# **Assignment-Solution Week-01**

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# Day 1/180 Introduction To Programming (Home work)

- Convert Decimal to Binary
  - 1. 37

Base	Quotient	Ren
2	37	1
2	18	0
2	9	1
2	4	0
2	2	0
2	1	1
2	0	

Ans = 100101

2. 92

Base	Quotient	Rem
2	92	0
2	46	0
2	23	1
2	11	1
2	5	1
2	2	0
2	1	1
2	0	
Δns =	1011100	

3. 128

Base	Quotient	Rem
2	128	0
2	64	0
2	32	0
2	16	0
2	8	0
2	4	0
2	2	0
2	1	1
2	0	
Ans =	10000000	

2

4. 243

Quotient	Rem
243	1
121	1
60	0
30	0
15	1
7	1
3	1
1	1
0	
	243 121 60 30 15 7 3

#### Ans = 11110011

## Convert Binary to Decimal

5. 1011

$$\Rightarrow 1*2^3 + 0*2^2 + 1*2^1 + 1*2^0$$

$$\Rightarrow 8 + 0 + 2 + 1$$

$$\Rightarrow 11$$

6. 111001

$$\Rightarrow 1*2^5 + 1*2^4 + 1*2^3 + 0*2^2 + 0*2^1 + 1*2^0$$

$$\Rightarrow 32 + 16 + 8 + 0 + 0 + 1$$

$$\Rightarrow 57$$

7. 10011011

$$\Rightarrow 1*2^7 + 0*2^6 + 0*2^5 + 1*2^4 + 1*2^3 + 0*2^2 + 1*2^1 + 1*2^0$$

$$\Rightarrow 128 + 0 + 0 + 16 + 8 + 0 + 2 + 1$$

$$\Rightarrow 155$$

8. 10100100

## Convert Decimal to Octal

9. 28

Base	Quotient	Rem
8	28	4
8	3	3
8	0	

Answer:- 34

10.47

Quotient	Rem
47	7
5	5
0	
	5

#### Answer:- 57

11. 928

Base	Quotient	Rem
8	928	0
8	116	4
8	14	6
8	1	1
8	0	

#### **Answer:- 1640**

12. 1243

