NAME: YELETI RISHITHA REDDY (192424233)

COURSE NAME : DATA STRUCTURES FOR MODERN COMPUTING SYSTEMS

COURSE CODE : CSA0302

9. WRITE A C PROGRAM TO PERFORM FIBONACCI SERIES WITH RECURSIVE FUNCTION

C PROGRAMMING CODE:

```c
#include <stdio.h>

int main() {
int n, i, a = 0, b = 1, c;
printf("Enter number of terms: ");
scanf("%d", &n);
printf("Fibonacci Series: %d %d ", a, b);
for (i = 2; i < n; i++) {
c = a + b;
printf("%d ", c);
a = b;
b = c;
}
return 0;
}
```

OUTPUT:

```
main.c                                    Share    Run    Output

1  #include <stdio.h>                             Enter number of terms: 5
2                                                 Fibonacci Series: 0 1 1 2 3
3  int fib(int n) {
4      if (n <= 1)                                === Code Execution Successful ===
5          return n;
6      return fib(n - 1) + fib(n - 2);
7  }
8
9  int main() {
10     int n, i;
11     printf("Enter number of terms: ");
12     scanf("%d", &n);
13     printf("Fibonacci Series: ");
14     for (i = 0; i < n; i++)
15         printf("%d ", fib(i));
16     return 0;
17 }
18
```

10.WRITE A C PROGRAM TO PERFORM FIBONACCI SERIES WITH OUT RECURSIVE FUNCTION

C PROGRAMMING CODE:

```c
#include <stdio.h>
int main() {
int n, i, a = 0, b = 1, c;
printf("Enter number of terms: ");
scanf("%d", &n);
printf("Fibonacci Series: %d %d ", a, b);
for (i = 2; i < n; i++) {
c = a + b;
printf("%d ", c);
a = b;
b = c;
}
return 0;
}
```

OUTPUT:

```c
#include <stdio.h>

int main() {
    int n, i, a = 0, b = 1, c;
    printf("Enter number of terms: ");
    scanf("%d", &n);
    printf("Fibonacci Series: %d %d ", a, b);
    for (i = 2; i < n; i++) {
        c = a + b;
        printf("%d ", c);
        a = b;
        b = c;
    }
    return 0;
}
```

Output
```
Enter number of terms: 4
Fibonacci Series: 0 1 1 2

=== Code Execution Successful ===
```