



NATIONAL UNIVERSITY OF SCIENCES AND TECHNOLOGY

CS-114-FUNDAMENTAL OF PROGRAMING LAB MANUAL # 4

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➤ **SECTION:** B

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TASK # 1

CODE:

```
#include <iostream>

Using namespace std ;

Int main(){

    Int n,sum=0;

    Int i=1;

    Cout<<"enter a natural number: ";

    Cin>>n;

    While(i<=n){

        Sum=sum+i;

        I++;

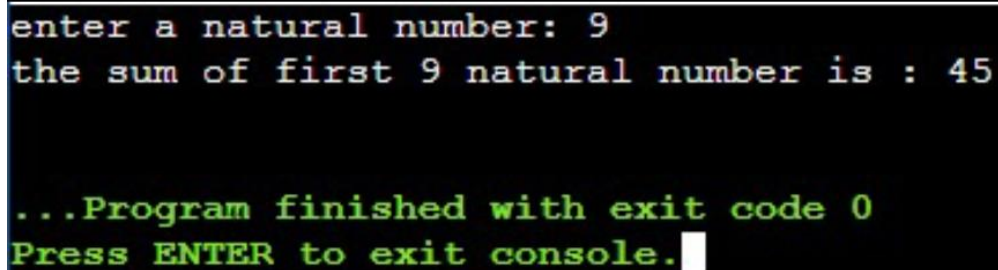
    }

    Cout<<"the sum of first "<<n<<" natural number is : "<<sum<<endl;

    Return 0;

}
```

RESULT:



```
enter a natural number: 9
the sum of first 9 natural number is : 45

...Program finished with exit code 0
Press ENTER to exit console.
```

TASK # 2

CODE:

```
#include <iostream>

Using namespace std;

Int main(){

    Int i=0;

    Int table=8,multiply;

    While(i<=10){

        Cout<<" 8 * "<<i<<" = "<<table*i<<endl;

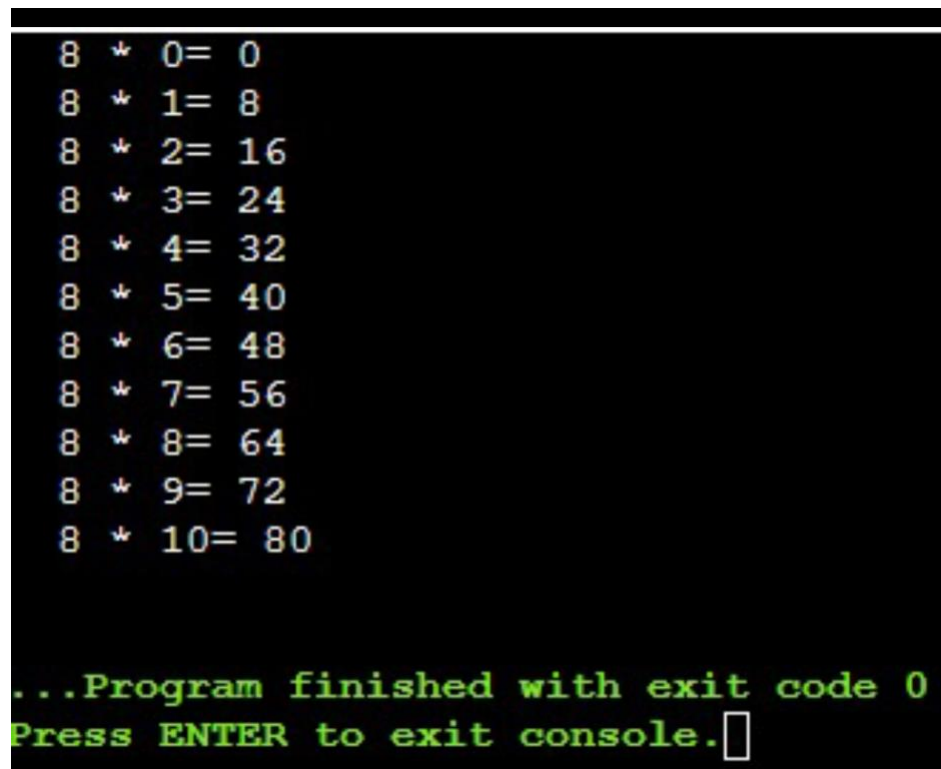
        I++;

    }

    Return 0;

}
```

