



# Programming for Problem Solving (Exp 4)

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## Task 1:

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

int main() {
    cout << "How many numbers ";
    int N, A, S, C = 1, Avg;
    cin >> N;
    step6:
    cout << "Enter the number ";
    cin >> A;
    S = S + A;
    C = C + 1;
    if(S<=N) {
        goto step6;
    }
    Avg = S/N;
    cout << "Average is " << Avg;
    return 0;
}
```

## Task 2:

**There is a difference between the first and second one as the plus operator is suffix and prefixed which will increase the value before the first iteration and vice versa**

## Task 3:

**1:**

**Hello**

**Hello**

**Hello**

**Hello**

**Hello**

**2:**

**51**

**3:**

**54321**

**4:**

**531**

**5:**

**Prints "I am a loop" 1000 times**

**6:**

**Prints from 1 to infinity**

**7:**

**iTry wasn't initialized**

**8:**

**1621**

**Task 4:**

```
#include<iostream>

using namespace std;

int main() {
    int no, n1 = 0, n2 = 1, current_no;
    cout << "Enter number for fibonacci terms : ";
    cin >> no;
    cout << "\n\nFibonacci Series is :\n";
    for (int i = 0; i < no; i++) {
        if (i <= 1)
            current_no = i;
        else {
            current_no = n1 + n2;
            n1 = n2;
            n2 = current_no;
        }
        cout << current_no << ' ';
    }

    return 0;
}
```

## Task 5:

```
#include<iostream>
using namespace std;
int main()
{
    int num, rem, sq, sum=0;
    cout<<"Enter a Number: ";
    cin>>num;
    while(num>0)
    {
```

```
    rem = num%10;
    if(rem==0)
        sq = 1;
    else
        sq = rem*rem;
    sum = sum + sq;
    num = num/10;
}
cout<<"\nSum of squares of all digits = "<<sum;
cout<<endl;
return 0;
}
```

## Task 6:

```
#include<iostream>
using namespace std;
int main()
{
    int num, rem, sq, sum=2;
    cout<<"Enter a Number: ";
    cin>>num;
    for(i ; i < num; i++)
    {
        sum = sum + (i * i)/i
    }
    cout << sum;
    return 0;
}
```

## Homework Questions:

1. What will be the output of the following programs?

(a) <pre>void main() {     int i=0;     for(;i;)     cout&lt;&lt;"Here is some mail for you"; }</pre>	<b>No Output</b>
(b) <pre>void main() {     int i=0;     do         { cout&lt;&lt;i--;           }while(i&gt;0);     cout&lt;&lt;i; }</pre>	<b>0-1</b>
(c) <pre>void main() {     int i=1,j=1;     while(1)     {         if(i&gt;5)             break;         else             j+=i;         cout&lt;&lt;j;         i+=j;     } }</pre>	<b>25</b>
(d) <pre>void main() {     int i=0, x=0;     for ( i=1; i&lt;5; i++)     {         if(i%2==1)             X+=I;         else             x--;         cout&lt;&lt;x;         continue;     }     cout&lt;&lt;x; }</pre>	<b>10322</b>

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2. Rewrite the following code segment using for.

<pre>x = 100; while ( x &lt; 4000) { Count ++ ; Add = Count * x; x += 150; }</pre>	<pre>for (int x = 100; x &lt; 4000; x+=150) {     Count++;     Add = Count * x; }</pre>
<pre>cycle_number = 1; while ( cycle_number &lt; 100) { cout&lt;&lt;"\ncurrent cycle number:"&lt;&lt;cycle_number; cycle_number *= 2; }</pre>	<pre>for (int cycle_number = 1; cycle_number &lt; 100; cycle_number *= 2) {     cout &lt;&lt; "\ncurrent cycle number:" &lt;&lt; cycle_number; }</pre>