf(ios::left,ios::adjustfield);
        fil2<<setw(20)<<name[i];
        count++;
        }
        fil2<<endl;
        Sleep(500);
}
        else
        {
                if(user4=="staff")
                {
                        stf_num++;
                        ofstream staff;
                staff.open("staff.txt",ios::trunc);
                staff<<stf_num;
                staff.close();
                                cout<<endl<<endl<<"Your username :";
        cout<<"STAF"<<stf_num;
        cout<<endl<<"PASSWORD :";
        while(i<4)
        {
```

```
            pwd[i]=getch();
            putchar('*');
            ++i;
        }
        password=pwd;
        fil5<<"STAF"<<stf_num;
        fil5<<password<<"\n";
        name[5]="1700";
        cout<<"FEE: "<<name[5];
        fil5.close();
        fstream fil2;
        fil2.open("list_of_students",ios::in | ios::out | ios::app);
        fil2.seekg(74);
        fil2<<"STAF"<<stf_num<<"        ";
        for(int i=0;i<6;i++)
        {
        fil2.setf(ios::left,ios::adjustfield);
        fil2<<setw(20)<<name[i];
        count++;
        }
        fil2<<endl;
        Sleep(500);
            }
        }
        confirmform();
}
int register_now::confirmform()
{
```

```
        char ch;
        system("cls");
        char sentzz[]="         ***************CONFIRM FORM*****************";
        int x;          //special dialogue
        int size;
        size=strlen(sentzz);
   for(x=0;x<size;x++)
   {
      Sleep(50);
      cout<<sentzz[x];
   }
   cout.setf(ios::left,ios::adjustfield);
        cout<<endl<<endl<<"     NAME :"<<name[0];
        cout<<"               FATHER NAME :"<<name[1];
        cout<<endl<<endl<<"     Ph_no:"<<name[2];
        cout<<"               ADDRESS:"<<name[3];
        cout<<endl<<endl<<"     Alloted seat Number:"<<name[4];
        cout<<endl<<endl<<endl<<"          Total amount to be paid : Rs 1,700|- on or before 5th
july"<<endl
        <<endl<<endl<<"                                          signature";
        int a;
        Sleep(400);
        cout<<endl<<endl<<"    Enter any key to return back to main menu :";
        getch();
        return 1;
        }
int register_now::routes()
{
        char ch;
```

```
	system("cls");
	fstream fil4;
	fil4.open("ROUTES.cpp",ios::in);
	while(fil4)
		{
			fil4.get(ch);
			cout<<ch;
		}
}
int register_now::notice()
{
	system("cls");
	char ch;
	ifstream f2;
	f2.open("program.txt",ios::in );
		while(f2)
		{
			f2.get(ch);
			cout<<ch;
		}
	cout<<"\n\n\n Enter any to return back to menu :";
	getch();
	return 1;
}

