Bahria University,
Karachi Campus

LAB EXPERIMENT NO. _01_
LIST OF TASKS

TASK NO	OBJECTIVE
Task 1	Write a C++ Program that read a float input from user and store it in variable *amount*. add 16 to an integer *num* if the value of amount in greater than 5.4. Print out the results of both variables on screen
Task 2	Write a C++ Menu driven program that allows a user to enter five numbers and then choose between findings the smallest, largest, sum or average. Use else if statement to determine what action to take.
Task 3	Write a C++ program that takes a positive integer from user and store it in variable *posNumber*. Follow these conditions; • If the number is less than 1, print wrong input. • If it is 1, Print its value. • If value is greate than 1, check the value is it Even or Odd. • If it is Even, half it and print. • If it is Odd, multiply it by 3 and print result. • Repeat the whole process until user enter 1.
Task 4	Create a program which implement an interface for simple calculator & use multiple data types to store answers and result and memory log. • Develop an Algorithm for it. • Create an interface for simple calculator. • Implement interface in SimpleCalculator class.
Task 5	
Task 6	
Task 7	
Task 8	

Submitted On:
__29/03/19__
(Date: DD/MM

Task No. 1: Write a C++ Program that read a float input from user and store it in variable *amount*. add 16 to an integer *num* if the value of amount in greater than 5.4. Print out the results of both variables on screen.

Coding:

```
Task4.cpp  Task3.cpp  Task1.cpp
1    #include <iostream>
2    using namespace std;
3    int main()
4    {
5        int num = 16;
6        float amount;
7        cout << "Enter Value of Amount : " << endl;
8        cin >> amount;
9        if(amount> 5.4)
10       {
11           cout<< "Value of amount is : " <<amount <<endl;
12           cout<<"Value of number is :" <<num <<endl;
13       }
14       else
15       {
16           cout << "Value is smaller than 5.4" << endl;
17       }
18       return 0;
19   }
```

Output:

```
Enter Value of Amount :
7
Value of amount is : 7
Value of number is :16
```

Task No. 2: Write a C++ Menu driven program that allows a user to enter five numbers and then choose between findings the smallest, largest, sum or average. Use else if statement to determine what action to take.

Coding:

Task4.cpp Task3.cpp Task1.cpp **Task2.cpp**

```cpp
1   #include <iostream>
2   using namespace std;
3   int main()
4   {
5       int arr[5];
6       cout << "Enter values of array ; " << endl;
7       for (int i = 0; i < 5; i++)
8       {
9           cin >> arr[i];
10      }
11      cout << "Values of array are :" << endl;
12      for (int i = 0; i < 5; i++)
13      {
14          cout << arr[i] << " ";
15      }
16      cout << endl;
17      //Checking Smallest number  in array
18      int min = arr[0];
19      for (int i = 0; i < 5; i++)
20      {
21          if (min > arr[i])
22          {
23              min = arr[i];
24          }
25      }
26      cout << "Smallest number in array is :" << min << endl;
27      //Checking largest number in array
28      int max = 0;
29      for (int i = 0; i < 5; i++)
30      {
31          if (max < arr[i])
32          {
33              max = arr[i];
34          }
35      }
36      cout << "largest number in array is :" << max << endl;
37      //Finding sum array and Average
38      int sum = 0;
39      for (int i = 0; i < 5; i++)
40      {
41          sum = sum + arr[i];
42      }
43      cout << "sum of array is :" << sum << endl;
44      cout << "Average of array is :" << sum / 5 << endl;
45      return 0;
46  }
```

Output:

```
Enter values of array ;
3
89
45
12
23
Values of array are :
3 89 45 12 23
Smallest number in array is :3
largest number in array is :89
sum of array is :172
Average of array is :34
```

Task No. 3: Write a C++ program that takes a positive integer from user and store it in variable *posNumber*. Follow these conditions;

- If the number is less than 1, print wrong input.
- If it is 1, Print its value.
- If value is greate than 1, check the value is it Even or Odd.
- If it is Even, half it and print.
- If it is Odd, multiply it by 3 and print result.
- Repeat the whole process until user enter 1.

