Spring
2023

C++

Project Report

Title: University Timetable

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DEPARTMENT OF COMPUTER SYSYTEM ENGINEEERING

Submission

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Enrolment ID: 133-22-0036 Receiving Authority Name and

Comments:

RUBRICKS

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CERTIFICATE

It is certified that **MUHAMMAD FAIZAN ANJUM SHAH** a student of **BE-(CSE-II)** has carried out the necessary work of **Computer Programming** as per course of studies prevailed at the **Department of Computer Systems Engineering, Sukkur Institute of Business Administration** for **SP-2023.**

Date: 17/06/2023

Instructor's Remarks

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Acknowledgment

First of all, thanks to GOD ALMIGHTY for his showers of blessings and grace throughout my project work into a successful outcome. I would like to express my humble gratitude to our supervisor **SIR ENGR. MUHAMMAD IRFAN YOUNIS MUGHAL** (Assistant Professor at Sukkur IBA University) for providing me such an opportunity to showcase my skills and hard work through this project. He with his humble attitude, great skills and expert vison taught us all the possible methodology to carry out this project work. I would also like to thanks to my seniors for their ultimate guidance. I am extremely grateful to my parents for their sacrifice ultimate guidance and prayers for me and my future. I would burn midnight oil to make their dreams come true Insha'Allah. In the end special thanks to head of our Computer System Engineering Department **Dr. ABDUL SATTAR CHAN** for their support.

Abstract

The University Timetable is a C++ Programming language Project. With some modular programming changes, it can be used as a software application. It is a project that refers to the schedule of classes of a University. It solves the problem for many university students to search and look for their classes schedule. It helps students to search for their class schedule by days, instructor and by course. It helps students to search for their classes instantly without looking and searching their on notice board. It valuable for students and university management to handle the problems of classes schedule with ease.

Chapter I

Introduction:

This project refers to the problems faced by students to search for their classes schedule and to find class rooms. This project helps students to look for their schedule without any problem. It encourages many universities to update their Timetable students so that student can easily understand about their classes schedule especially new comers. This project displays the class schedule of students with time class room no. and venue of that class. Other salient feature of this project is that it helps students to search their classes by their subjects and by the name of their instructors and also displays classes of any day of week when asked. This saves student's times from wandering here and there in search of their class room. The main purpose of this project is to help students to search for their classes schedule with different choices.

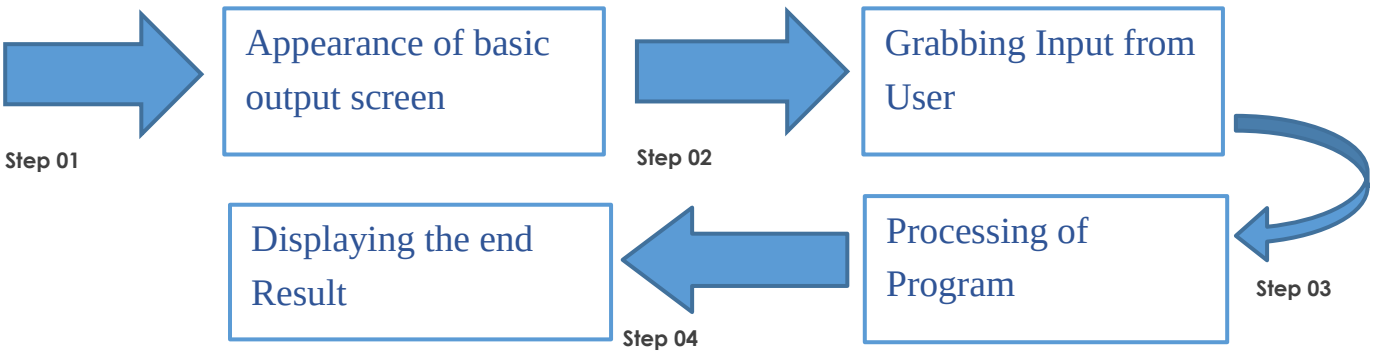
Motivation:

The motivation behind this project lies in addressing the problems and difficulties faced by students in searching and finding their classes schedules and class rooms with ease. This project urge university to

enhance their timetable managing system to solve the difficulties faced by students in a technologically advanced way.

Chapter II

Methodology:



The methodology of project includes displaying of basics output screen that displays the basic information about project and encourage user to give input for what he/she want to do after grabbing input the code will execute and display the desired result of user. This process consists of four steps for basic implementation of program to carry out the process to display required information needed by user.