int main()
{
	char ch;
```

```
	system("COLOR 2C");
		while(1)
	{
		system("cls");
		cout<<endl<<endl;
		fstream f2;
		f2.open("sysmbol.txt",ios::in);
		while(f2)
		{
			f2.get(ch);
			cout<<ch;
		}
	Sleep(1000);
	system("COLOR 8F");
		char a[]="		$$$$$$$$$$ SCHOOL TRANSPORT MANAGEMENT SYSTEM
$$$$$$$$$$";
		int size;
		size=strlen(a);
		for(int i=0;i<size;i++)
		{
			Sleep(25);
			cout<<a[i];
		}
		int c=1;
		cout<<endl<<endl;
		Sleep(0);
		cout<<"\n		1.REGISTER NOW \n		2.STAFF LOGIN \n
3.STUDENT LOGIN \n"
		<<"		4.NOTICES";
```

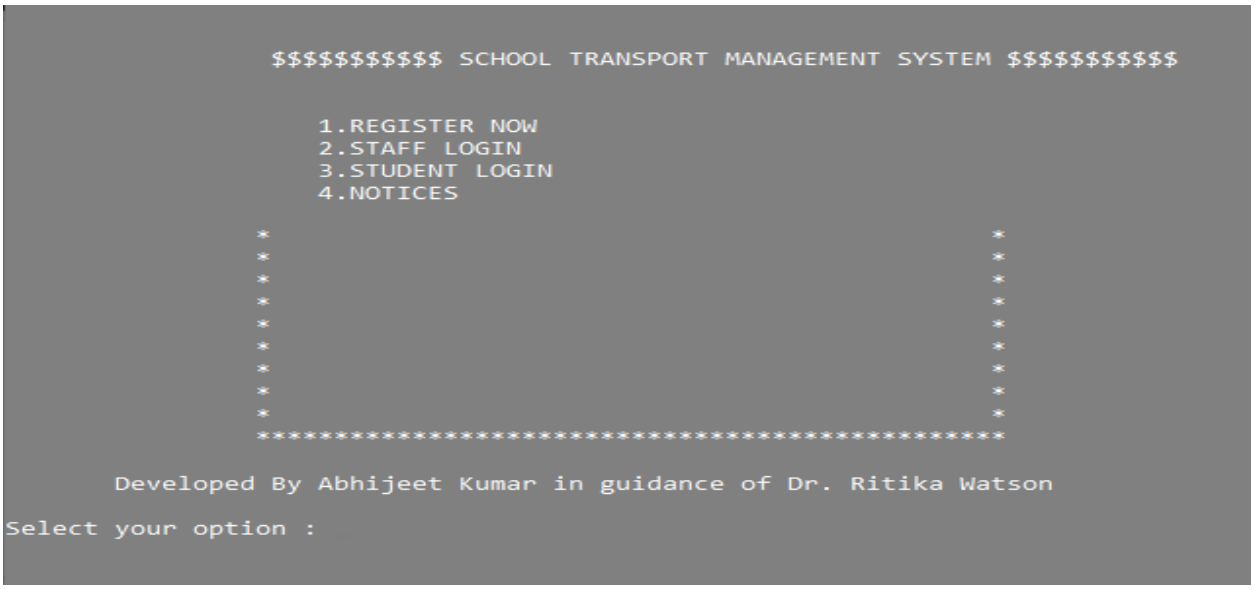
```
        for(int i=0;i<1;i++)
   {
        int x = 16;
        int y = 10;
        for (y=10;y<19;y++)
                {
         gotoXY(x,y);
         cout << "*";
         Sleep(100);
                }
                y=19;
                for (x=16;x<63;x++)
                {
         gotoXY(x,y);
         cout << "*";
         Sleep(20);
                }
                for (y=10;y<20;y++)
                {
         gotoXY(x,y);
         cout << "*";
         Sleep(100);
                }
}
        for(int i=0;i<1;i++)
   {
        int x = 1;
        int y = 20;
```

