Recursion in C Language

1. Write a recursive function to print first N natural numbers

```c
#include<stdio.h>
void sum(int n)
{
    if(n>0)
    {
    sum(n-1);
    printf("%d ",n);
    }

}
int main()
{
    int a;
    printf("enter any number: ");
    scanf("%d",&a);
    sum(a);
    return 0;
}
```

2. Write a recursive function to print first N natural numbers in reverse order

```c
#include<stdio.h>

void rev(int n)
{
    int i=1;
    if(n>0)
    {
        printf("%d ",n);
        rev(n-1);
    }
}
int main()
{
    int a;
    printf("enter value : ");
    scanf("%d",&a);
    rev(a);
    return 0;
}
```

3. Write a recursive function to print first N odd natural numbers

```c
// Write a recursive function to print first N odd natural numbers
#include<stdio.h>

void odd(int n)
{
    if(n>0)
    {
        odd(n-1);
        printf("%d ",n*2-1);
```

```c
    }
}
int main()
{
    int a;
    printf("enter any value: ");
    scanf("%d",&a);
    odd(a);
    return 0;
}
```

4. Write a recursive function to print first N odd natural numbers in reverse order

```c
#include<stdio.h>
void odd_rev(int a)
{
    if(a>0)
    {
        printf("%d ",a*2-1);
        odd_rev(a-1);
    }
    return;
}
int main()
{
    int n;
    printf("enter any number: ");
    scanf("%d",&n);
    odd_rev(n);
    return 0;
}
```

5. Write a recursive function to print first N even natural numbers

```c
#include <stdio.h>
void even(int n)
{
    if (n > 0)
    {
        even(n - 1);
        printf("%d ", n * 2);
    }
    return;
}
int main()
{
    int n;
    printf("enter any number: ");
    scanf("%d", &n);
    even(n);
    return 0;
}
```

6. Write a recursive function to print first N even natural numbers in reverse order

```c
#include<stdio.h>
void rev_even(int n)
{
    if(n>0)
    {
        printf("%d ",n*2);
        rev_even(n-1);
    }
    return 0;
}
```

```c
int main()
{
    int n;
    printf("enter any number: ");
    scanf("%d",&n);
    rev_even(n);
    return 0;
}
```

7. Write a recursive function to print squares of first N natural numbers

```c
#include<stdio.h>
void sqr(int n)
{
    if(n>0)
    {
        sqr(n-1);
        printf("%d ",n*n);
    }
    return;
}
int main()
{
    int n;
    printf("enter any number: ");
    scanf("%d",&n);
    sqr(n);
    return 0;
}
```

8. Write a recursive function to print binary of a given decimal number

```c
#include<stdio.h>
void binary(int m)
{
   if(m>0)
   {
      binary(m/2);
      printf("%d",m%2);
   }
return;
}
int main()
{
   int n;
   printf("enter any number: ");
   scanf("%d",&n);
   binary(n);
   return 0;
}
```

9. Write a recursive function to print octal of a given decimal number

```c
#include<stdio.h>
void octal(int n)
{

    if(n>0)
    {
        octal(n/8);
        printf("%d",n%8);

    }
    return;
}
int main()
{
    int n;
    printf("enter any number: ");
    scanf("%d",&n);
    octal(n);
    return 0;
}
```

10. Write a recursive function to print reverse of a given number

```c
#include<stdio.h>
void reverse(int a)
{

    if(a>0)
    {
        printf("%d",a%10);
        reverse(a/10);
        return;
    }
}
int main()
{
    int n;
    printf("enter any number: ");
    scanf("%d",&n);
    reverse(n);
    return 0;
}
```