Algorithm:

The algorithm of code consists of flowing steps

Step 1: Start

Step 2: Display of basic output screen

Step 03: Declare variables

Step 04: Take input from user and display guidelines as per input

Step 05: Again Take input from user

Step 06: Display Schedules as per user input

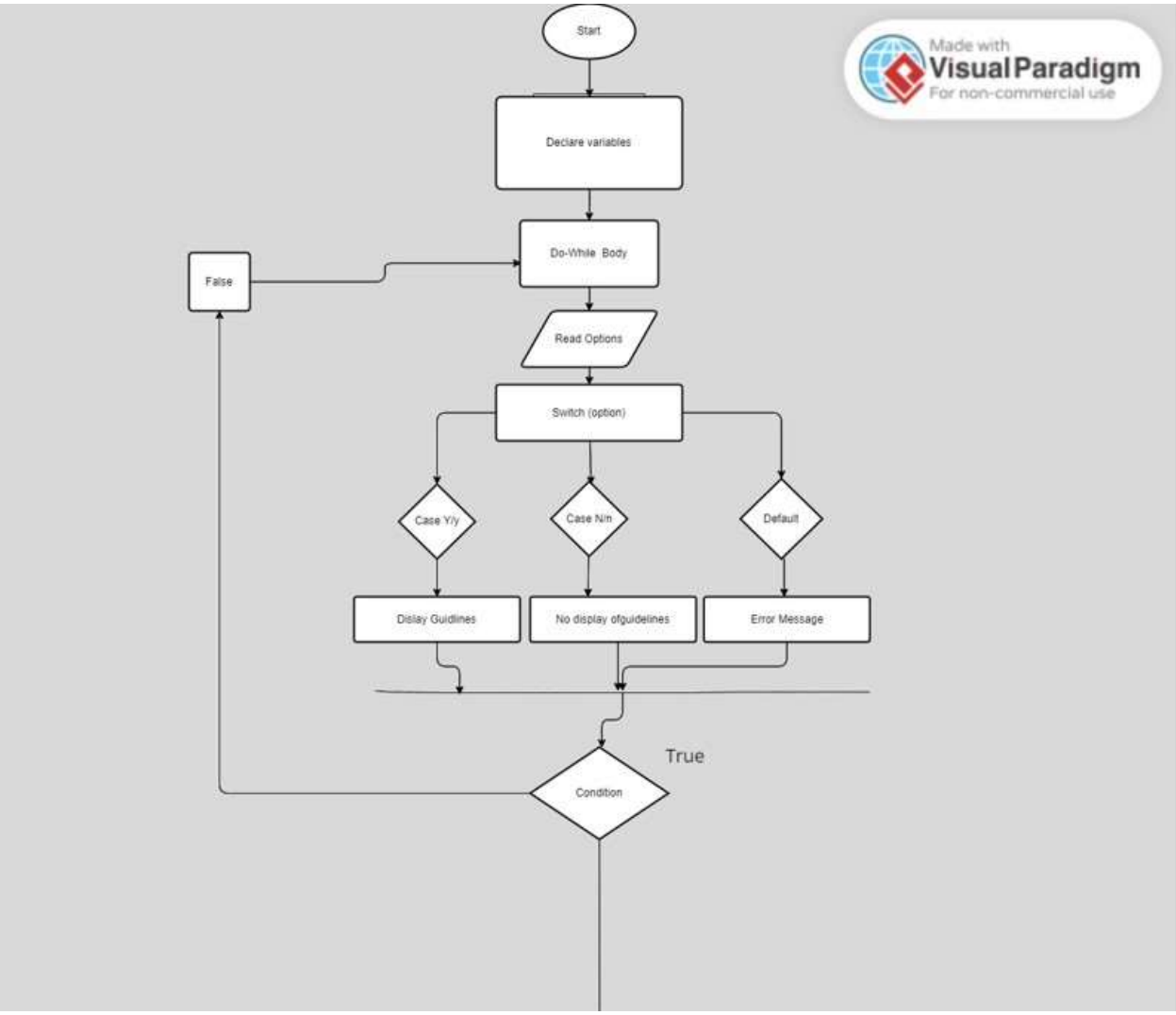
Step 07: Take input again from user in case of invalid input