```
        for (x=40;x>1;x--)
                {
         gotoXY(x,y);
         cout << "Developed By Abhijeet Kumar in guidance of Dr. Ritika Watson";
         Sleep(100);
         gotoXY(x,y);
                  cout << "                                        ";
                    cout<<"                                    ";
                }
                cout <<endl<<"      Developed By Abhijeet Kumar in guidance of Dr. Ritika
Watson"<<endl;
        }
  register_now r1;
  staff_login s1;
  student_login s2;
  int ch;
        cout<<"\nSelect your option : ";
        cin>>ch;
        fstream f1;
        switch(ch)
        {
                case 1:system("COLOR 1F");
                                r1.instructionsform();
                                break;
                case 2:system("COLOR 1F");
                                s1.login();
                                break;
                case 3:system("COLOR 1F");
                                s2.login();
```

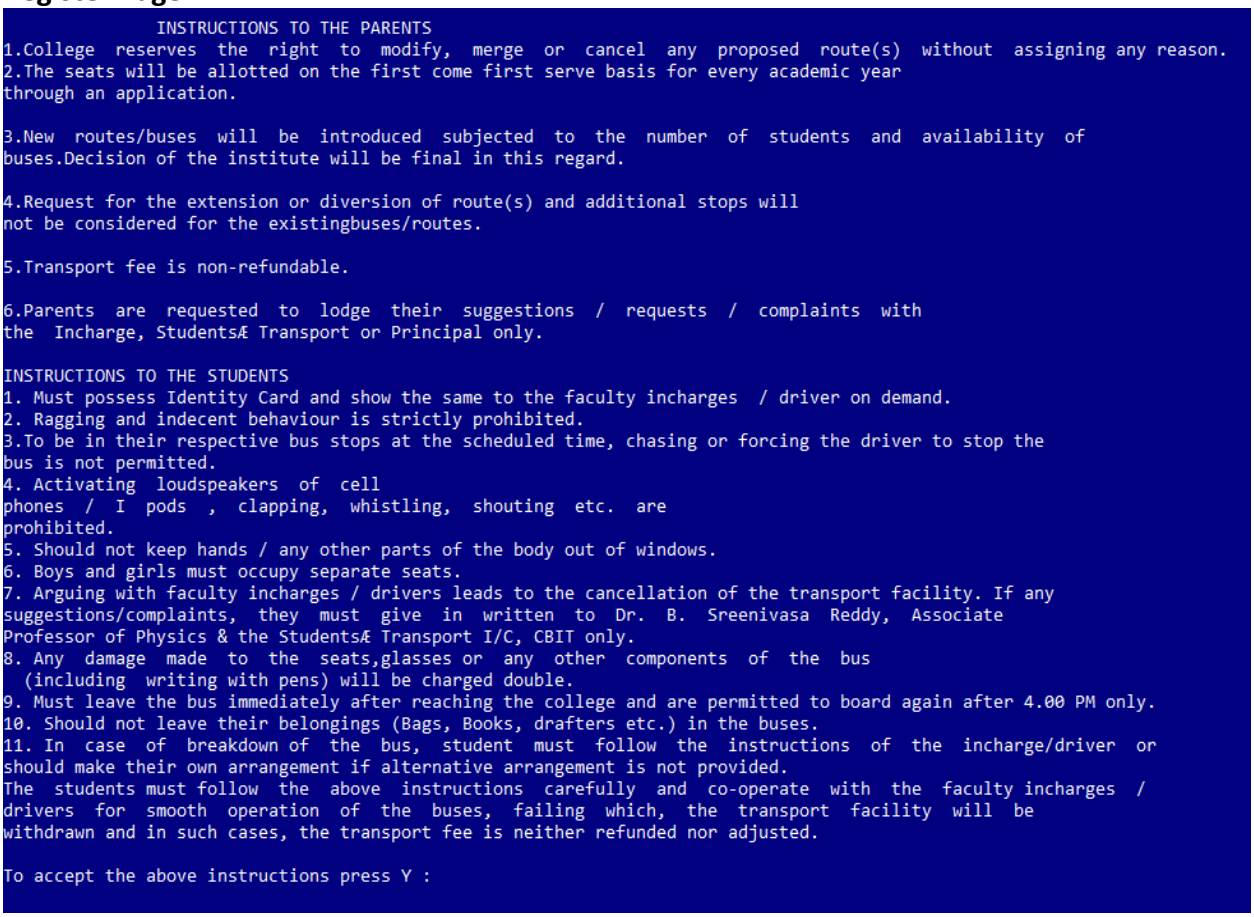
```
                    break;
            case 4:system("COLOR 1F");
                    r1.notice();
                    break;
            default:cout<<"ssssss";
                    break;
        }
}
        getch();
        return 0;
}

