Practical sheet 4

Punit Rana

23115118

Electrical Engg. (EE 5)

Ques1. Write a program using function to compute your CGPA and finally print it in the main function .

main.cpp Run

```cpp
#include <iostream>
#include<string>
using namespace std;
void CGPA(char s){
    switch(s){
        case  'A' :
        cout<<"Your CGPA is 10! "<<endl;
        break;
        case 'a':
        cout<<"Your CGPA is 9 "<<endl;
        break;
        case 'B':
        cout<<"Your CGPA is 8 "<<endl;
        break;
        case 'b':
```

main.cpp Run

```cpp
        cout<<"Your CGPA is 7 "<<endl;
        break;
        case 'C':
        cout<<"Your CGPA is 6 "<<endl;
        break;
        case 'c':
        cout<<"Your CGPA is 5 "<<endl;
        break;
        case 'D':
        cout<<"Your CGPA is 4 "<<endl;
        break;
```

main.cpp

Run

```
25          cout<<"Your CGPA is 4 "<<endl;
26          break;
27          case 'F':
28          cout<<"Your CGPA is 0 "<<endl;
29          break;
30      }
31  }
32  int main() {
33       char s;
34       cout<<"Enter your grades: "<<endl;
35       cin>>s;
36       CGPA(s);
37
38      return 0;
39  }
```

```
/tmp/EJVySwOUME.o
Enter your grades:
D
Your CGPA is 4
```

Ques2. Write a C++ program to write number 1 to 100 in a data file NOTES.TXT and then display the result on the screen.

main.cpp Run

```cpp
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
int main() {
    ofstream file("notes.txt");
    for(int i=1;i<=100;i++){
        file<<i<<"\t";
```

Programiz C++ Online Compiler

main.cpp Run

```cpp
        file<<i<<"\t";
        if(i%10==0){
            file<<"\n";
        }
    }
    file.close();
    ifstream inf("notes.txt");
    while(inf){
        string a;
        getline(inf,a);
        cout<<a<<"\n";
    }

     return 0;
}
```

Output Clear

```
/tmp/Hbz5ZCUOUn.o
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
61  62  63  64  65  66  67  68  69  70
71  72  73  74  75  76  77  78  79  80
81  82  83  84  85  86  87  88  89  90
91  92  93  94  95  96  97  98  99  100
```

Ques 3. Write a program to check a string is palindrome or not.

main.cpp

Run

```cpp
#include<iostream>
#include<string>
using namespace std;

int main(){
    string s;
    cout<<"Enter String: ";
    cin>>s;

    int i=0, j=s.length()-1;
    bool flag = true;
    while(i<j){
        if(s[i] == ' '){
            i++;
        }
        else if(s[j] == ' '){
            j--;
        }
        else if(s[i] != s[j]){
            flag = false;
            break;
        }
        else{
            i++;    j--;
        }
    }

    if(flag == true){
        cout<<"Palindrome"<<endl;
    }
    else{
        cout<<"Not a palindrome"<<endl;
    }

}
```

Output Clear

```
/tmp/v8LXNVKXbw.o
Enter String: n i tin
Palindrome
```

Ques4. Write a program to convert a string in uppercase to lowercase and vice versa.

main.cpp

Run

```cpp
#include <iostream>
#include<string>
using namespace std;
int main() {
    string s;
    cout<<"Enter a string in lowercase: "<<endl;
    cin>>s;
    for(int i=0;i<s.length();i++){
        s.at(i) = s.at(i)-32;
    }
      cout<<"String in uppercase is: "<<endl;
    for(int i=0;i<s.length();i++){
       cout<<s.at(i);
    }
    return 0;
```

Output

```
/tmp/XwbWUE4A74.o
Enter a string in lowercase:
rana
String in uppercase is:
RANA
```

Ques5. Write two overloaded versions of a function ‘Addition’ – one that takes two int parameter sand returns the sum, and the other that takes two float parameters and returns the float sum. Write main to test these functions.

main.cpp

Run

```cpp
#include<iostream>
using namespace std;
int sum(int a, int b){
    return a+b;
}
float sum(float a, float b){
    return a+b;
}
int main(){
    int num1 = 7;
    int num2 = 12;
    float num3 = 2.36;
    float num4 = 6.78;

    cout<<"Sum of integers: "<<sum(num1,num2)<<endl;
    cout<<"Sum of floats: "<<sum(num3,num4)<<endl;
}
```

Output

```
/tmp/v8LXNVKXbw.o
Sum of integers: 19
Sum of floats: 9.14
```

Ques6. Ten numbers are entered from the keyboard into an array. Write a program to find out positive, negative, odd and even.

main.cpp

Run

```cpp
#include <iostream>
using namespace std;
int main() {
    int arr[5];
     cout<<"Enter 5 numbers: "<<endl;
    for(int i=0;i<5;i++){
        cin>>arr[i];
    }
     int counter1=0;
    for(int i=0;i<5;i++){
        if(arr[i]>0){
            counter1++;
        }
    }
     cout<<"No. of positive elements is: "
```

main.cpp

Run

```
        <<counter1<<endl;
    int counter2=0;
    for(int i=0;i<5;i++){
        if(arr[i]<0){
            counter2++;
        }
    }
    cout<<"No. of negative elements is: "
        <<counter2<<endl;
    int counter3=0;
    for(int i=0;i<5;i++){
        if(arr[i]%2==0){
            counter3++;
        }
    }
```

main.cpp

Run

```
    for(int i=0;i<5;i++){
        if(arr[i]%2==0){
            counter3++;
        }
    }
        cout<<"No. of even: "<<counter3<<endl;
        int counter4=0;
    for(int i=0;i<5;i++){
        if(arr[i]%2 !=0){
            counter4++;
        }
    }
        cout<<"No. of odd: "<<counter4<<endl;
    return 0;
}
```

```
/tmp/sPNpquk2y5.o
Enter 5 numbers:
3
-5
4
2
-4
No. of positive elements is: 3
No. of negative elements is: 2
No. of even: 3
No. of odd: 2
```