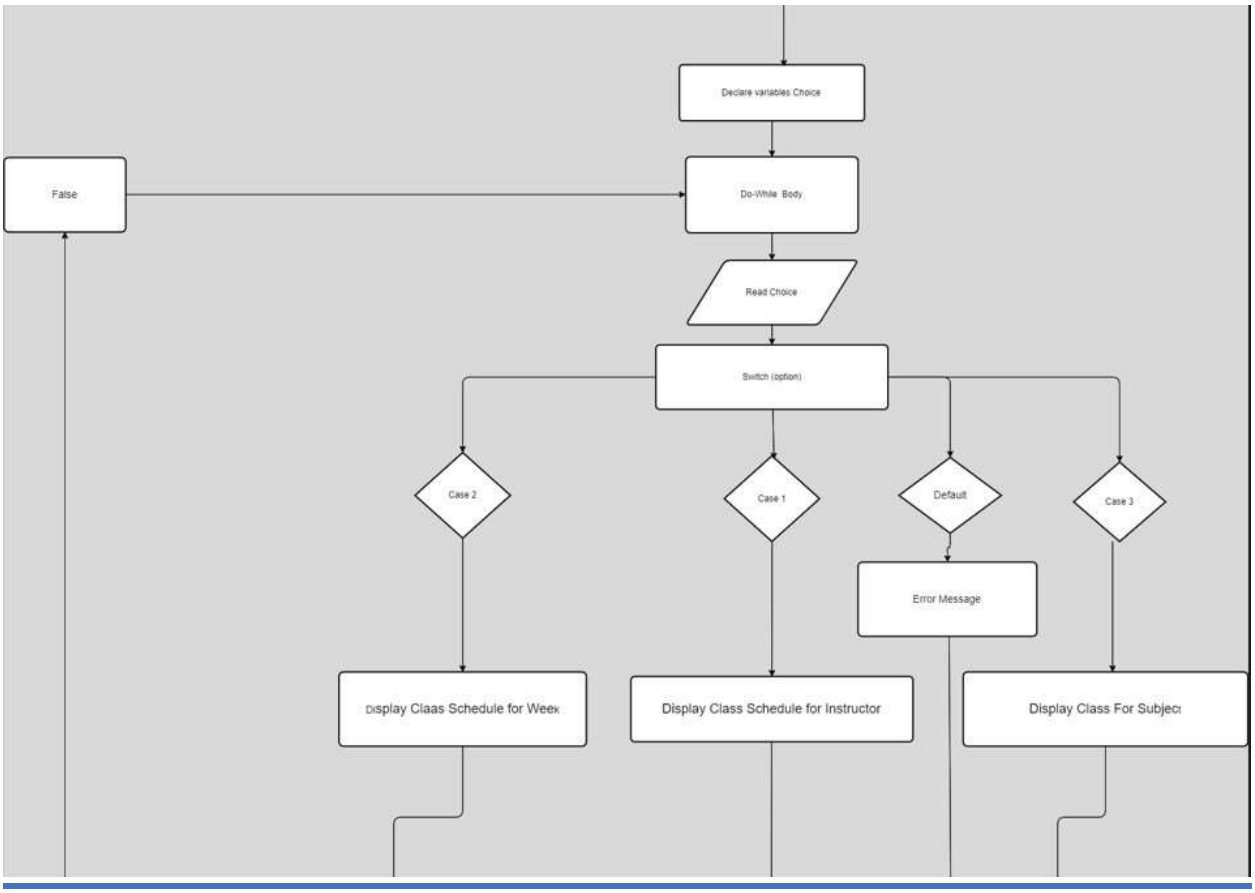
Step 08: This process continues till user input a valid input

