# DAY-9

## 1. Write a Program to check whether the given Number is prime or not?

## Code:

```
#include<stdio.h>
int main(){
   printf("Enter Number to check::\n");
   int a;
   scanf("%d",&a);
   prime(a);
}
void prime(int a){
   if(a<=1){
    printf("%d is not prime Number\n",a);
    return ;
   }
   int c=0;
   for(int i=2;i<a;i++){
      if(a%i==0){
         c++;
      }
   }
   if(c==0){
      printf("%d is prime Number\n",a);
   }
   else
      printf("%d is not  prime Number\n",a);
```

}

**Output:**

```
Enter Number to check::
12
12 is not  prime Number
```

## 2. Write a program to find n Number of fibnocci Numbers by using Recursion.

**Code:**

```
#include <stdio.h>

int fibonacci(int n) {
        if(n == 0)
                return 0;
        else if(n == 1)
                return 1;
        else
                return (fibonacci(n-1) + fibonacci(n-2));
}

int main() {
        int n;

        printf("Enter the number of terms\n");
        scanf("%d", &n);

        printf("Fibonacci Series: ");

        for (int i = 0; i < n; i++) {
                printf("%d ", fibonacci(i));
        }

        return 0;
}
```

**Output:**

```
Enter the number of terms
10
Fibonacci Series: 0 1 1 2 3 5 8 13 21 34
```

## 3. Write a program to move the disks which is called as a Tower of Hanoi by using recursion.

## Code:

```
#include <stdio.h>
void hanoi(int n, char from, char to, char via) {
  if(n == 1){
    printf("Move disk 1 from %c to %c\n", from, to);
  }
  else{
    hanoi(n-1, from, via, to);
    printf("Move disk %d from %c to %c\n", n, from, to);
    hanoi(n-1, via, to, from);
  }
}
int main() {
  int n = 3;
  char from = 'A';
  char to = 'B';
  char via = 'C';
  hanoi(n, from, via, to);
}
```

## Output:

```
Move disk 1 from A to C
Move disk 2 from A to B
Move disk 1 from C to B
Move disk 3 from A to C
Move disk 1 from B to A
Move disk 2 from B to C
Move disk 1 from A to C
```