void gotoXY(int x, int y)
{
CursorPosition.X = x; // Locates column
CursorPosition.Y = y; // Locates Row
SetConsoleCursorPosition(console,CursorPosition); // Sets position for next thing to be printed
}
```

OUTPUT SCREENSHOTS

1. Main Menu



2. Register Page:

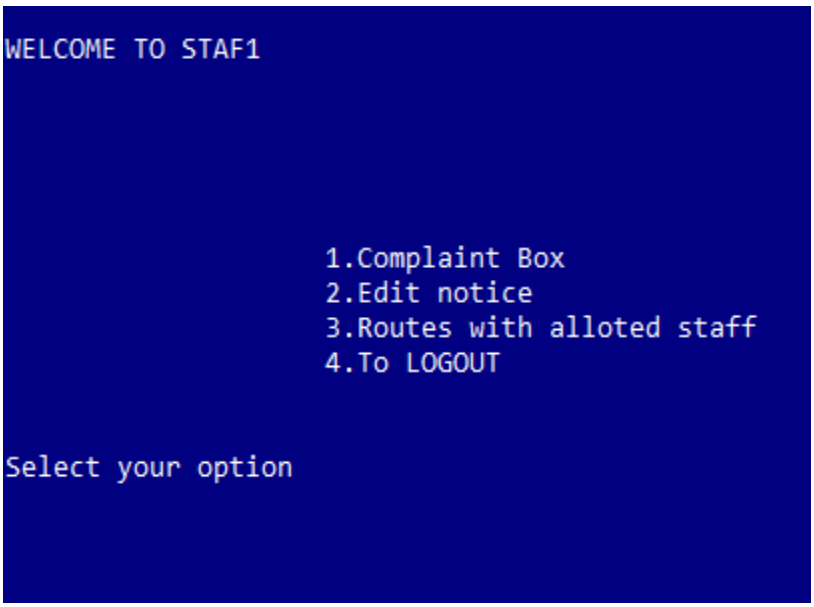


```
REGISTRATION FORM


NAME :Abhijeet
                          FATHER NAME :Murari

Ph_no:67688978
                          ADDRESS:Patna

Select seat Number:
   1     2     3        4     5
   6     7     8        9    10
  11    12    13       14    15
  16    17    18       19    20
  21    22    23       24    25
  26    27    28       29    30
  31    32    33       34    35
  36    37    38       39    40
  41    42    43       44    45
  46    47    48       49    50
  51 52 53 54 55 56 57 58 59 60
Seat Number: 8
staff or student: student


Your username :CBIT2
PASSWORD :***
```

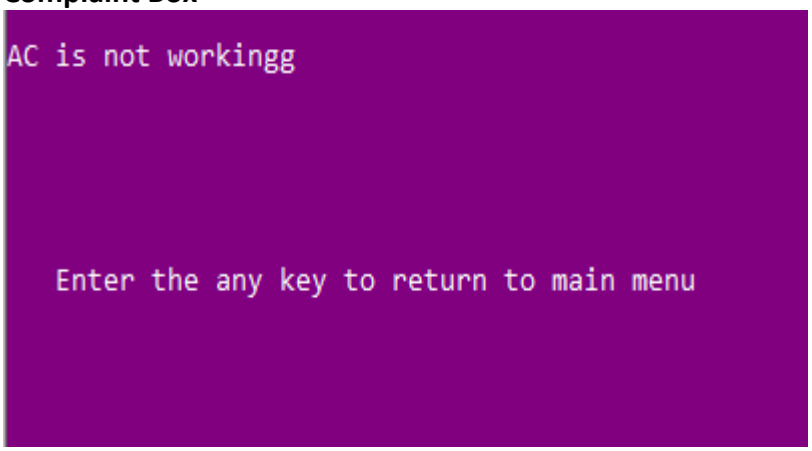
3. **Confirm Page:**

