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;
}
```

infinite loop case

2. Predict the output

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

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

Hello as t=5
Hello as t= 2
Hello as t=1
as t=1/2 =0 so loop ends

output:
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;
}
```

1<=10 "in for loop"
4<=10 "in for loop"
9<=10 "in for loop"
16<=10 loop terminates.

output:
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 ;
    }
}
```

x=9 then x=8 then x=7 then x=6 then x=5 then x=4

y=1 then y=2 then y=3 then y=4 then y=5 then y=6

as 4>=6 false, loop terminates

output:
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`

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

   `Sample Input : 12`

   `Sample Output : 33 [12+21]`

7. Print the factorials of first ‘n’ numbers

   `Sample Input : 10`

   `Output :`

   1

   2

   6

   `24`

   `120`

   `720`

   `5040`

   `40320`

   `362880`

   `3628800`

8. Print first ‘n’ fibonacci numbers.

   `Sample Input : 10`

   `Output :`

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

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
```

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😀.
