



Assignments

C++ Assignments Loops-2



Q1. Predict the output

```
#include <bits/stdc++.h>
using namespace std;
int main() {
while ('1' < '2')
cout << "In while loop" << endl;
}
```

Solution:

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

Q2. Predict the output

```
#include <bits/stdc++.h>
using namespace std;
int main( ) {
int t = 10;
while (t /= 2) {
cout << "Hello" << endl;
}
}
```

Solution:

Hello

Hello

Hello

Q3. 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;
}
```

Solution:

In for loop

In for loop

In for loop

Q4. 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 ;
}
}
```

Solution:

9 1

8 2

7 3

6 4

5 5

4 6

Q5. 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;
}
```

Q6. 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;
}
```

Q7. 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;
    }
}
```

Q8. 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;  
}
```

Q9. 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  
2  
6  
24  
120  
720  
5040  
40320  
362880  
3628800
```

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;  
        }  
    }  
}
```

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.