Base	Quotient	Ren
8	1243	3
8	155	3
8	19	3
8	2	2
8	0	

## **Answer:- 2333**

## Convert Octal to Decimal

13. 41

14. 207

$$\Rightarrow$$
 2\*8^2 + 0\*8^1 + 7\*8^0  
 $\Rightarrow$  128 + 0 + 7

15. 124

$$\Rightarrow$$
 1\*8^2 + 2\*8^1 + 4\*8^0

$$\Rightarrow$$
 64 + 16 + 4

**⇒ 84** 

16. 311

$$\Rightarrow$$
 192 + 8 + 1

**⇒ 201** 

## • Convert Decimal to HexaDecimal

17. 317

В	ase	Quotient	Rem
10	6	317	13=D
10	6	19	3
10	6	1	1
10	6	0	

#### Answer:- 13D

18. 41

Base	Quotient	Rem	
16	41	9	
16	2	2	
16	0		
Answer:- 29			

19.14

Base	Quotient	Rem
16	14	E
16	0	

#### Answer:- E

20. 845

Base	Quotient	Rem
16	845	13=D
16	52	4
16	3	3
16	0	

#### Answer:- 34D

## Convert HexaDecimal to Decimal

21. A11

22. 49

23. AE2F

24. D97

⇒ 13\*16^2 + 9\*16^1 + 7\*16^0

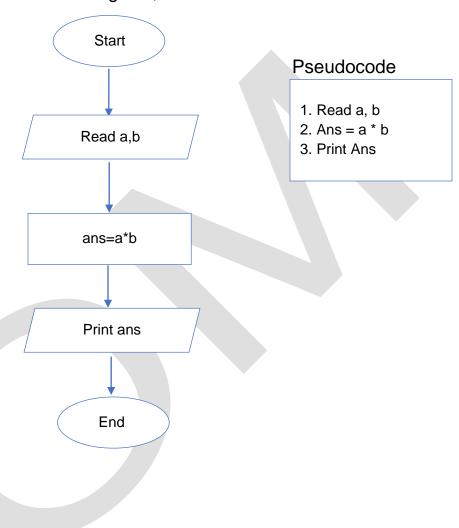
**⇒** 3328 + 144 + 7

⇒ 3479

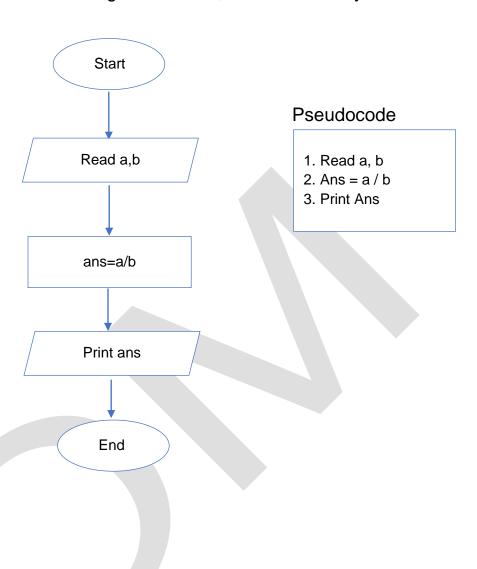


# Day 2/180 Flowchart and Pseudocode

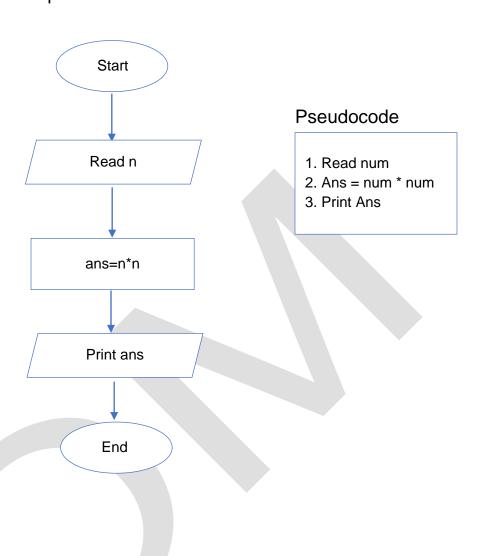
- Create Flowchart and write pseudocode
  - 1. Two numbers are given, find their Product.



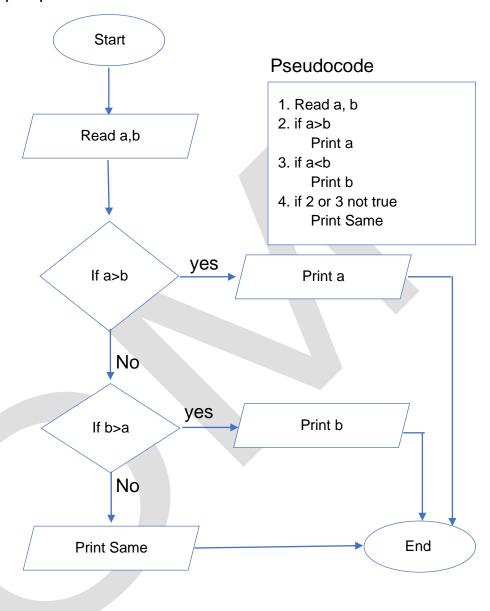
2. Two numbers are given a and b, find a divided by b.



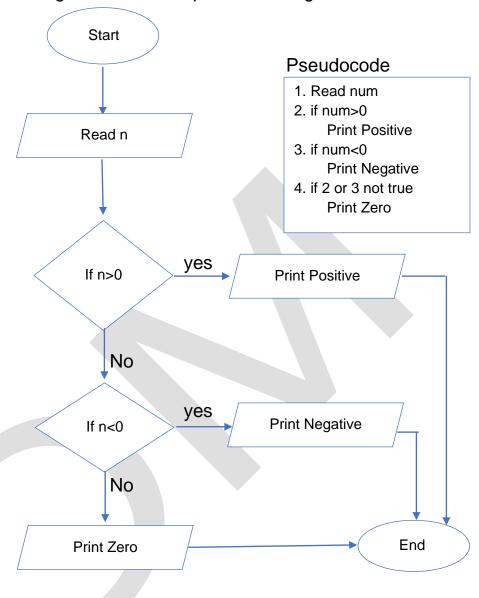
# 3. Find the square of a number.



