

# Programming Fundamentals

## Lab Task Week 5

Athar Abbas

SP25-BSE-082

Section - A

### Task 1: Even or Odd

```
1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main() {
5      cout << "Even or Odd" << endl;
6      int x;
7      cout << "Input the number to check" << endl;
8      cin >> x;
9      cout << setw(25) << setfill('=') << '=' <<
      endl;
10     if (x % 2 == 0) {
11         cout << "Number is Even" << endl;
12     }
13     else{
14         cout << "Number is Odd" << endl;
15     }
16     return 0; }
```

### Output:

```
/home/athar/Desktop/c_practice/labweek5/evenodd
Even or Odd
Input the number to check
4
=====
Number is Even

Process returned 0 (0x0)   execution time : 2.800 s
Press ENTER to continue.
█
```

## Task 2: 24 Hour format to 12 Hour format

```
1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main () {
5  int itimeh , itimem , itimes;
6  cout << "Input the time in 24 hour format" <<
endl;
7  cout << "Hours: ";
8  cin >> itimeh;
9  cout << "Minutes: ";
10 cin >> itimem;
11 cout << "Seconds: ";
12 cin >> itimes;
13 cout << endl;
14 cout << setw(25) << setfill('=') << '=' <<
endl;
15 cout << endl;
16 cout << "Time in 12 hour format" << endl;
17 int ntimeh;
18 if (itimeh <= 12) {
19     cout << itimeh << ":" << itimem << ":" <<
itimes << endl;
20 }
21 if (itimeh > 12) {
22     ntimeh = itimeh - 12;
23     cout << ntimeh << ":" << itimem << ":" <<
itimes << endl;
24 }
25 return 0;}
```

**Output:**

```
/home/athar/Desktop/c_practice/labweek5/time
Input the time in 24 hour format
Hours: 23
Minutes: 23
Seconds: 43

=====

Time in 12 hour format
11:23:43

Process returned 0 (0x0)   execution time : 3.748 s
Press ENTER to continue.
█
```

### Task 3: Sum of Positive Integers

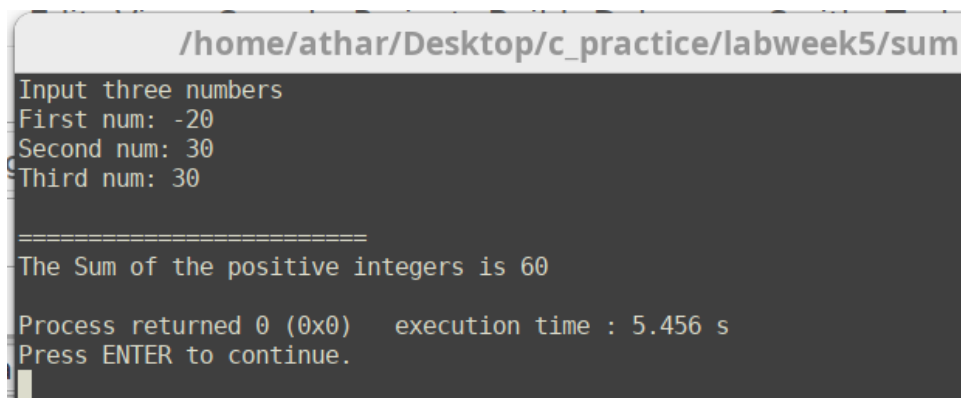
```
1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main() {
5      cout << "Input three numbers" << endl;
6      int num1,num2,num3;
7
8      cout << "First num: ";
9      cin >> num1;
10     cout << "Second num: ";
11     cin >> num2;
12     cout << "Third num: ";
13     cin >> num3;
14     cout << endl;
15     cout << setw(25) << setfill('=') << '=' <<
    endl;
16     int sum = 0;
17     if (num1 >= 0) {
18         sum += num1;
19     }
20     if (num2 >= 0) {
21         sum += num2;
22     }
23 }
```

```

24  if (num3 >= 0) {
25      sum += num3;
26  }
27
28  cout << "The Sum of the positive integers is "
<< sum << endl;
29  return 0;
30  }

```

## Output:



```

/home/athar/Desktop/c_practice/labweek5/sum
Input three numbers
First num: -20
Second num: 30
Third num: 30

=====
The Sum of the positive integers is 60

Process returned 0 (0x0)   execution time : 5.456 s
Press ENTER to continue.