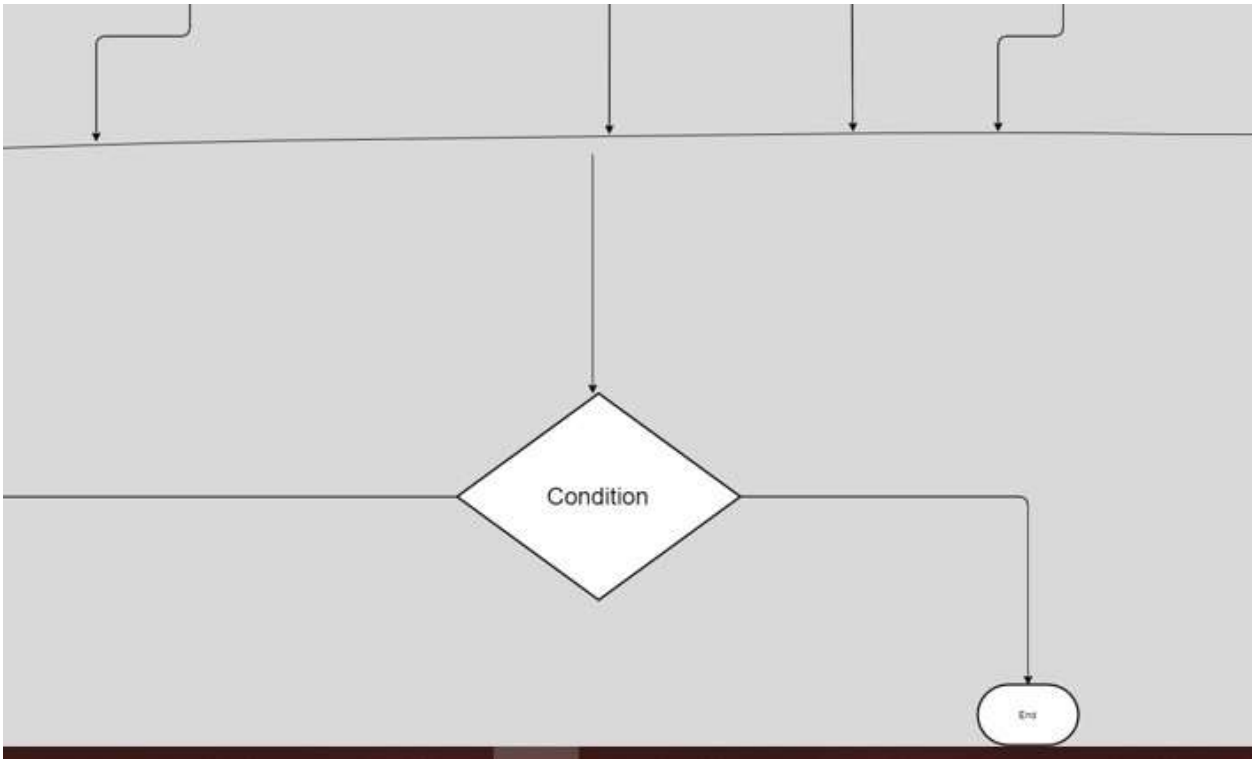
Step 09: Display Schedule as user asked

Step 10: End the Program

Flow Chart


Start
Declare variables
Do-While Body
False
Read Options
Switch (option)
Case Y/y
Case N/n
Default
Dislay Guidlines
No display ofguidelines
Error Message
True
Condition
Made with
Visual Paradigm
For non-commercial use


Declare variables Choice
False
Do-While Body
Read Choice
Switch (option)
Case 2
Case 1
Default
Case 3
Error Message
Display Claas Schedule for Week
Display Class Schedule for Instructor
Display Class For Subject


Condition
End

Code Explanation

```
1 #include <iostream>
2 #include <cstring>
3 #include<iomanip>
4 #include<limits>
05 #include"Header.h"
using namespace std;
```

First 4 are predefined header files and fifth is user defined header file which contain information of project and guidelines how to use the project and namespace std is C ++ standard

```
struct Class {
string day;
string subject;
string instructor;
string time;
string roomNo;
string blockNo;
};
```

Structure used to display Class details

```
01-void displayClassDetails(const Class classInfo) {
cout<<"* Subject: "<<classInfo.subject<<endl;
cout<<"* Instructor: "<<classInfo.instructor<<endl;
cout<<"* Time: "<<classInfo.time<<endl;
cout<<"* Room No: "<<classInfo.roomNo<<endl;
cout<<"* Block No:"<<classInfo.blockNo<<endl;
cout<<"* Day :"<<classInfo.day<<endl;
}
```

Predefine function to display class details on output Screen

```
02 -void displayScheduleForDay() {
bool condition1=false;
do{ string day;
while(cin.get()!='\n'){
continue;
}
getline(cin,day);
```

Predefine function use to display class details as per week day while(cin.get) is used to ignore buffer value in the string.

```
if(day ==
"Monday"||day=="Mon"||day=="MON"||day=="MONDAY") {

condition1=true;

cout<<"Here is the class schedule for " << day << ":" << endl;


cout<<"**************************************************"
<< endl;

cout<<"Your first Class details are as follows:" << endl;

displayClassDetails({"Electronic Devices and Circuits", "Umair
Ayaz Kamangar", "12:30 To 01:30", "307", "03"});

cout<<"\n";

cout<<"Namaz break :01:30 To 02:00 "<<endl;

bool condition2=false;

do {

cout<<"Enter the group (e.g., X, Y): \n"<<endl;

char group;

cin >>group;

switch (group) {

case 'X':

condition2=true;

cout<<"Your Second Class details are as follows:"<<endl;
```

