C++ Assignments | 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;
}
```

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
.
.
.

2. 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

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;
}
```

Solution:
In for loop
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 ;
}
}
```

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

```
#include<iostream>
using namespace std;

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

6.WAP to print the sum of a given number and its reverse.
Sample Input : 12
Sample Output : 33 [12+21]

```
#include<iostream>
using namespace std;

int main( ) {
int n;
cout<<"enter value: ";
cin >> n;
int temp = n, x=0;
while (temp > 0) {
```

```
     x *= 10;
     x += (temp%10);
     temp /= 10;
}
cout <<"sum of a given number and its reverse: "<< n+x ;
}
```

7.Print the factorials of first ‘n’ numbers
Sample Input : 10

```
#include<iostream>
using namespace std;

int main( ) {
int n;
cout<<"enter value: ";
cin >> n;
int a=1;
 for(int i=1;i<=n;i++){
     a *= i;
     cout<<a<<endl;
    }
}
```

8.Print first ‘n’ fibonacci numbers.
Sample Input : 10
Output :

1 1 2 3 5 8 13 21 34 55

```
#include<iostream>
using namespace std;

int main( ) {
int n;
cout<<"enter value: ";
cin >> n;
```

```
int sum=0,a=1,b=1;


 for(int i=0;i<=n;i++){
    cout<<a<<" ";
    sum=a+b;
    a=b;
    b=sum;
 }
}
```

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

```
#include<iostream>
using namespace std;


int main( ) {
for (int i = 1; i <= 500 ; i++){
    int x=i;
    int sumcube=0;
    while (x>0){
       int ld =x%10;
       sumcube += (ld*ld*ld);
        x/=10;
        }
        if(i==sumcube)  cout<<sumcube<<endl;
    }
}
```