

Practical sheet 4

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Electrical Engg. (EE 5)

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

```
main.cpp  [Icons] [Run]

1  #include <iostream>
2  #include<string>
3  using namespace std;
4  void CGPA(char s){
5      switch(s){
6          case 'A' :
7              cout<<"Your CGPA is 10! "<<endl;
8              break;
9          case 'a':
10             cout<<"Your CGPA is 9 "<<endl;
11             break;
12             case 'B':
13                 cout<<"Your CGPA is 8 "<<endl;
14                 break;
15                 case 'b':
```

```
main.cpp  [Icons] [Run]

16             cout<<"Your CGPA is 7 "<<endl;
17             break;
18             case 'C':
19                 cout<<"Your CGPA is 6 "<<endl;
20                 break;
21             case 'c':
22                 cout<<"Your CGPA is 5 "<<endl;
23                 break;
24             case 'D':
25                 cout<<"Your CGPA is 4 "<<endl;
26                 break;
27             case 'E':
```

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

```
1  #include <iostream>
2  #include <fstream>
3  #include <string>
4  using namespace std;
5  int main() {
6      ofstream file("notes.txt");
7      for(int i=1;i<=100;i++){
8          file<<i<<"\t";
```

Programiz C++ Online Compiler

main.cpp

```
8          file<<i<<"\t";
9          if(i%10==0){
10             file<<"\n";
11         }
12     }
13     file.close();
14     ifstream inf("notes.txt");
15     while(inf){
16         string a;
17         getline(inf,a);
18         cout<<a<<"\n";
19     }
20
21     return 0;
22 }
```