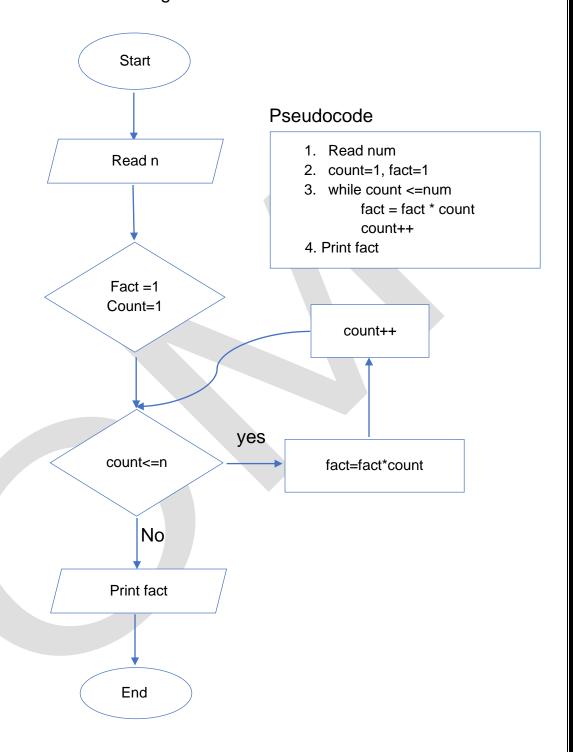
4. Two numbers a and b are given, find which is greater, if both are equal print the same.



5. A number is given, find if it is positive or negative or zero.



# 6. Find the factorial of a given number.



# Day 3/180 Introduction to c++

#### Print number

1. Two numbers are given, print their product

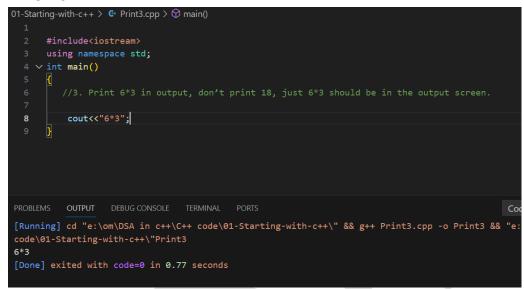
#### Answer:-

2. Two numbers are given a and b, print a-b

#### Answer:-

3. Print 6\*3 in output, don't print 18, just 6\*3 should be in the output screen.

#### Answer:-



4. If we have only 4 bits, How 3 and -6 will be written in 4 bits.

= 0011

#### Answer:-

3

5. If we have only 5 bits, How 13 and -16 will be written in 5 bits.

#### Answer:-

# Day 4/180 If-Else and For Loop

#### If-else

1. Two numbers are given, print the bigger number, It is given that both numbers can't be the same.

```
€ Bigger.cpp U X
02-if-else statement and Loop in c++ > Assignments-Solution > ⓒ Bigger.cpp > 礆 main()
       #include<iostream>
       using namespace std;
       int main(){
                  Two numbers are given, print the bigger number, It is given that both numb
           int a,b;
           cout<<"ENter First number: ";</pre>
           cin>>a;
           cout<<"ENter Second number: ";</pre>
  9
           cin>>b;
           if(a>b)
               cout<<a<<" is Greater than "<<b;</pre>
           else
               cout<<b<<" is Greater than "<<a;</pre>
                                   TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\
($?) { g++ Bigger.cpp -0 Bigger } ; if ($?) { .\Bigger }
ENter First number: 5
ENter Second number: 8
8 is Greater than 5
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution>
```