Coding:

Task4.cpp Task3.cpp

```cpp
#include <iostream>
using namespace std;
int main()
{
    int posNumber;
    do
    {
        cout << "Enter any +ve integer :" << endl;
        cin >> posNumber;
        if (posNumber < 1)
        {
            cout << "Wrong Input" << endl;
        }
        else if (posNumber > 1)
        {
            //Checking for Even and odd
            if (posNumber % 2 == 0)
            {
                cout << "Your number " << posNumber << "is Even " << endl;
                cout << " Half of " << posNumber << "is " << posNumber / 2 << endl;
            }
            else
            {
                cout << "Your number " << posNumber << " is Odd" << endl;
                cout << "Multiple of 3 of " << posNumber << " is " << posNumber * 3 << endl;
            }
        }

    }
    while (posNumber != 1);
    {
        cout << "Loop Ended ...!!!" << endl;
    }
    return 0;
}
```

Output:

```
Enter any +ve integer :
2
Your number 2is Even
 Half of 2is 1
Enter any +ve integer :
3
Your number 3 is Odd
Multiple of 3 of 3 is 9
Enter any +ve integer :
1
Loop Ended ...!!!
```

Task No. 4: Create a program which implement an interface for simple calculator & use multiple data types to store answers and result and memory log.

- Develop an Algorithm for it.

- Create an interface for simple calculator.

- Implement interface in SimpleCalculator class.

Coding:

```cpp
1    #include <iostream>
2    using namespace std;
3    int main()
4    {
5        SimpleCalculater obj;
6        obj.Calculation;
7        return 0;
8    }
9    class SimpleCalculater
10   {
11   public:
12       void Calculation()
13       {
14           int i_result;
15           float f_result, num1, num2;
16           char op;
17           cout << "Enter number 1 :" << endl;
18           cin >> num1;
19           cout << "Enter number 2 :" << endl;
20           cin >> num2;
21           cout << "Which Operation you want to do ?" << endl;
22           cin >> op;
23           if (op == '+')
24           {
25               i_result = num1 + num2;
26               f_result = num1 + num2;
27               cout << "Sum in Data type(int) is :" << i_result << endl;
28               cout << "Sum in Data type(flaot) is :" << f_result << endl;
29           }
30           else if (op == '-')
31           {
32               if (num1 > num2)
33               {
34                   i_result = num1 - num2;
35                   f_result = num1 - num2;
36                   cout << "Subtraction in Data type(int) is :" << i_result << endl;
```

```cpp
37                    cout << "Subtraction in Data type(flaot) is :" << f_result << endl;
38                }
39              else
40                {
41                    i_result = num2 - num1;
42                    f_result = num2 - num1;
43                    cout << "Subtraction in Data type(int) is :" << i_result << endl;
44                    cout << "Subtraction in Data type(flaot) is :" << f_result << endl;
45                }
46            }
47          else if (op == '*')
48            {
49                i_result = num1 * num2;
50                f_result = num1 * num2;
51                cout << "Multiplication in Data type(int) is :" << i_result << endl;
52                cout << "Multiplication in Data type(flaot) is :" << f_result << endl;
53            }
54          else if (op == '/')
55            {
56                i_result = num1 / num2;
57                f_result = num1 / num2;
58                cout << "Multiplication in Data type(int) is :" << i_result << endl;
59                cout << "Multiplication in Data type(flaot) is :" << f_result << endl;
60            }
61          else
62            {
63                cout << "Invalid Input ..!!!" << endl;
64            }
65        }
66    };
```

Output:

```
Enter number 1 :
9.565
Enter number 2 :
7.35
Which Operation you want to do ?
-
Subtraction in Data type(int) is :2
Subtraction in Data type(flaot) is :2.215
```