Day : Loops and Iterations (5-8-2025)

1. Write a program to print numbers from 1 to 100.

Input: to get a value as input and say n.

Process:to get a value from 1 to 100 using the condition number <=n.

Output:the output is to store print numbers from 1 to 100.

Program:

```
#include<stdio.h>
void main()
{
 int n,i;
 scanf("%d",&n);
 for(i=1;i<=n;i++)
 printf(" %d",i);
}
```

Output Clear

```
100
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
     29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
     53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76
     77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99
     100
```

2. Write a program to print even numbers from 1 to 50.

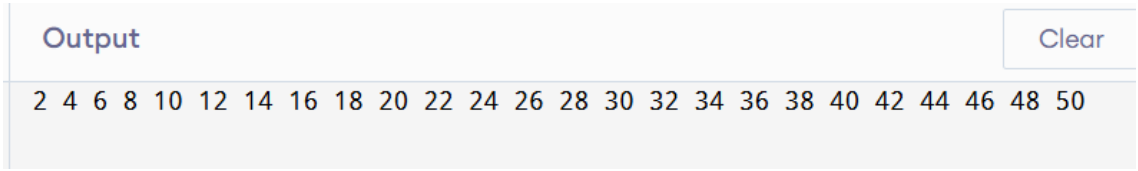
Input: to get a value as input and say n.

Process:if i% 2 equal equal to zero print even numbers .

Output: :the output id to give even numbers.

Program:

```
#include<stdio.h>
void main()
{
  int n=50,i;
  for(i=1;i<=n;i++)
  {
    if(i%2==0)
  }
  printf("%d\n",i);
}
```



3.Write a program to find the factorial of a number.

Input:to get 3 vvalues as input say n,I,f.

Process:to find the factorial f=f*i.

Output:the output the factorial is store in f.

Program:

```
#include<stdio.h>
void main()
{
  int n=4,i,f=1;
  for(i=1;i<=n;i++)
  {
    f=f*i;
  }
  printf("f=%d\n",f);
}
```

Output

```
f=24
```

4.Write a program to calculate the sum of digits of a number.

Input:to get a values say count,n,sum,r.

Process:to calculate the sum of a digits of a number by sum=sum+r.

Output:th output is to add the number.

Program:

```
#include<stdio.h>
void main()
{
  int n,count=0,r,sum=0;
  scanf("%d",&n);
  while(n>0)
  {
     r=n%10;
     sum=sum+r;
     count++;
     n=n/10;
  }
  printf("%d",sum);
}
```

Output

```
455
14
```

5.Write a program to reverse a number.

Input:to get 3 values as input say n,rev,r.

Process:to find the reveerse of a number by reverse=reverse*10+r.

Output:the to reverse a number.

Program:

```
#include<stdio.h>
void main()
{
  int n,rev=0,r;
  scanf("%d",&n);
  while(n!=0)
  {
     r=n%10;
     rev=rev*10+r;
     n=n/10;
  }
  printf("%d",rev);
}
```

Output

```
356
653
```

6.Write a program to check whether a number is a palindrome.

Input: to get 3 values as input say rev,c,r,on,n.

Process: if rev==on print palindrome ,else not palindrome.

Output: the output is palindrome or not.

Program:

```
#include<stdio.h>
void main()
{
  int r,n,on,rev=0,c=100;
  scanf("%d",&on);
  n=on;
  while(n>0)
  {
     r=n%10;
     rev=rev+r*c;
     n=n/10;
     c=c/10;
  }
  printf("%d",rev);
  if(rev==on)
  {
     printf("it is palindrome");
  }
  else
  printf("it is not palindrome");
}
```

Output

```
808
808it is palindrome
```

7.Write a program to print multiplication table of a number.

Input:to get a input as a,n,i.

Process:to find a multiples of table using I,n,i*n.

Output:to print a multiplication table of a number.

Program:

```
#include<stdio.h>
void main()
{
   int n=5,i,a=10;
   for(i=1;i<=a;i++)
   {
     printf("%d*%d=%d\n",i,n,i*n);
   }
}
```

Output

```
1*5=5
2*5=10
3*5=15
4*5=20
5*5=25
6*5=30
7*5=35
8*5=40
9*5=45
10*5=50
```

8.Write a program to count the number of digits in a number.

Input:get a value as input say n.

Process:to count the numberof digits in a number using n>0,count=0.

Output:the number of digits.

Program:

```
#include<stdio.h>
void main()
{
   int n=115,r,count=0;
   while(n>0)
   {
      r=n%10;
      count++;
      n=n/10;
   }
   printf("%d",count);
}
```

Output

```
3
```

9.Write a program to print the Fibonacci series up to n terms.

Input:to get a value as input.

Process:fibonaccinseries upto n=5 by f=s,s=t,t=f+s.

Output:the value of Fibonacci series.

Program:

```
#include<stdio.h>
void main()
{
   int f=0,s=1,t,i;
   printf("%d %d",f,s);
   for(i=1;i<=5;i++)
   {
      t=f+s;
      printf(" %d",t);
      f=s;
      s=t;
   }
}
```

Output

```
0 1 1 2 3 5 8
```

10.Write a program to calculate the sum of the first n natural numbers.

Input:to get 3 values as input say n,I,sum.

Process:to find the sum of natural numbers using sm=sum+i.

Output:the out put is sum of n natural numbers.

Program:

```
#include<stdio.h>
void main()
{
  int n=5,i,sum=0;
   for(i=1;i<=n;i++)
   {
      sum=sum+i;
   }
   printf("sum=%d\n",sum);
}
```

Output

```
sum=15
```