displayClassDetails({day,"Computer Programming Lab", "Muhammad Irfan Younis", "02:00 To 5:00", "03", "01"});

break;

case 'x':

condition2=true;

cout<<"Your Second Class details are as follows:"<<endl;

displayClassDetails({day,"Computer Programming Lab", "Muhammad Irfan Younis", "02:00 To 5:00", "03", "01"});

break;

case 'Y':

condition2=true;

cout<<"Your Second Class details are as follows:"<<endl;

displayClassDetails({day,"Circuit Analysis Lab", "Engr. Irfan Ali Babar", "02:00 To 05:00", "306", "03"});

break;

case 'y':

condition2=true;

cout<<"Your Second Class details are as follows:"<<endl;

displayClassDetails({day,"Circuit Analysis Lab", "Engr. Irfan Ali Babar", "02:00 To 05:00", "306", "03"});

break;

default:

```
cout<<"Invalid group choice! Try Again"<<endl;
condition2=false;
break;
}
}while(!condition2);
}else if (day == "Tuesday"||day=="Tue"||day=="TUE"||day=="TUESDAY") {
condition1=true;
cout<<"Here is the class schedule for "<<day<<":"<<endl;

cout<<"**********************************************"<<endl;
cout<<"Your first Class details are as follows:"<<endl;
displayClassDetails({day,"Electronic Devices and Circuits", "Umair Ayaz Kamangar", "11:30 To 01:30", "508", "03"});
cout<<"\n";
cout<<"Namaz break :01:30 To 02:00 "<<endl;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Islamic Studies", "Peeral Khan", "02:00 To 04:00", "406", "03"});
cout<<"Your Third Class details are as follows:"<<endl;
```

```
displayClassDetails({day,"Circuit analysis", "Engr. Irfan Ali
Babar", "04:10 To 06:10", "407", "03"});

}

else if(day ==
"Wednesday"||day=="Wed"||day=="WED"||day=="WEDNESDAY") {

condition1=true;

cout<<"Here is the class schedule for "<<day<<":"<<endl;


cout<<"**************************************************"<
<endl;

cout<<"Your first Class details are as follows:" << endl;

displayClassDetails({day,"Linear Algebra", "Irfan Younis", "09:00
To 11:00", "406", "03"});

cout<<"\n";

cout<<"Refreshment break : 11:00 To 11:30"<<endl;

cout<<"Your Second Class details are as follows:"<<endl;

displayClassDetails({day,"Circuit analysis", "Engr. Irfan Ali
Babar", "11:30 To 12:30", "507", "03"});

cout<<"Your Second Class details are as follows:"<<endl;

displayClassDetails({day,"Computer Programming", "Irfan
Younis", "12:30 To 01:30", "03", "01"});

cout<<"\n";

cout<<"Namaz break :01:30 To 02:00 "<<endl;
```

displayClassDetails({day, "Computer Programming", "Irfan Younis", "02:00 To 04:00", "03", "01"});

}

else if (day == "Thursday"||day=="Thu"||day=="THU"||day=="THURSDAY") {

condition1=true;

cout<<"Here is the class schedule for "<<day<<":"<<endl;

cout<<"**********"<<endl;

cout<<"Your first Class details are as follows:"<<endl;

displayClassDetails({day,"Communication Skills", "Asifa Abbas", "11:30 To 01:30", "211", "02"});

cout<<"\n";

cout<<"Namaz break :01:30 To 02:00 "<<endl;

bool condition=false;

do {

cout<<"Enter the group (e.g., X, Y): \n"<<endl;

char group;

cin >>group;

