main.c

```c
#include<time.h>
#include <stdio.h>
int TOH(int,char,char,char);
int main()
{
  int n;
    clock_t t;
   t = clock();
  printf("\nEnter number of plates:");
  scanf("%d",&n);
   int c = TOH(n,'A','C','B');
   printf("\n");
   printf("Total number of moves = %d \n ", c);
   t = clock() - t;
   double time_taken = ((double)t)/CLOCKS_PER_SEC; // in
   seconds
   printf("ALGO took %f seconds to execute \n", time_taken)
   ;
  return 0;
  }
  int TOH(int n,char first,char third,char second)
 {
   int count;
  if(n>0){
      count=TOH(n-1, first, second, third);
      printf("Move disk %d from peg %c to peg %c ", n,
      first, third);
      count++;
      count+= TOH(n-1, second, third, first);
```

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Run ▶

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```c
    clock_t t;
 t = clock();
printf("\nEnter number of plates:");
scanf("%d",&n);
 int c = TOH(n,'A','C','B');
 printf("\n");
 printf("Total number of moves = %d \n ", c);
  t = clock() - t;
 double time_taken = ((double)t)/CLOCKS_PER_SEC; // in
 seconds
 printf("ALGO took %f seconds to execute \n", time_taken)
 ;
return 0;
}
int TOH(int n,char first,char third,char second)
{
 int count;
if(n>0){
   count=TOH(n-1, first, second, third);
   printf("Move disk %d from peg %c to peg %c\n", n,
   first, third);
   count++;
   count+= TOH(n-1, second, third, first);
   }
 return count;
}
```

Console Shell

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

Enter number of plates:3
Move disk 1 from peg A to peg C
Move disk 2 from peg A to peg B
Move disk 1 from peg C to peg B
Move disk 3 from peg A to peg C
Move disk 1 from peg B to peg A
Move disk 2 from peg B to peg C
Move disk 1 from peg A to peg C

Total number of moves = 7
 ALGO took 0.000193 seconds to execute
```

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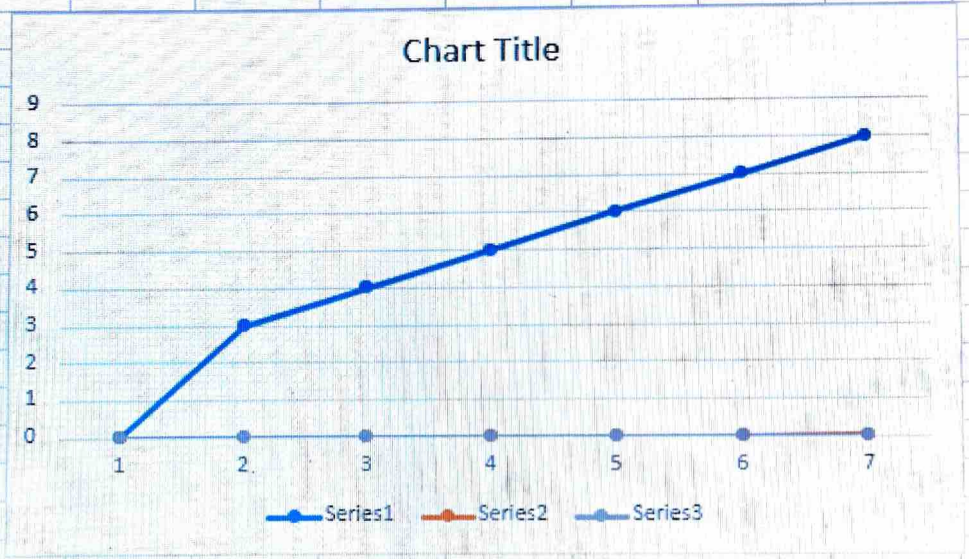
Calibri 11 B General

A8 fx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	N (NO.)	TIME TO EXEECUTE (sec)																
2	3	0.000193																
3	4	0.000309																
4	5	0.000441																
5	6	0.000506																
6	7	0.001137																
7	8	0.004356																
8																		



Sheet1 +

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