```

## Task 4: Valid and Invalid Triangle

```

1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main() {
5      cout << "Input the three angles" << endl;
6      double num1, num2, num3;
7
8      cout << "Angle a: ";
9      cin >> num1;
10     cout << "Angle β: ";
11     cin >> num2;
12     cout << "Angle γ: ";

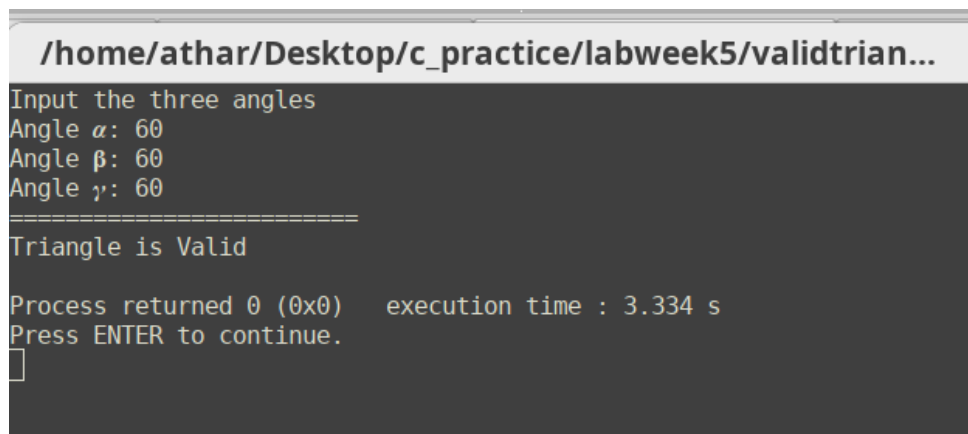
```

```

13  cin >> num3;
14  double sum = num1 + num2 + num3;
15  cout << setw(25) << setfill('=') << '=' <<
    endl;
16  if (sum == 180 ) {
17      cout << "Triangle is Valid" << endl;
18  } else {
19      cout << "Invalid Triangle" << endl;
20  }
21  }

```

**Output:**



```

/home/athar/Desktop/c_practice/labweek5/validtrian...
Input the three angles
Angle α: 60
Angle β: 60
Angle γ: 60
=====
Triangle is Valid
Process returned 0 (0x0)   execution time : 3.334 s
Press ENTER to continue.

```

## Task 5: Sum, Product , Average and Comparison

```

1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main() {
5      cout << "Input three numbers" << endl;
6      int num1,num2,num3;
7
8      cout << "First num: ";
9      cin >> num1;
10     cout << "Second num: ";

```

```

11  cin >> num2;
12  cout << "Third num: ";
13  cin >> num3;
14  cout << endl;
15  cout << setw(25) << setfill('=') << '=' <<
    endl;
16  cout << "The Sum of the numbers is " <<
    num1+num2+num3 << endl;
17  cout << "The Product of the numbers is " <<
    num1*num2*num3 << endl;
18  cout << "The average of the numbers is " <<
    (num1+num2+num3) / 3 << endl;
19  int big = (num1 >= num2) ? num1 : num2;
20  int bigger = (big >= num3) ? big : num3;
21  cout << "The largest number is " << bigger <<
    endl;
22  int small = (num1 <= num2) ? num1 : num2;
23  int smaller = (small <= num3) ? small : num3;
24  cout << "The smallest number is " << smaller <<
    endl;
25  return 0;}