switch (group) {

case 'X':

```
condition=true;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Electronice Devices and Circuits", "Umair Ayaz Kamangar", "02:00 To 05:00", "506", "03"});
break;
case 'x':
condition=true;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Electronice Devices and Circuits", "Umair Ayaz Kamangar", "02:00 To 05:00", "506", "03"});
break;
case 'Y':
condition=true;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Computer Programming Lab", "Muhammad Irfan Younis Mughal", "02:00 To 5:00", "03", "01"});
break;
case 'y':
condition=true;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Computer Programming Lab", "Muhammad Irfan Younis Mughal", "02:00 To 5:00", "03", "01"});
```

```
break;
default:
cout<<"Invalid group choice! Try Again"<<endl;
condition=false;
break;
}
}while (!condition);
}
else if (day == "Friday"||day=="Fri"||day=="FRIDAY"||day=="FRI") {
condition1=true;
cout<<"Here is the class schedule for "<<day<<":"<<endl;

cout<<"**************************************************"<
<endl;
cout<<"Your first Class details are as follows:"<<endl;
displayClassDetails({day,"Linear Algebra", "Muhammad Irfan
Younis Mughal", "09:00 To 11:00", "308", "03"});
cout<<"\n";
cout<<"Refreshment break : 11:00 To 11:30"<<endl;
displayClassDetails({day,"Communication Skills", "Asifa Abbas",
"11:30 To 01:30", "507", "03"});
cout<<"\n";
```

```
cout<<"Namaz break :01:30 To 02:00 "<<endl;
bool condition=false;
do {
cout<<"Enter the group (e.g., X, Y): \n"<<endl;
char group;
cin >>group;
switch (group) {
case 'X':
condition=true;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Electronice Devices and Circuits",
"Umair Ayaz Kamangar", "02:00 To 05:00", "506", "03"});
break;
case 'x':
condition=true;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Electronice Devices and Circuits", "Umair
Ayaz Kamangar", "02:00 To 05:00", "506", "03"});
break;
case 'Y':
condition=true;
```

```
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Circuit Analysis Lab", "Engr. Irfan Ali Babar", "02:00 To 05:00", "306", "03"});
break;
case 'y':
condition=true;
cout<<"Your Second Class details are as follows:"<<endl;
displayClassDetails({day,"Circuit Analysis Lab", "Engr. Irfan Ali Babar", "02:00 To 05:00", "306", "03"});
break;
default:
cout<<"Invalid group choice! Try Again"<<endl;
condition=false;
break;
}
}while (!condition);
}
else if (day == "Saturday"||day=="Sat"||day=="SAT"||day=="SATURDAY") {
condition1=true;
cout<<"Here is the class schedule for "<<day<<":"<<endl;
```

```
displayClassDetails({day,"Coding Workshop", "Muhammad Irfan Younis Mughal", "11:30 To 01:30", "207", "02"});

cout<<"\n";

cout<<"Namaz break :01:30 To 02:00 "<<endl;

displayClassDetails({day,"Coding Workshop", "Muhammad Irfan Younis Mughal", "02:00 To 03:00", "207", "02"});

}

}while(!condition1);

}
```

Display class details as per day enter and also I used do while loop to handle with the invalid inputs prompts by a user

```
03-void displayScheduleForInstructor() {

string instructor;

cin.ignore();

cout<<"Enter the instructor's name: ";

getline(cin,instructor);

char name[256];

for(size_t i=0;i<instructor.length();i++){

name[i]=instructor[i];

}

name[instructor.length()]='\0';
```

strupr(name);

This is third user defined function and it takes instructor name from user convert it to character Array and then use string upper function to make all the letters of instructor name and then search for the instructor classes schedule.

bool wrongname=false;

while(!wrongname){

cout<<"Here is the class schedule for Instructor: "<<name<<endl;

cout<<"**********"<<
<endl;

if (strcmp(name ,"UMAIR AYAZ")==0||strcmp(name ,"SIR UMAIR")==0||strcmp(name ,"UA")==0||strcmp(name ,"UMAIR")==0)
{

wrongname=true;

displayClassDetails({"Monday", "Electronic Devices and Circuits", "Umair Ayaz Kamangar", "12:30 To 01:30", "307", "03"});

displayClassDetails({"Tuesday", "Electronic Devices and Circuits", "Umair Ayaz Kamangar", "11:30 to 01:30", "508", "03"});

cout<<" Lab for X Group \n"<<endl;