2. Age of a person is given, print Adult if his/her age is greater than 18, otherwise print Teenager.

```
G Bigger.cpp ∪
                   G AdultTeen.cpp U X
02-if-else statement and Loop in c++ > Assignments-Solution > G AdultTeen.cpp > \textcircled{p} main()
       #include<iostream>
       using namespace std;
       int main(){
                    Age of a person is given, print Adult if his/her age is greater than
           int age;
           cout<<"Enter Your Age: ";</pre>
           cin>>age;
           if(age>=18)
                cout<<"You are An Adult";</pre>
                cout<<"You are Teenager";</pre>
                                    TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\02-if-else statement and Loop
(\$?) { g++ AdultTeen.cpp -o AdultTeen } ; if (\$?) { .\AdultTeen }
Enter Your Age: 32
You are An Adult
PS E:\om\DSA in c++\C++ code\O2-if-else statement and Loop in c++\Assignments-Solution> cd
lse statement and Loop in c++\Assignments-Solution\"; if ($?) { g++ AdultTeen.cpp -o Adult
Enter Your Age: 12
You are Teenager
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution>
```

3. Take a number in input (ex n) and print the corresponding month to it. Ex: for n=1, print january, n=2, print feburary like this you need to give output. It is given that n will be greater than 0 and less than 13.

```
2-if-else statement and Loop in c++ > Assignments-Solution > 🤄 Month.cpp > 😚 main()
     #include<iostream>
     using namespace std;
     int main(){
         // 3. Take a number in input (ex n) and print the corresponding month to it.
                   Ex: for n=1, print january, n=2, print feburary like this you need to give output.
                  It is given that n will be greater than 0 and less than 13.
         int month;
         cout<<"Please Enter Month: ";</pre>
          cin>>month;
         if (month==1)
             cout<<"January";
         else if (month==2)
             cout<<"February";
          else if (month==3)
             cout<<"March";
          else if (month==4)
             cout<<"April";
          else if (month==5)
             cout<<"May";
          else if (month==6)
             cout<<"june";
          else if (month==7)
            cout<<"July";
          else if (month==8)
             cout<<"August";
          else if (month==9)
             cout<<"September";</pre>
          else if (month==10)
             cout<<"October";
         else if (month==11)
             cout<<"November";
         else if (month==12)
             cout<<"December";</pre>
            cout<<"Please enter correct month";</pre>
ROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution
Please Enter Month: 2
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution> cd "e:\om\DSA in c++\C++ code
Please Enter Month: 9
September
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution> cd "e:\om\DSA in c++\C++ code
Please Enter Month: 14
Please enter correct month
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution>
```

4. Ticket Price Calculator: Create a program that asks the user for their age and checks if they qualify for a discounted ticket price (e.g., under 12 and over 65 get discounts), If they are eligible print "YES" else "NO".

```
#include<iostream>
      using namespace std;
      int main(){
                  Ticket Price Calculator: Create a program that
          int age;
          cout<<"Enter Your Age: ";</pre>
          cin>>age;
          if(age<12)
              cout<<"YES";
          else if (age>65)
              cout<<"YES";</pre>
 16
              cout<<"No";</pre>
                                 TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assig
 ($?) { .\Ticket }
Enter Your Age: 66
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution> cd "e:\om\DSA
nts-Solution\" ; if ($?) { g++ Ticket.cpp -0 Ticket } ; if ($?) { .\Ticket }
Enter Your Age: 10
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution> cd "e:\om\DSA
nts-Solution\" ; if ($?) { g++ Ticket.cpp -0 Ticket } ; if ($?) { .\Ticket }
Enter Your Age: 45
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution>
```

# For Loop

**1.** Print "India will win the World Cup 2023", 20 times.

```
#include<iostream>
      using namespace std;
      int main(){
          for (int i = 1; i \le 20; i++)
              cout<<i<<. India will win the World Cup 2023"<<endl;</pre>
          OUTPUT DEBUG CONSOLE TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\
$?) { .\Print }
1. India will win the World Cup 2023
2. India will win the World Cup 2023
3. India will win the World Cup 2023
4. India will win the World Cup 2023
5. India will win the World Cup 2023
6. India will win the World Cup 2023
7. India will win the World Cup 2023
8. India will win the World Cup 2023
9. India will win the World Cup 2023
10. India will win the World Cup 2023
11. India will win the World Cup 2023
12. India will win the World Cup 2023
13. India will win the World Cup 2023
14. India will win the World Cup 2023
15. India will win the World Cup 2023
16. India will win the World Cup 2023
17. India will win the World Cup 2023
18. India will win the World Cup 2023
19. India will win the World Cup 2023
20. India will win the World Cup 2023
PS E:\om\DSA in c++\C++ code\02-if-else statement and Loop in c++\Assignments-Solution>
```

