Recursion

A recursion is a function which is call itself.

```c
#include<stdio.h>

int fun(int n)
{
  If(n==1) return 1;
   return 1 + fun(n-1);
}

int main()
{
   int n=3;

   printf("%d",fun(n));

   return 0;
}
```

```c
#include<stdio.h>

int power(int a,int n)
{
   if(n==0)return 1;
   return a * power(a, n-1);
}

int main()
{
   int n=3,a=3;

   printf("%d",power(a,n));

   return 0;
}
```

```c
#include<stdio.h>

int fact(int n)
{
   if(n==0)return 1;
   return n * fact(n-1);
}

int main()
{
   int n=5;
   printf("%d",fact(n));

   return 0;
}
```

```c
#include<stdio.h>
int sum(int n)
{
   if(n==0)return 0;
   return n + sum(n-1);
}

int main()
{
   int n=10;

   printf("%d",sum(n));

   return 0;
}
```

```c
#include<stdio.h>

int sum(int ara[], int n)
{
    if(n==0)return ara[0];

    return ara[n] + sum(ara,n-1);
}


int main()
{
    int ara[]={1,2,3,4};


    printf("%d",sum(ara,3));

    return 0;
}
```

Lab work:

1. C program to generate Fibonacci series using recursion.

Assignment:

1. Find the sum of your roll number using recursion.