

main.c

```
1  #include<stdio.h>
2  #include <time.h>
3  void towers(int n,char s, char t, char d)
4  {
5      if(n==1){
6          printf("Move disk 1 from %c to %c\n",s,d);
7          return;
8      }
9      towers(n-1,s,d,t);
10     printf("Move disk %d from %c to %c\n",n,s,d);
11     towers(n-1,t,s,d);
12 }
13 int main()
14 {
15     int n;
16     float start, end;
17     printf("Enter no. of disks : ");
18     scanf("%d",&n);
19     start = clock();
20     towers(n,'S','T','D');
21     end = clock();
22     float ti = ((double)(end - start)/CLOCKS_PER_SEC);
23     printf("\nTime taken: %f", ti);
24     return 0;
25 }
```


Console

Shell

```
> clang-7 -pthread -lm -o main main.c
```

```
> ./main
```

```
Enter no. of disks : 3
```

```
Move disk 1 from S to D
```

```
Move disk 2 from S to T
```

```
Move disk 1 from D to T
```

```
Move disk 3 from S to D
```

```
Move disk 1 from T to S
```

```
Move disk 2 from T to D
```

```
Move disk 1 from S to D
```

```
Time taken: 0.000049> []
```


main.c

```
1  #include<stdio.h>
2  #include <time.h>
3  int count=0;
4  void towers(int n,char s, char t, char d)
5  {
6      count++;
7      if(n==1){
8          printf("Move disk 1 from %c to %c\n",s,d);
9          return;
10     }
11     towers(n-1,s,d,t);
12     printf("Move disk %d from %c to %c\n",n,s,d);
13     towers(n-1,t,s,d);
14 }
15 int main()
16 {
17     int n;
18     float start, end;
19     printf("Enter no. of disks : ");
20     scanf("%d",&n);
21     start = clock();
22     towers(n,'S','T','D');
23     end = clock();
24     float ti = ((double)(end - start)/CLOCKS_PER_SEC);
25     printf("\nTime taken: %f", ti);
26     printf("\n count is : %d",count);
27 }
```


Modification



Run ▶

main.c

```
24 float ti = ((double)(end - start)/CLOCKS_PER_SEC);
25 printf("\nTime taken: %f", ti);
26 printf("\n count is : %d",count);
27 return 0;
28 }
```




Console

Shell

```
> clang-7 -pthread -lm -o main main.c
```

```
> ./main
```

```
Enter no. of disks : 4
```

```
Move disk 1 from S to T
```

```
Move disk 2 from S to D
```

```
Move disk 1 from T to D
```

```
Move disk 3 from S to T
```

```
Move disk 1 from D to S
```

```
Move disk 2 from D to T
```

```
Move disk 1 from S to T
```

```
Move disk 4 from S to D
```

```
Move disk 1 from T to D
```

```
Move disk 2 from T to S
```

```
Move disk 1 from D to S
```

```
Move disk 3 from T to D
```

```
Move disk 1 from S to T
```

```
Move disk 2 from S to D
```

```
Move disk 1 from T to D
```

```
Time taken: 0.000066
```

```
count is : 15> []
```