

**PROJECT OOP**

**WITH REPORT**

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Object Oriented Programming

Spring 2021

- Marks: 10
- **Deadline: 15 June 2021**
- Project must be done individually by each student.

01-135202-065

BS IT(2A)

OOP

## **Project Description:**

Write the program along with explanation of each class and function.

**Submission:** Submit a zip file which includes the code file i.e. .cpp and .h as well as a project report prepared using MS word/PDF.

Consider the scenario of voting for Class Representative. Every student can nominate a candidate including himself or can vote for an existing candidate. The values are stored in a .txt file like the following:

SNO, Name, NoOfPeopleVoted

1, Arif Ur Rahman, 77

2, Moneeb Gohar, 20

3, Muhammad Muzammal, 35

4, Sumaira Kausar, 55

5, Momina Moetesum, 44

6, Ali Irfan, 33

7, Kamran Khan, 25

**The output of the program should be:**

```
Enter the name of the candidate you like: Arif Ur Rahman
```

```
The candidate is found in the database. Already 77 people have voted for him. Do you want to
vote for him as well (y/n)? n
```

```
Do you want to vote for another candidate (y/n)? y
```

```
Enter the name of the candidate you like: Waseem Akram
```

```
The candidate you voted for is not found in the list. Do you want to add him to the list of
candidates (y/n)? y
```

```
The candidate Waseem Akram is added to the list. His current votes are: 1
```

```
Thanks for voting. The results so far are:
```

```
*****
```

```
The top five candidates are:
```

```
1, Arif Ur Rahman, 77
```

```
2, Waqar Chohan, 56
```

```
3, Sumaira Kausar, 55
```

```
4, Momina Moetesum, 44
```

# Report

- First we made an ADT to secure our code by dividing our program in three files.

- Header.h
- Source.cpp
- Main.cpp

- **Header.h:**

- In Header file we have Included all the headers.

```
#include <iostream>
#include <fstream>
#include <string>
#include <stdio.h>
#include <sstream>
using namespace std;
```

- After that we include the definition of class “candidate”. In private section we have two int variables and one string.
- While in public section we have declaration of functions.

```
private:
    int Serialno;
    string candidate_Name;
    int voter;
public:
    candidate();
    void write(string mn);
    string Read(string mn);
    void show();
```

- **Source.cpp:**

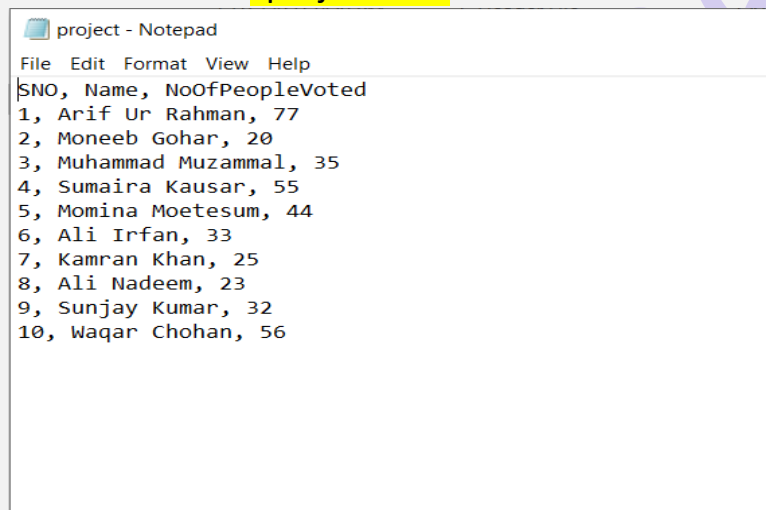
- In source file first we attach the header file so that the declaration of class and all other header files linked together.

```
#include "Header.h"
```

- After this we define a constructor `candidate()`. In this we set the default values of all variables and string.

```
candidate::candidate()
{
    Serialno = 0;
    candidate_Name = "";
    voter = 0;
}
```

- In Function `write()` we pass an string as an argument. After this we use file handling to open an existed file and then read its line. This function will write the data which we want to add in it later. The file is named as `"project.txt"`.



project - Notepad

File Edit Format View Help

SNO, Name, NoOfPeopleVoted

1, Arif Ur Rahman, 77

2, Moneeb Gohar, 20

3, Muhammad Muzammal, 35

4, Sumaira Kausar, 55

5, Momina Moetesum, 44

6, Ali Irfan, 33

7, Kamran Khan, 25

8, Ali Nadeem, 23

9, Sunjay Kumar, 32

10, Waqar Chohan, 56

Function definition in program.

```
void candidate:: write(string mn)
{
    ofstream ofile;
    ofile.open("project.txt", ios::app);
    int count = 0;
    string line;
    ifstream file("project.txt");
    while (getline(file, line))
        count++;
    ofile << ++count << ", " << mn << ", 1" << endl;
    ofile.close();
}
```

- In Function `Read()` we again pass string which is the name of candidate which will be searched in the txt file. We used “

`if (str.find(mn) != std::string::npos)`”this will read until to the last of the string. The second is loop `“for (int i = str.length() - 1; i >= 0; i--)”`is according to the length of string. This will put all the data of file into strings which will help us.

```
if (str[i] != ',')
{
    s += str[i];
}
else
    break;
}
reverse(s.begin(), s.end());
return s;
```

The purpose of `reverse()` is to reverse the string.

