

ADA -LAB-1

```
#include <stdio.h>

void towerfun(int, char, char, char);

int main()
{
    int n; // defined to store the number disc
    printf("Enter the number of disks : ");
    scanf("%d", &n);
    printf("The sequence of moves involved in the Tower of Hanoi  
are :\n");
    towerfun(n, 'A', 'C', 'B'); // A, B, C are tower
    return 0;
}

void towerfun(int n, char fr, char tr, char ar)
{
    if (n == 1)
    {
        printf("\n Move disk 1 from rod %c to rod %c", fr, tr);
        return;
    }
    towerfun(n - 1, fr, ar, tr);
    printf("\n Move disk %d from rod %c to rod %c", n, fr, tr);
    towerfun(n - 1, ar, tr, fr);
}
```

```
Enter the number of disks : 3
The sequence of moves involved in the Tower of Hanoi are :

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

...Program finished with exit code 0
Press ENTER to exit console.[]
```

```
#include <stdio.h>

int gcd_algorithm(int x, int y)
{
    if (y == 0) {
        return x;
    } else if (x >= y && y > 0) {
        return gcd_algorithm(y, (x % y));
    }
}

int main(void)
{
    int num1, num2, gcd;

    printf("\nEnter two numbers to find gcd using Euclidean
algorithm: ");
    scanf("%d%d", &num1, &num2);

    gcd = gcd_algorithm(num1, num2);

    if (gcd)
        printf("\nThe GCD of %d and %d is %d\n", num1, num2, gcd);
    else
```

```
        printf("\nInvalid input!!!\n");  
  
    return 0;  
  
}
```

```
Enter two numbers to find gcd using Euclidean algorithm: 288  
108  
The GCD of 288 and 108 is 36  
...Program finished with exit code 0  
Press ENTER to exit console.[]
```