```
       ****************CONFIRM FORM*****************

  NAME :Abhijeet                   FATHER NAME :MUrari

  Ph_no:45656782                    ADDRESS:Raxaul

  Alloted seat Number:48


         Total amount to be paid : Rs 1,700|- on or before 5th july


                                                          signature

 Enter any key to return back to main menu :
```

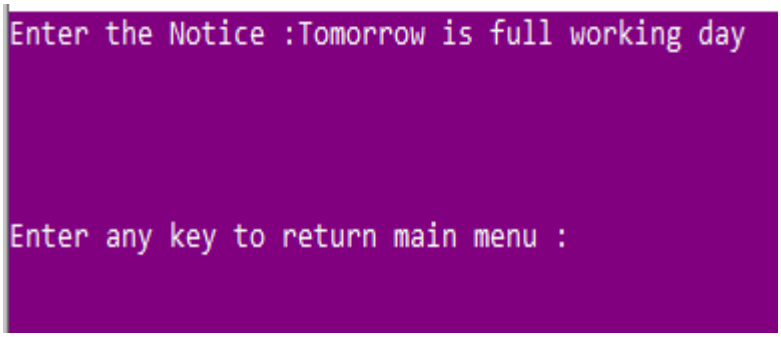
4. **Staff Module:**



Complaint Box



Edit Notice



Routes with allotted staff

```
  LIST OF JUNIOR SPECIAL BUSES*
 _____________________________________________________________________
|SNo|RtNo|    Route     |                    Via                       |
|___|____|______________|______________________________________________|
|1. |19  |UPPAL         |Uppal X Roads, Survey of India, Ramanthapur, Amberpet,|
|   |    |              |Vidyanagar, Nallakunta, Barkatpura, Narayanaguda,|
|   |    |              |Himayath Nagar, Liberty                       |
|___|____|______________|______________________________________________|
|2. |28  |EAST VIHAR    | Sangeeth, Patny, Begumpet, Care Hospital, Masabtank|
|   |    |              |A S RAO NAGAR Radhika, sainikpuri, Malkajgiri, Mettugda|
|   |    |              |Chilakalguda, Padmarao nagar, musheerabad, RTC X Roads,|
|   |    |              |Indira Park, MP nagar, musheerabad, RTC X Roads|
|___|____|______________|______________________________________________|

LIST OF ROUTES FOR SENIOR STUDENTS
 _____________________________________________________________________
|SNo  |RtNo|    Route     |                    Via                       |
|_____|____|______________|______________________________________________|
|1.   |10  |AMBERPET      | TV Studio, Amberpet, Syndicate Bank, Vidyanagar, VST,|
|     |    |              | Ashoknagar, MP, Tolichowki, Dargah, ORR.     |
|_____|____|______________|______________________________________________|
|2.   |12  |UPPAL         | Uppal Depot, Uppal X Roads, Survey of India, Habsiguda|
|     |    |              |Vidyanagar, Nallakunta, Barkatpura, Himayatnagar.|
|_____|____|______________|______________________________________________|
? Seats will be allotted on the first cum first serve basis and subjected to the availability.
* Proposed routes and management reserves the right to merge, modify or cancel any route
without any notice.
```

5. **Student Module:**

```
WELCOME TO CBIT2



                1.Allotment form
                2.Complaint
                3.Staff contact details
                4.To LOGOUT



Select your option:
```

Allotment Form

```
  NAME :Abhijeet                FATHER NAME :Murari

  Ph_no:67688978                 ADDRESS:Patna

  Alloted seat Number:8


        Total amount DUE : Rs 1700|-

                                                student signEnter any key to retun back to menu :
```

Complaint

```
Enter the Complaint :First Aid Box should be provided


Enter any key to retun back to menu :
```

Staff Contact Details

```
   Dr. Ritika Watson,
   Associate Professor,
   Dept. of Computer Science, MCA,
  BVICAM Room no:E-201,
   PASCHIM VIHAR,NEW DELHI
   Phone no: 9832333393


Enter any key to retun back to menu :
```

6. **Notices**

```
HIII tommorow is a holiday !!!
Tomorrow is half day
STUDENTS MUST BE IN PROPER UNIFORM
Tomorrow is full working dayy


 Enter any to return back to menu :
```

FUTURE SCOPE

1. Real Time seat reservation status can be implemented.
2. Print of receipt or hardcopy format can be explored.
3. The solution can be extended to work on multiple systems at once.
4. Security authentication features can be improved.
5. Additional features to facilitate operations can be inculcated.

REFERENCES

1. https://www.geeksforgeeks.org/
2. https://en.wikibooks.org/wiki/Windows_Programming/windows.h