- In `Void show()` Function we compared the user input strings to the strings in file.

```
ifstream file("project.txt");
string str, str1;
string s;
int x = 0;
string st[10];
int sti[10];

cout << "*****" << endl;
int i = 0;
while (getline(file, str)) {

    str1 = str;
    st[i] = str;
    str1 = str1.substr(str1.length() - 3, str1.length() - 1);
    cout << str1 << endl;;
    stringstream geek(str1);
    geek >> x;
    sti[i] = x;
    i++;
}
```

- **Main.cpp:**

- As like source file we linked it with header file.

```
#include "Header.h"
```

- In main Function first we made some strings and character

```
string candidatName;
string check;
char x1;
char x;
string y1 = "y";
```

variable.

- We made an object of class candidate.

```
candidate obj;
```

- We used while loop to get the user input.

```
while (y1 == "y")  
{
```

- In next part we get the user string by getline function, and then check it using check function from the file.

```
cout << "Enter the name of candidate you like:";  
cin.ignore();  
getline(cin, candidatNAme);  
check = obj.Read(candidatNAme);
```

- The variable check will read the data from file which is according to string.

```
if (check != "-1")  
{  
    cout << "\nThe candidate is found in the database.Already" << endl;  
    cin >> x1;  
    cout << "\nDo you want to vote another candidate (y/n) ? ";  
    cin >> y1;  
}
```

Variable x1 and y1 are used to get the user decision.

- If the candidate is not found in the data base then we will add it by using write function().

```
if (x == 'y' || x == 'Y')  
{  
    obj.write(candidatNAme);
```

- After that we will simply call the show function().

```
obj.show();  
system("pause");  
return 0;
```

## **Overall Code:**

### **❖ Header.h code:**

```
#include <iostream>
#include<fstream>
#include <string>
#include <stdio.h>
#include <sstream>
using namespace std;
class candidate
{
private:
    int Serialno;
    string candidate_Name;
    int voter;
public:
    candidate();
    void write(string mn);
    string Read(string mn);
    void show();
};
```

### **❖ Source.cpp code:**

```
#include "Header.h"
candidate::candidate()
{
    Serialno = 0;
    candidate_Name = "";
    voter = 0;
}
void candidate:: write(string mn)
{
    ofstream ofile;
    ofile.open("project.txt", ios::app);
    int count = 0;
    string line;
    ifstream file("project.txt");
    while (getline(file, line))
        count++;
    ofile << ++count << ", " << mn << ", 1" << endl;
    ofile.close();
}
string candidate:: Read(string mn)
{
    ifstream file("project.txt");
    string str;
    string s;
    while (getline(file, str)) {
        if (str.find(mn) != std::string::npos) {
            for (int i = str.length() - 1; i >= 0; i--)
            {
```

```

        if (str[i] != ',')
        {
            s += str[i];
        }
        else
            break;
    }
    reverse(s.begin(), s.end());
    return s;
}
}
return "-1";
}
void candidate::show()
{
    ifstream file("project.txt");
    string str, str1;
    string s;
    int x = 0;
    string st[10];
    int sti[10];

    cout << "*****" << endl;
    int i = 0;
    while (getline(file, str)) {

        str1 = str;
        st[i] = str;
        str1 = str1.substr(str1.length() - 3, str1.length() - 1);
        cout << str1 << endl;;
        stringstream geek(str1);
        geek >> x;
        sti[i] = x;
        i++;
    }
    int index = 0, ind[5];
    int largest = sti[0];
    for (int i = 0; i < 5; i++)
    {

        for (int i = 0; i < 10; i++) {
            if (largest < sti[i])
            {
                largest = sti[i];
                index = i;
            }
        }
        ind[i] = index;
    }
    cout << st[0];
    for (int i = 0; i < 5; i++)
    {
        cout << st[i] << endl;;
    }
}
}

```



### ❖ Main.cpp code:

```
#include "Header.h"
int main()
{
    string candidatName;
    string check;
    char x1;
    char x;
    string y1 = "y";
    candidate obj;
    while (y1 == "y")
    {
        cout << "Enter the name of candidate you like:";
        cin.ignore();
        getline(cin, candidatName);
        check = obj.Read(candidatName);
        if (check != "-1")
        {
            cout << "\nThe candidate is found in the database.Already" <<
check << "people's vote it. Do you like it as well (y/n)? ";
            cin >> x1;
            cout << "\nDo you want to vote another candidate (y/n) ? ";
            cin >> y1;
        }
        else
        {
            cout << "\nThe candidate is not found in the database. Do you
want to add it to the list of candidates(y / n) ? ";
            cin >> x;
            if (x == 'y' || x == 'Y')
            {
                obj.write(candidatName);
                cout << "\nThe candidate " << candidatName << " is added
to the database. It is liked by 1 person.\n";
            }
            cout << "\nDo you want to look for another candidate (y/n) ? ";
            cin >> y1;
        }
    }
    obj.show();
    system("pause");
    return 0;
}
```

# OUTPUT OF CODE:

```
Select C:\Users\taimo\source\repos\Project\Debug\Project.exe
Enter the name of candidate you like:Arif
The candidate is found in the database.Already 77 people's vote it. Do you like it as well (y/n) ? y
Do you want to vote another candidate (y/n) ? y
Enter the name of candidate you like:Taimoor
The candidate is not found in the database. Do you want to add it to the list of candidates(y / n) ? y
The candidate Taimoor is added to the database. It is liked by 1 person.
Do you want to look for another candidate (y/n) ? n
*****
ted
77
0
35
5
4
33
25
23
32
-
```