Assignment=12

. Recursion Problems in C

1. write a Recursive Function to Print First N natural Number

```
#include <stdio.h>
void natural(int);
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
        natural(x);
        return 0;
}
void natural(int a)
{
  if(a>=1)
  {
        natural(a-1);
        printf(" %d",a);
  }
}
```

2. Write a recursive Function to Print first First N natural number In Reverse Order.

```
#include <stdio.h>
#include <stdlib.h>
void natural(int);
int y;
void natural(int a)
{
        int x;
    if(a>=1)
    {
    natural(a-1);
    x=y-(a-1);
    printf("\n%d",x);
    return a;
    }
```

```
  return 0;
}
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
        y=x;
        natural(x);
        return 0;
}
```

3. Write a recursive funtion to print first n odd natural Number.

```
#include <stdio.h>
int natural(int);
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
        natural(x);
        return 0;
}
int natural(int a)
{
        int x;
 if(a>=1)
 {
        natural(a-1);
        printf("%d ",2*a-1);
 }
 return 0;
}
```

4. write a recursive program to print first N odd natural number in Reverse Order.

```
#include <stdio.h>
#include <stdlib.h>
void natural(int);
int y;
void natural(int a)
```

```
{
        int x;
   if(a>=1)
   {
   natural(a-1);
   x=y-(a-1);
   printf("\n%d",2*x-1);
   return a;
   }
  return 0;
}
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
        y=x;
        natural(x);
        return 0;
}
```

5. Write a recursive funtion to print first n Even natural Number.

```
#include <stdio.h>
int natural(int);
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
        natural(x);
        return 0;
}
int natural(int a)
{
        int x;
 if(a>=1)
 {
        natural(a-1);
        printf("%d ",2*a);
 }
 return 0;
}
```

6. write a recursive program to print first N even natural number in Reverse Order.

```
#include <stdio.h>
#include <stdlib.h>
void natural(int);
int y;
void natural(int a)
{
        int x;
   if(a>=1)
   {
   natural(a-1);
   x=y-(a-1);
   printf("\n%d",2*x);
   return a;
   }
  return 0;
}
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
        y=x;
        natural(x);
        return 0;
}
```

7. write a program to print square of n natural number.

```
#include <stdio.h>
void square(int);
int main()
{
        int x;
        printf("\nEnter Number : ");
        scanf("%d",&x);
        square(x);
        return 0;
}
void square(int a)
{
```

```
        int s;
        if(a<1)
        return 1;
        else
        {
                s=a*a;
                square(a-1);
                printf("\n %d * %d = %d ",a,a,s);
        }
}
```

8. Write a recursive funtion to print binary of a given number.

```
#include <stdio.h>
int binary(int);
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
  printf("%d",binary(x));
        return 0;
}
int binary(int a)
{
  if(a==0)
  return 0;
  else
  return ((a%2) + 10*binary(a/2));
}
```

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

```
#include <stdio.h>
int octal(int);
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
  printf("%d",octal(x));
        return 0;
}
```

```
int octal(int a)
{
  if(a==0)
  return 0;
  else
 return ((a%8) + 10*octal(a/8));
}
```

10. Write a recursive funtion to reverse a given number .

```
#include <stdio.h>
int reverse(int);
int main()
{
        int x;
        printf("\nEnter Number :");
        scanf("%d",&x);
  reverse(x);
        return 0;
}
int reverse(int a)
{
        int k;
  if(a==0)
  return 0;
  else
  {
        k=a%10;
        printf("%d",k);
   a=reverse(a/10);
  }
}
```