Tower of Hanoi

Tower of Hanoi is a mathematical puzzle where there are three rods and n disks. The objective of the puzzle is to move the entire stack to another rod, obeying the following simple rules:

1. Only one disk can be moved at a time.
2. Only the upper disk can be moved and placed.
3. No disk may be placed on top of a smaller disk.

Recursion is a function in itself and is useful in solving problems which can be broken down into smaller problems of the same kind. To implement the recursion in the tower of hanoi, we need to create a void that calculate whether n==1 and creating a recursion by putting Hanoi(n-1, from_rod, aux_rod, to_rod); and Hanoi(n-1, aux_rod, to_rod, from_rod);.

Code:

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

void Hanoi(int n, char first_rod, char third_rod, char second_rod) {
        if (n == 1) {
        printf("\n Move disk 1 from rod %c to rod %c", first_rod, third_rod);
        return;
}
        Hanoi(n-1, first_rod, second_rod, third_rod);
        printf("\n Move disk %d from rod %c to rod %c", n, first_rod, third_rod);
        Hanoi(n-1, second_rod, third_rod, first_rod);
}

int main() {
        int n = 16;
```

```
	clock_t begin = clock();
	Hanoi(n, 'A', 'C', 'B');
	clock_t end = clock();
	double time_spent = (double)(end - begin) / CLOCKS_PER_SEC;
	printf("\n%f second\n", time_spent);
	return 0;
}
```

CPU: 11th Gen Intel(R) Core(TM) i7-1165G7 @ 2.80GHz   2.80 GHz

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