```

## Output:

```

/home/athar/Desktop/c_practice/labweek5/compare
Input three numbers
First num: 9
Second num: 8
Third num: 7

=====
The Sum of the numbers is 24
The Product of the numbers is 504
The average of the numbers is 8
The largest number is 9
The smallest number is 7

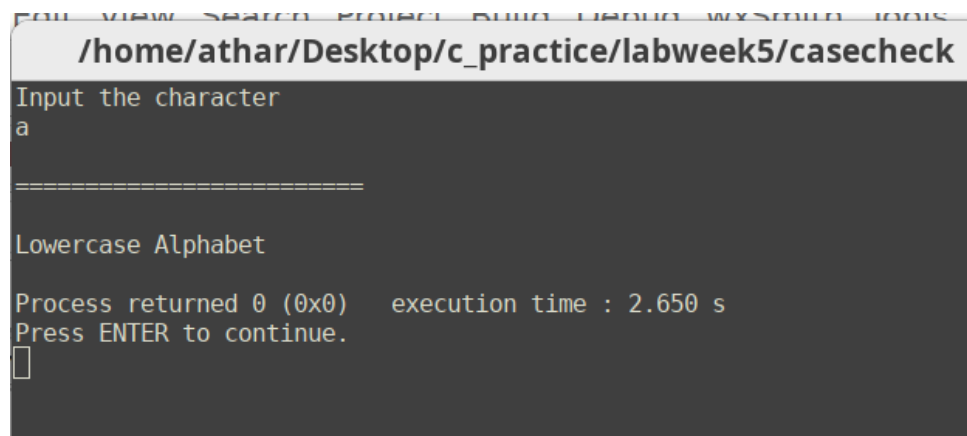
Process returned 0 (0x0)   execution time : 6.567 s
Press ENTER to continue.

```

## Task 6: Case Check

```
1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main() {
5  char x;
6  cout << "Input the character" << endl;
7  cin >> x;
8  cout << endl;
9  cout << setw(25) << setfill('=') << '=' <<
endl;
10 cout << endl;
11 if (isupper(x)) {
12     cout << "Uppercase Alphabet" << endl;
13 }
14 } else {
15     cout << "Lowercase Alphabet" << endl;
16 }
17 return 0;
18 }
```

## Output:



The screenshot shows a terminal window with the title bar "/home/athar/Desktop/c\_practice/labweek5/casecheck". The output of the program is as follows:

```
Input the character
a

=====

Lowercase Alphabet

Process returned 0 (0x0)   execution time : 2.650 s
Press ENTER to continue.
```

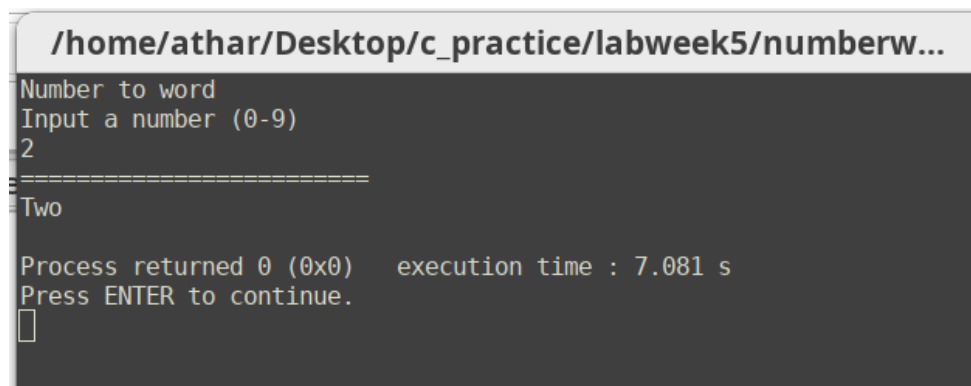
## Task 7: Number to Word

```
1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main() {
5      cout << "Number to word" << endl;
6      int num;
7      cout << "Input a number (0-9)" << endl;
8      cin >> num; cout << setw(25) << setfill('=') <<
    '=' << endl;
9      if (num == 0) {
10         cout << "Zero" << endl;
11     }
12
13     else if (num == 1) {
14         cout << "One" << endl;
15     }
16     else if (num == 2) {
17         cout << "Two" << endl;
18     }
19     else if (num == 3) {
20         cout << "Three" << endl;
21     }
22     else if (num == 4) {
23         cout << "Four" << endl;
24     }
25     else if (num == 5) {
26         cout << "Five" << endl;
27     }
28     else if (num == 6) {
29         cout << "Six" << endl;
30     }
31     else if (num == 7) {
32         cout << "Seven" << endl;
33     }
34     else if (num == 8) {
```



```
35     cout << "Eight" << endl;
36 }
37 else if (num == 9) {
38     cout << "Nine" << endl;
39 }
40 else{
41     cout << "Please input a Number between 0
and 9" << endl;
42 }
43 return 0; }
```

**Output:**



```
/home/athar/Desktop/c_practice/labweek5/numberw...
Number to word
Input a number (0-9)
2
=====
Two

Process returned 0 (0x0)   execution time : 7.081 s
Press ENTER to continue.
█
```