Assignment - 12 (Recursion)

① Write a Recursive function to print first N natural number.

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

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

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

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

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

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

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

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

④ Write a recursion function to print first N odd Natural numbers in reverse order.

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

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

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

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

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

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

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

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

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

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

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

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

```
#include<stdio.h>
void printBinary(int n)
{
  if(n>0)
  {
    printBinary(n/2);
    printf("%d", n%2);
  }
}
int main()
{
  int n;
  scanf("%d", &n);
  printBinary(n);
  return 0;
}
```

⑨ Write a recursive function to Print octal of a given decimal number

```
#include<stdio.h>
void printBinary(int n)
{
  if(n>0)
  {
    printBinary(n/8);
    printf("%d", n%8);
  }
}
int main()
{
  int n;
  scanf("%d", &n);
  printBinary(n);
  return 0;
}
```

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

```
#include<stdio.h>
int rem, sum=0;
int reversedigit(int n)
{
  if(n)
  {
    rem = n%10;
    sum = sum*10 + rem;
    reversedigit(n/10);
  }
  else
    return sum;
  return sum;
}
int main()
{
  int n, result;
  scanf("%d", &n);
  result = reversedigit(n);
  printf("%d", result);
  return 0;
}
```