Write a C program to print all-natural numbers between 1 to n using recursion.

```c
#include<stdio.h>
void display(int);
int main()
{
    int limit;
    printf("Enter the number of terms to be printed:");
    scanf("%d", &limit);
    printf("Natural Numbers from 1 To %d are:", limit);
    display(limit);
}

void display(int num)
{
    if(num)
        display(num-1);
    else
        return;

    printf("%d ", num);
}
```

input

```
Enter the number of terms to be printed:5
Natural Numbers from 1 To 5 are:1 2 3 4 5

...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to print all even or odd numbers in given range using recursion.

```c
#include <stdio.h>
void printEvenOdd(int cur, int limit);
int main()
{
    int lowerLimit, upperLimit;
    printf("Enter lower limit: ");
    scanf("%d", &lowerLimit);
    printf("Enter upper limit: ");
    scanf("%d", &upperLimit);

    printf("Even/odd Numbers from %d to %d are: ", lowerLimit, upperLimit);
    printEvenOdd(lowerLimit, upperLimit);
}
void printEvenOdd(int cur, int limit)
{
    if(cur > limit)
        return;

    printf("%d, ", cur);
    printEvenOdd(cur + 2, limit);
}
```

```
Input
Enter lower limit: 3
Enter upper limit: 8
Even/odd Numbers from 3 to 8 are: 3, 5, 7,

...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to find sum of all-natural numbers between 1 to n using recursion.

```c
#include <stdio.h>

int main()
{
    int i, n, sum=0;
    printf("Enter upper limit: ");
    scanf("%d", &n);
    for(i=1; i<=n; i++)
    {
        sum += i;
    }
    printf("Sum of first %d natural numbers = %d", n, sum);
}
```

input

```
Enter upper limit: 8
Sum of first 8 natural numbers = 36

...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to find sum of all even or odd numbers in given range using recursion.

```c
#include <stdio.h>
int sumOfEvenOdd(int start, int end);
int main()
{
    int start, end, sum;
    printf("Enter lower limit: ");
    scanf("%d", &start);
    printf("Enter upper limit: ");
    scanf("%d", &end);

    printf("Sum of even/odd numbers between %d to %d = %d\n", start, end, sumOfEvenOdd(start, end));

    return 0;
}
int sumOfEvenOdd(int start, int end)
{
    if(start > end)
        return 0;
    else
        return (start + sumOfEvenOdd(start + 2, end));
}
```

input

```
Enter lower limit: 13
Enter upper limit: 21
Sum of even/odd numbers between 13 to 21 = 85


...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to find reverse of any number using recursion.

```c
#include <stdio.h>

int reversedNbr=0, remainder;
reverse(int nbr){
   if(nbr){
      remainder = nbr%10;
      reversedNbr = reversedNbr * 10 + remainder;
      reverse(nbr/10);
   }
   else
      return reversedNbr;
   return reversedNbr;
}
int main()
{
   int r, nbr;
   printf("Enter a number to reverse: ");
   scanf("%d", &nbr);
   r = reverse(nbr);
   printf("The reversed number is = %d\n", r);
}
```

```
Enter a number to reverse: 34
The reversed number is = 43


...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to check whether a number is palindrome or not using recursion.

```c
#include <stdio.h>
int main()
{
    int n, reversed = 0, remainder, original;
    printf("Enter an integer: ");
    scanf("%d", &n);
    original = n;
    while (n != 0)
    {
        remainder = n % 10;
        reversed = reversed * 10 + remainder;
        n /= 10;
    }
    if (original == reversed)
        printf("%d is a palindrome.", original);
    else
        printf("%d is not a palindrome.", original);
}
```

input

```
Enter an integer: 12344321
12344321 is a palindrome.

...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to find sum of digits of a given number using recursion.

```c
#include <stdio.h>

int sumOfDigits(int num);
int main()
{
    int num, sum;
    printf("Enter any number to find sum of digits: ");
    scanf("%d", &num);
    sum = sumOfDigits(num);
    printf("Sum of digits of %d = %d", num, sum);
}

int sumOfDigits(int num)
{
    if(num == 0)
        return 0;

    return ((num % 10) + sumOfDigits(num / 10));
}
```

```
input
Enter any number to find sum of digits: 1321345
Sum of digits of 1321345 = 19

...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to generate nth Fibonacci term using recursion.

```c
#include <stdio.h>

unsigned long long fibo(int num);

int main()
{
    int num;
    unsigned long long fibonacci;
    printf("Enter any number to find nth fiboacci term: ");
    scanf("%d", &num);

    fibonacci = fibo(num);

    printf("%d fibonacci term is %llu", num, fibonacci);

    return 0;
}
unsigned long long fibo(int num)
{
    if(num == 0)
        return 0;
    else if(num == 1)
        return 1;
    else
        return fibo(num-1) + fibo(num-2);
}
```

input

```
Enter any number to find nth fiboacci term: 9
9 fibonacci term is 34

...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to find GCD (HCF) of two numbers using recursion.

```c
#include <stdio.h>

int gcd(int a, int b);

int main()
{
    int num1, num2, hcf;
    printf("Enter any two numbers to find GCD(HCF): ");
    scanf("%d%d", &num1, &num2);

    hcf = gcd(num1, num2);

    printf("GCD(HCF) of %d and %d = %d", num1, num2, hcf);

    return 0;
}

int gcd(int a, int b)
{
    if(b == 0)
        return a;
    else
        return gcd(b, a%b);
}
```

input

```
Enter any two numbers to find GCD(HCF): 120 22
GCD(HCF) of 120 and 22 = 2

...Program finished with exit code 0
Press ENTER to exit console.
```

Write a C program to find LCM of two numbers using recursion.

```c
#include <stdio.h>
int gcd(int x, int y);

int main()
{
    int num1, num2, hcf, lcm;
    printf("Enter two integer numbers:");
    scanf("%d %d", &num1, &num2);

    hcf = gcd(num1, num2);
    printf("LCM: %d", (num1 * num2) / hcf);
    return 0;
}

int gcd(int x, int y)
{
    if (y == 0)
    {
        return x;
    }
    else
    {
        return gcd(y, x % y);
    }
}
```

input

```
Enter two integer numbers:34 7
LCM: 238

...Program finished with exit code 0
Press ENTER to exit console.
```