displayClassDetails({"Thursday", "Electronic Devices and Circuits Lab", "Umair Ayaz Kamangar ", "02:00 To 05:00", "506", "03"});

```
cout<<" Lab for Y Group \n"<<endl;

displayClassDetails({"Friday", "Electronic Devices and Circuits Lab", "Umair Ayaz Kamangar ", "03:00 to 06:00", "506", "03"});

} else if (strcmp(name ,"SIR IRFAN YOUNIS")==0||strcmp(name ,"SIR IRFAN")==0||strcmp(name ,"IY")==0||strcmp(name ,"IRFAN YOUNIS")==0 ){

wrongname=true;

cout<<" Lab for X Group "<<endl;

displayClassDetails({"Monday", "Computer Programming Lab", "Muhammad Irfan Younis Mughal", "02:00 to 05:00 and 4:10 to 5:10", "03", "01"});

displayClassDetails({"Wednesday", "Linear Algebra", "Muhammad Irfan Younis Mughal", "09:00 To 11:00", "407", "03"});

displayClassDetails({"Wednesday", "Computer Programming", "Muhammad Irfan Younis Mughal", "12:30 To 04:00", "03", "01"});

cout<<" Lab for Y Group "<<endl;

displayClassDetails({"Thursday", "Computer Programming Lab", "Muhammad Irfan Younis Mughal", "02:00 to 04:00 and 4:10 to 5:10", "03", "01"});

displayClassDetails({"Friday", "Linear Algebra", "Muhammad Irfan Younis Mughal", "09:00 To 11:00", "308", "03"});
```

```
} else if (strcmp(name ,"SIR IRFAN ALI BABAR")==0||strcmp(name ,"SIR IRFAN BABAR")==0||strcmp(name ,"IB")==0||strcmp(name ,"IRFAN ALI")==0) {

wrongname=true;

cout<<"Lab for Y Group "<<endl;

displayClassDetails({"Monday", "Circuit Analysis Lab", "Engr. Irfan Ali Babar", "02:00 To 05:00", "306", "03"});

displayClassDetails({"Tuesday", "Circuit analysis", "Engr. Irfan Ali Babar", "04:10 To 06:10", "407", "03"});

displayClassDetails({"Wednesday", "Circuit analysis", "Engr. Irfan Ali Babar", "11:30 To 12:30", "507", "03"});

cout<<" Lab for X Group"<<endl;

displayClassDetails({"Friday", "Circuit Analysis Lab", "Engr. Irfan Ali Babar", "03:00 To 06:00", "306", "03"});

displayClassDetails({"Saturday", "Coding WorkShop", "Muhammad Irfan Younis Mughal", "11:30 To 03:00", "207", "03"});

} else if (strcmp(name ,"SIR PEERAL KHAN")==0||strcmp(name ,"SIR PEERAL")==0||strcmp(name ,"PK")==0||strcmp(name ,"PEERAL")==0) {

wrongname=true;

displayClassDetails({"Tuesday", "Islamic Studies", "Peeral Khan", "02:00 to 04:00", "406", "03"});
```

```
} else if (strcmp(name ,"MAM ASIFA ABBAS")==0||strcmp(name ,"MAM ASIFA")==0||strcmp(name ,"AA")==0||strcmp(name ,"ASIFA")==0) {

wrongname=true;

displayClassDetails({"Thursday", "Communication Skills", "Asifa Abbas", "11:30 To 01:30", "211", "02"});

displayClassDetails({"Friday", "Communication Skills", "Asifa Abbas", "11:30 To 01:30", "507", "03"});

} else {

cout<<"No class schedule found for Instructor: "<<name<<endl;

cout<<"Try Again "<<endl;

displayScheduleForInstructor();

}

}

}
```

Again Do while is used to tackle with invalid inputs

```
04-Void displayScheduleForSubject() {

cout<<"Enter the subject: ";

string subject;

while(cin.get()!='\n'){

continue;
```

```
}
getline(cin,subject);
```