RESULT:



```
8 * 0= 0
8 * 1= 8
8 * 2= 16
8 * 3= 24
8 * 4= 32
8 * 5= 40
8 * 6= 48
8 * 7= 56
8 * 8= 64
8 * 9= 72
8 * 10= 80

...Program finished with exit code 0
Press ENTER to exit console.
```

TASK # 3

CODE:

```
#include <iostream>
```

```
Int factorial(int n) {
```

```
    If (n == 0) {
```

```
        Return 1;
```

```
    } else {
```

```
        Int result = 0;
```

```
        For (int l = 1; l <= n; i++) {
```

```
            Result *= l;
```

```
        }
```

```
        Return result;
```

```
    }
```

```
}
```

```
Int main() {
```

```
    Int number;
```

```
    Std::cout << "Enter a number: ";
```

```
    Std::cin >> number;
```

```
    Int result = factorial(number);
```

```
    Std::cout << number << "! = " << result << std::endl;
```

```
    Return 0;
```

```
}
```

RESULT:

```
Enter a number: 7
7! = 5040

...Program finished with exit
code 0
Press ENTER to exit console.
```

TASK # 4

CODE:

```
#include <iostream>

Using namespace std;

Int seq, sec = 1, fir = 0;

Int n;

Cout<<"Enter a number for sequence values:"<<endl; cin>>n;

Cout<<"The fibonacci sequence for "<<n<<" values is:"<<endl;

For (int l = 1; l<n; l++)

If (l<=1) {

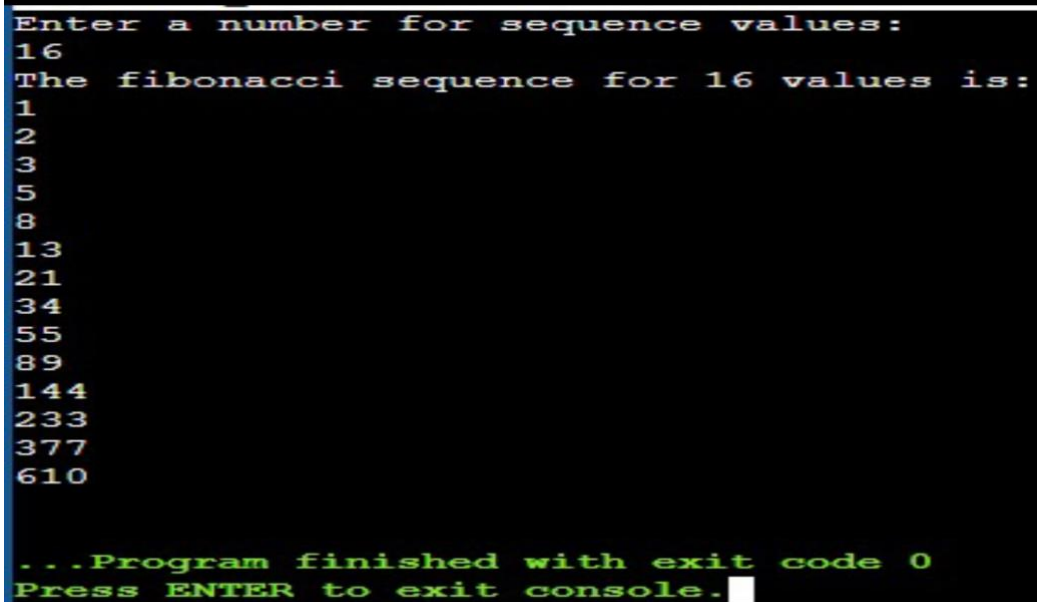
    Seq = l;

} else {

    Seq = fir + sec;
```

```
Fir = sec;  
Sec = seq;  
Cout<<seq<<endl;  
}  
  
Return 0;  
}
```

RESULT:



The screenshot shows a terminal window with a black background and white text. The program prompts the user to enter a number for sequence values. The user enters '16'. The program then outputs the Fibonacci sequence for 16 values. The sequence is: 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610. The program then displays the message: "...Program finished with exit code 0 Press ENTER to exit console." followed by a cursor.

```
Enter a number for sequence values:  
16  
The fibonacci sequence for 16 values is:  
1  
2  
3  
5  
8  
13  
21  
34  
55  
89  
144  
233  
377  
610  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

