

## Experiment 5

**Objective:** Implementation of Tower of Hanoi using Recursion

**Code:**

```
#include <stdio.h>
```

```
void tower(int n,char x,char y,char z);
```

```
int main()
```

```
{
```

```
    int n;
```

```
    printf("Enter the number of disks: ");
```

```
    scanf("%d",&n);
```

```
    tower(n,'A','B','C');
```

```
    return 0;
```

```
}
```

```
void tower(int n,char x,char y,char z)
```

```
{
```

```
    if (n==1)
```

```
    {
```

```
        printf("\nDisk 1 is moved from rod %c to rod %c",x,y);
```

```
        return;
```

```
    }
```

```
    tower(n-1,x,z,y);
```

```
    printf("\nDisk %d is moved from rod %c to rod %c",n,x,y);
```

```
    tower(n-1,z,y,x);
```

```
}
```

## Output:

```
Enter the number of disks: 5
Disk 1 is moved from rod A to rod B
Disk 2 is moved from rod A to rod C
Disk 1 is moved from rod B to rod C
Disk 3 is moved from rod A to rod B
Disk 1 is moved from rod C to rod A
Disk 2 is moved from rod C to rod B
Disk 1 is moved from rod A to rod B
Disk 4 is moved from rod A to rod C
Disk 1 is moved from rod B to rod C
Disk 2 is moved from rod B to rod A
Disk 1 is moved from rod C to rod A
Disk 3 is moved from rod B to rod C
Disk 1 is moved from rod A to rod B
Disk 2 is moved from rod A to rod C
Disk 1 is moved from rod B to rod C
Disk 5 is moved from rod A to rod B
Disk 1 is moved from rod C to rod A
Disk 2 is moved from rod C to rod B
Disk 1 is moved from rod A to rod B
Disk 3 is moved from rod C to rod A
Disk 1 is moved from rod B to rod C
Disk 2 is moved from rod B to rod A
Disk 1 is moved from rod C to rod A
Disk 4 is moved from rod C to rod B
Disk 1 is moved from rod A to rod B
Disk 2 is moved from rod A to rod C
Disk 1 is moved from rod B to rod C
Disk 3 is moved from rod A to rod B
Disk 1 is moved from rod C to rod A
Disk 2 is moved from rod C to rod B
Disk 1 is moved from rod A to rod B
...Program finished with exit code 0
Press ENTER to exit console.
```

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