**2.** Print all Odd numbers from 1 to n, take n as an input from the user.

**3.** Print all numbers from 1 to n, which is divisible by 4. Take n as an input from the user.

# Day 5/180: For Loop in advance

1. Print number from 280 to 250 with the help of for loop.

#### Solution:-

2. Print char from 'A' to 'Z' with the help of a for loop.

3. Print char from 'Z' to 'A' with the help of a for loop.

#### Solution:-

4. There is an Arithmetic Progression, First number is 220 and Common Difference is 7. So print all the numbers from 220 to 730 which follow the AP.

5. Print Sum of square of first n natural number.

#### Solution:-

```
03-Questions on Loop > Assignments-Solution >  Print05.cpp >  main()
       #include<iostream>
       using namespace std;
       int main(){
                   Print Sum of square of first n natural number.
           int n,sum=0;
           cout<<"Enter the number: ";</pre>
           cin>>n;
           for (int i = 1; i <= n; i=i+1)
               sum=sum+i*i;
           cout<<"Sum of square of first "<<n<<" natural number is: "<<sum;</pre>
 12
                                   TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\03-Questions on Loop\Assignm
Enter the number: 3
Sum of square of first 3 natural number is: 14
PS E:\om\DSA in c++\C++ code\03-Questions on Loop\Assignments-Solution> cd "e:\om\DSA in
rint05.cpp -o Print05 }; if ($?) { .\Print05 }
Enter the number: 5
Sum of square of first 5 natural number is: 55
PS E:\om\DSA in c++\C++ code\03-Questions on Loop\Assignments-Solution>
```

6. Print Sum of cube of first n natural number

```
#include<iostream>
      using namespace std;
      int main(){
          int n,sum=0;
          cout<<"Enter the number: ";</pre>
          cin>>n;
          for (int i = 1; i \le n; i=i+1)
              sum=sum+i*i*i;
 10
          cout<<"Sum of cube of first "<<n<<" natural number is: "<<sum;</pre>
PROBLEMS.
          OUTPUT DEBUG CONSOLE
                                 TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\03-Questions on Loop\
t06 }
Enter the number: 3
Sum of cube of first 3 natural number is: 36
PS E:\om\DSA in c++\C++ code\03-Questions on Loop\Assignments-Solution> cd "e:\om
rint06.cpp -0 Print06 } ; if ($?) { .\Print06 }
Enter the number: 5
Sum of cube of first 5 natural number is: 225
PS E:\om\DSA in c++\C++ code\03-Questions on Loop\Assignments-Solution> []
```

7. Print n'th Fibonacci number.

```
03-Questions on Loop → Assignments-Solution → G Print07.cpp → 分 main()
       #include<iostream>
       using namespace std;
       int main(){
           int n,curr,last=0,prev=1;
           cout<<"Enter Number ";</pre>
           cin>>n;
           for (int i = 1; i < n-1; i++)
              curr=last+prev;
               last=prev;
               prev=curr;
           cout<<n<<"th fibonacii series is: "<<curr;</pre>
 13
                                    TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\03-Questions on Loop\Assignme
t07 }
Enter Number 5
5th fibonacii series is: 3
PS E:\om\DSA in c++\C++ code\03-Questions on Loop\Assignments-Solution> cd "e:\om\DSA in
rint07.cpp -0 Print07 } ; if ($?) { .\Print07 }
Enter Number 9
9th fibonacii series is: 21
PS E:\om\DSA in c++\C++ code\03-Questions on Loop\Assignments-Solution>
```