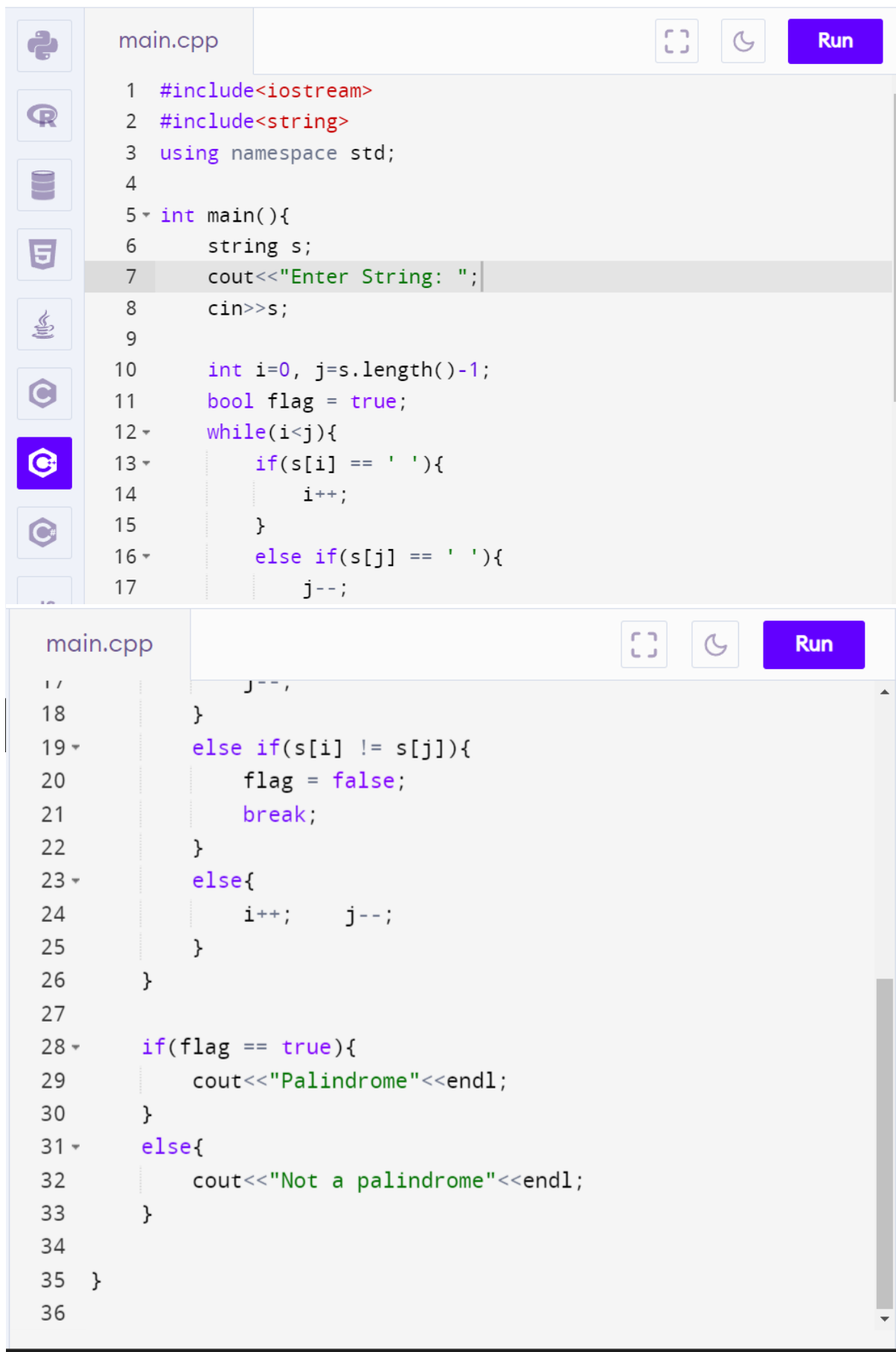
Output

Clear

/tmp/Hbz5ZCU0Un.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.



The image shows a C++ IDE with two panels. The top panel displays the first 17 lines of a program named 'main.cpp'. The bottom panel displays the remaining lines, from 18 to 36. The program prompts the user to enter a string and then checks if it is a palindrome by comparing characters from both ends towards the center. If the characters match, it continues; if they don't, it sets a flag to false and breaks the loop. Finally, it prints 'Palindrome' if the flag is true, or 'Not a palindrome' otherwise.

```
main.cpp
1  #include<iostream>
2  #include<string>
3  using namespace std;
4
5  int main(){
6      string s;
7      cout<<"Enter String: ";
8      cin>>s;
9
10     int i=0, j=s.length()-1;
11     bool flag = true;
12     while(i<j){
13         if(s[i] == ' '){
14             i++;
15         }
16         else if(s[j] == ' '){
17             j--;
```

```
main.cpp
18     }
19     else if(s[i] != s[j]){
20         flag = false;
21         break;
22     }
23     else{
24         i++;    j--;
25     }
26 }
27
28 if(flag == true){
29     cout<<"Palindrome"<<endl;
30 }
31 else{
32     cout<<"Not a palindrome"<<endl;
33 }
34
35 }
36
```

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

```
1  #include <iostream>
2  #include<string>
3  using namespace std;
4  int main() {
5      string s;
6      cout<<"Enter a string in lowercase: "<<endl;
7      cin>>s;
8      for(int i=0;i<s.length();i++){
9          s.at(i) = s.at(i)-32;
10     }
11     cout<<"String in uppercase is: "<<endl;
12     for(int i=0;i<s.length();i++){
13         cout<<s.at(i);
14     }
15     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

```
1  #include<iostream>
2  using namespace std;
3  int sum(int a, int b){
4      return a+b;
5  }
6  float sum(float a, float b){
7      return a+b;
8  }
9  int main(){
10     int num1 = 7;
11     int num2 = 12;
12     float num3 = 2.36;
13     float num4 = 6.78;
14
15     cout<<"Sum of integers: "<<sum(num1,num2)<<endl;
16     cout<<"Sum of floats: "<<sum(num3,num4)<<endl;
17 }
```

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

```
1  #include <iostream>
2  using namespace std;
3  int main() {
4      int arr[5];
5      cout<<"Enter 5 numbers: "<<endl;
6      for(int i=0;i<5;i++){
7          cin>>arr[i];
8      }
9      int counter1=0;
10     for(int i=0;i<5;i++){
11         if(arr[i]>0){
12             counter1++;
13         }
14     }
15     cout<<"No. of positive elements is: "
```

main.cpp



Run

```
        <<counter1<<endl;
16     int counter2=0;
17     for(int i=0;i<5;i++){
18         if(arr[i]<0){
19             counter2++;
20         }
21     }
22     cout<<"No. of negative elements is: "
        <<counter2<<endl;
23     int counter3=0;
24     for(int i=0;i<5;i++){
25         if(arr[i]%2==0){
26             counter3++;
27         }
28     }
```

main.cpp



Run

```
24     for(int i=0;i<5;i++){
25         if(arr[i]%2==0){
26             counter3++;
27         }
28     }
29     cout<<"No. of even: "<<counter3<<endl;
30     int counter4=0;
31     for(int i=0;i<5;i++){
32         if(arr[i]%2 !=0){
33             counter4++;
34         }
35     }
36     cout<<"No. of odd: "<<counter4<<endl;
37     return 0;
38 }
```

/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