4th user defined function that will take subject name input from user and ignore all the buffer values of string and then search for the respective subject entered by user

```
cout << "Here is the class schedule for Subject: " << subject << endl;
cout <<
"**********************************************************" <<
endl;
bool check=false;
while(!check){
if (subject == "Electronic Devices and Circuits"||subject ==
"EDC"||subject == "edc" ){
check=true;
displayClassDetails({"Monday", "Electronic Devices and Circuits",
"Umair Ayaz Kamangar ", "12:30 To 01:30", "307", "03"});
displayClassDetails({"Tuesday", "Electronic Devices and Circuits",
"Umair Ayaz Kamangar ", "11:30 To 01:30", "508", "03"});
cout<<"Lab for X Group "<<endl;
displayClassDetails({"Thursday","Electronice Devices and
Circuits Lab", "Umair Ayaz Kamangar", "02:00 To 05:00", "506",
"03"});
cout<<"Lab for Y Group "<<endl;
```

```
displayClassDetails({"Friday", "Electronic Devices and Circuits Lab", "Umair Ayaz Kamangar", "03:00 To 06:00", "506", "03"});

break;

} else if (subject == "Computer Programming"||subject == "CP"||subject == "cp") {

check=true;

cout<<" Lab for X Group "<<endl;

displayClassDetails({"Monday", "Computer Programming Lab", "Muhammad Irfan Younis Mughal", "02:00 to 05:00 and 4:10 to 5:10", "03", "01"});

displayClassDetails({"Wednesday", "Computer Programming", "Muhammad Irfan Younis Mughal", "12:30 To 04:00", "03", "01"});

cout<<" Lab for Y Group "<<endl;

displayClassDetails({"Thursday", "Computer Programming Lab", "Muhammad Irfan Younis Mughal", "02:00 to 04:00 and 4:10 to 5:10", "03", "01"});

} else if (subject == "Circiut Analysis"||subject == "CA"||subject == "ca") {

cout<<"Lab for Y Group "<<endl;

check=true;

displayClassDetails({"Monday", "Circuit Analysis Lab", "Engr. Irfan Ali Babar", "02:00 To 05:00", "306", "03"});
```

```
displayClassDetails({"Tuesday", "Circuit analysis", "Engr. Irfan Ali Babar", "04:10 To 06:10", "407", "03"});

displayClassDetails({"Wednesday", "Circuit analysis", "Engr. Irfan Ali Babar", "11:30 To 12:30", "507", "03"});

cout<<" Lab for Grou X "<<endl;

displayClassDetails({"Friday", "Circuit Analysis Lab", "Engr. Irfan Ali Babar", "03:00 To 06:00", "306", "03"});

} else if (subject == "Islamic Studies"||subject == "IS"||subject == "is") {

check=true;

displayClassDetails({"Tuesday", "Islamic Studies", "Peeral Khan", "02:00 to 04:00", "407", "03"});

} else if (subject == "Communication Skills"||subject == "CAPS"||subject == "caps") {

check=true;

displayClassDetails({"Thursday", "Communication Skills", "Asifa Abbas", "11:30 To 01:30", "211", "02"});

displayClassDetails({"Friday", "Communication Skills", "Asifa Abbas", "11:30 To 01:30", "507", "03"});

} else if (subject == "Linear Algebra"||subject == "LA"||subject == "la"){

check=true;
```

```
displayClassDetails({"Wednesday", "Linear Algebra", "Muhammad Irfan Younis Mughal", "09:00 To 11:00", "407", "03"});

displayClassDetails({"Friday", "Linear Algebra", "Muhammad Irfan Younis Mughal", "09:00 To 11:00", "308", "03"});

}else if (subject == "Coding Workshop"||subject == "CW"||subject == "cw"){

check=true;

displayClassDetails({"Saturday", "Coding WorkShop", "Muhammad Irfan Younis Mughal", "11:30 To 03:00", "207", "03"});

}else {

check=false;

cout<<"Invalid Subject name Try Again "<<endl;

displayScheduleForSubject();

}

}

}
```

Do-while is again used to handle the invalid inputs

Results:

```
                                        SUKKUR IBA UNIVERSITY

------------------------------------------------- Welcome To CSE -------------------------------------------------
 Enter your dearest Name: Faizan
======================================== Welcome To My Project Mr.Faizan ========================================

****************************************Project name: CSE-II Classes Schedule ****************************************

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ Prepaerd by: MUHAMMAD FAIZAN ANJUM SHAH ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<< Assigned by: SIR MUHAMMAD IRFAN YOUNIS MUGHAL >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

 Do you want To get guidelines about how to use the project

 Enter Y for Yes
 Enter N for No
```

```
Here is the class schedule for Wednesday:
**************************************************


Your first Class details are as follows:

 Subject: Linear Algebra
 Instructor: Irfan Younis
 Time: 09:00 To 11:00
 Room No: 406
 Block No: 03
 Day: Wednesday

Refreshment break : 11:00 To 11:30

Your Second Class details are as follows:

 Subject: Circuit analysis
 Instructor: Engr. Irfan Ali Babar
 Time: 11:30 To 12:30
 Room No: 507
 Block No: 03
 Day: Wednesday

Your Third Class details are as follows:

 Subject: Computer Programming
 Instructor: Muhammad Irfan Younis Mughal
 Time: 12:30 To 01:30
 Room No: 03
```

Conclusion:

In conclusion this project is great implementation of time table management in universities it can be used to let the university management and students from the clutter of notices and papers to search for their classes schedule. This project is simple approach to for student without any disturbance student can search for their study schedule from this. In conclusion it is a great application and it can be used properly in universities to solve the student's problems.

Reference:

Code help from Google

Flow chart created with the help of Visual Paradigm

Some of the code understanding from YouTube

Motivation from ERFAAN YOUNIS Mughal You tube Channel