আমাদের সবগুলো ক্লাস দেখার জন্য ভিজিট করো
https://www.hsccrackers.com/

SCAN ME

Pass By Reference

Recursion

Write a program in C to print the Hello World 10 Times using recursion

```c
#include <stdio.h>

int printhello(int n){
    if(n==0){
        return 1;
    }
    printf("Hello World\n");
    printhello(n-1);
}

int main(){
  int n=10;
  printhello(n);
  return 0;
}
```

Recursion

Write a program in C to print the first n natural numbers using recursion

```c
#include <stdio.h>

int fun(int n){
    if(n==50){
        return 1;
    }
    printf("%d",n);
    fun(n+1);
}

int main(){
  int n=1;
  fun(n);
  return 0;
}
```

Recursion

Write a program in C to sum the first n natural numbers using recursion

```c
#include <stdio.h>

int fun(int n){
    if(n==1){
        return 1;
    }
    return fun(n-1)+n;
}

int main(){
  int n=100;
  int sum=fun(n);
  printf("%d",sum);
  return 0;
}
```

Recursion

Write a program in C to find the sum of digits of a number using recursion

```c
#include <stdio.h>

int fun(int n){
    if(n==0){
        return 0;
    }
    return fun(n/10)+(n%10);
}

int main(){
  int n=32414;
  int sum=fun(n);
  printf("%d",sum);
  return 0;
}
```

Recursion

Write a program in C to count the digits of a given number using recursion

```c
#include <stdio.h>

int count=0;

int fun(int n){
    if(n==0){
        return 0;
    }
    count++;
    return fun(n/10);
}

int main(){
  int n=32414;
  fun(n);
  printf("%d",count);
  return 0;
}
```

Recursion

Write a program in C to print the nth Fibonacci Number using recursion

```c
#include <stdio.h>

int fib(int n){
    if(n==1){
        return 1;
    }
    if(n==0){
        return 0;
    }
    return fib(n-1)+fib(n-2);
}

int main(){
  int n=6;
  int f=fib(n);
  printf("%d",f);
  return 0;
}
```

Problem 2: Count Bacteria Population

A certain species of bacterium reproduces according to the following rules:

- A bacterium born in day n does not give birth to new bacteria in day n and day n+1.
- A bacterium born on day n gives birth to 1 bacterium on day n+2.
- A bacterium born in day n gives birth to 2 bacteria in day n + k, for each k > 2, i.e., a bacterium born in day n gives birth to 2 bacteria from the (n+3)rd day onwards.
- A bacterium does not die.

Let P_n denote the population of bacteria on day n. It is provided that $P_0=0$ and $P_1=1$. In this problem, n is given as input, you have to output P_n. For example, $P_2=1$ because the bacteria born on day 1 does not replicate on day 2. On day 3, a bacterium is born of the 1st bacteria. So, $P_3=2$. On day 4, 2 bacteria are born of the 1st bacteria and none of the 2nd. So, $P_4=4$.

Restrictions:
Arrays cannot be used for this task. Use a recursive method with the following prototype:

```
int bacteriaCount(int n)
```

Sample Input(s)	Corresponding Output(s)
1	1
2	1
3	2
4	4
5	7
6	13
8	44
10	149