

# C++ Assignment Solutions | Loops-2 | Week 3

1. Predict the output

```
#include <bits/stdc++.h>
using namespace std;

int main() {
    while ('1' < '2')
        cout << "In while loop" << endl;
}</pre>
```

# Solution:

```
// Infinite Loop
In while loop
```

#### 2. Predict the output

```
#include <bits/stdc++.h>
using namespace std;

int main() {
   int t = 10;
   while (t /= 2) {
      cout << "Hello" << endl;
   }
}</pre>
```

## Solution:

Hello

Hello

Hello

## 3. Predict the output

```
#include <bits/stdc++.h>
using namespace std;

int main() {
   for (int x = 1; x * x <= 10; x++)
        cout << "In for loop" << endl;
}</pre>
```

#### Solution:

In for loop

In for loop

## 4. Predict the output

```
#include <bits/stdc++.h>
using namespace std;

int main() {
    int x = 10, y = 0;
    while (x >= y) {
        x--;
        y++;
        cout << x << " " << y << endl;
}
</pre>
```

## Solution:

- 9 1
- 8 2
- 7 3
- 6 4
- 5 5
- 4 6

5. WAP to print the sum of all the even digits of a given number.

Sample Input: 4556

Output: 10

#### Solution:

```
#include <bits/stdc++.h>
using namespace std;

int main( ) {
    int n;
    cin >> n;
    int sum = 0;
    while (n > 0) {
        int x = n % 10;
        sum += (x % 2 == 0 ? x : 0);
        n /= 10;
    }
    cout << sum;
}</pre>
```

6. WAP to print the sum of a given number and its reverse.

Sample Input : 12

```
Sample Output : 33 [12+21]
```

Solution:

```
#include <bits/stdc++.h>
using namespace std;

int main() {
    int n;
    cin >> n;
    int temp = n, x = 0;
    while (temp > 0) {
        x *= 10;
        x += (temp % 10);
        temp /= 10;
    }
    cout << n + x << endl;
}</pre>
```

7. Print the factorials of first 'n' numbers

Sample Input : 10

Output :

1

2

6

24

120

720

5040

40320

362880

3628800

Solution:

```
#include <bits/stdc++.h>
using namespace std;

int main( ) {
    int n;
    cin >> n;
    int f = 1;
    for (int i = 1; i <= n; i++) {
        f *= i;
        cout << f << endl;
    }
}</pre>
```

8. Print first 'n' fibonacci numbers.

```
Sample Input : 10

Output :

1 1 2 3 5 8 13 21 34 55
```

#### Solution:

```
#include <bits/stdc++.h>
using namespace std;

int main() {
    int n;
    cin >> n;
    int f0 = 1, f1 = 1;
    cout << f0 << " " << f1 << " ";
    for (int i = 3; i <= n; i++) {
        int next = f0 + f1;
        cout << next << " ";
        f0 = f1;
        f1 = next;
    }
}</pre>
```

9. Write a program to print out all Armstrong numbers between 1 and 500. If the sum of cubes of each digit of the number is equal to the number itself, then the number is called an Armstrong number. For example, 153 = (1 \* 1 \* 1) + (5 \* 5 \* 5) + (3 \* 3 \* 3)

```
Output : 1 153
```

```
370
```

371

407

## Solution:

```
#include <bits/stdc++.h>
using namespace std;

int main() {

    for (int i = 1; i <= 500; i++) {
        int x = 0, temp = i;
        while (temp > 0) {
            int m = temp % 10;
            x += m * m * m;
            temp /= 10;
        }
        if (i == x) {
            cout << i << endl;
        }
    }
}</pre>
```

Note:- Please try to invest time doing the assignments which are necessary to build a strong foundation. Do not directly Copy Paste using Google or ChatGPT. Please use your brain ..........