Recursion in C Language
Assignment-12
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1.Write a recursive function to print first N natural numbers.

Ans:-

```
#include<stdio.h>
void print_n(int );
int main()
{
   int n;
   printf("Enter a number\n");
   scanf("%d",&n);
   print_n(n);
   return 0;
}
void print_n(int n)
{
   int x;
   if(n==1)
      printf("%d ",n);
   else
      {
         print_n(n-1);
         printf("%d ",n);
      }
}
```

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

Ans:-

```
#include<stdio.h>
void print_rn(int );
int main()
{
   int n;
   printf("Enter a number\n");
   scanf("%d",&n);
   print_rn(n);
   return 0;
}
void print_rn(int n)
{
   int x;
   if(n==1)
      printf("%d ",n);
   else
      {
```

```
        printf("%d ",n);
        print_rn(n-1);
      }
}
```

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

Ans:-

```
#include<stdio.h>
void print_oddn(int );
int main()
{
   int n;
   printf("Enter a number\n");
   scanf("%d",&n);
   print_oddn(n);
   return 0;
}
void print_oddn(int n)
{
   int x;
   if(n==1)
      printf("%d ",n);
   else
      {
         print_oddn(n-1);
         printf("%d ",2*n-1);
      }
}
```

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

Ans:-

```
#include<stdio.h>
void print_n(int );
int main()
{
   int n;
   printf("Enter a number\n");
   scanf("%d",&n);
   print_n(n);
   return 0;
}
void print_n(int n)
{
   int x;
   if(n==1)
      printf("%d ",n);
   else
      {
         printf("%d ",2*n-1);
```

```
        print_n(n-1);
      }
}
```

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

Ans:-

```
#include<stdio.h>
void print_En(int );
int main()
{
   int n;
   printf("Enter a number\n");
   scanf("%d",&n);
   print_En(n);
   return 0;
}
void print_En(int n)
{
   int x;
   if(n==1)
      printf("%d ",2*n);
   else
      {
         print_En(n-1);
         printf("%d ",2*n);
      }
}
```

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

Ans:-

```
#include<stdio.h>
void print_REn(int );
int main()
{
   int n;
   printf("Enter a number\n");
   scanf("%d",&n);
   print_REn(n);
   return 0;
}
void print_REn(int n)
{
   int x;
   if(n==1)
      printf("%d ",2*n);
   else
   {
      printf("%d ",2*n);
      print_REn(n-1);
```

```
    }
}
```

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

Ans:-

```
#include<stdio.h>
void print_sq_n(int );
int main()
{
   int n;
   printf("Enter a number\n");
   scanf("%d",&n);
   print_sq_n(n);
   return 0;
}
void print_sq_n(int n)
{
   int x;
   if(n==1)
      printf("%d ",n);
   else
   {
      print_sq_n(n-1);
      printf("%d ",n*n);
   }
}
```

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

Ans:-

```
#include<stdio.h>
void print_dec_bin(int );
int main()
{
   int n;
   printf("Enter a decimal number\n");
   scanf("%d",&n);
   print_dec_bin(n);
   return 0;
}
void print_dec_bin(int n)
{
   int x;
   if(n==1)
      printf("%d",n);
   else
   {
      print_dec_bin(n/2);
      printf("%d",n%2);
   }
```

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

Ans:-

```
#include<stdio.h>
void print_dec_oct(int );
int main()
{
   int n;
   printf("Enter a decimal number\n");
   scanf("%d",&n);
   print_dec_oct(n);
   return 0;
}
void print_dec_oct(int n)
{
   int x;
   if(n==1)
      printf("%d",n);
   else
   {
      print_dec_oct(n/8);
      printf("%d",n%8);
   }
}
```
10. Write a recursive function to print reverse of a given number.

Ans:-

```
#include<stdio.h>
void print_Rn(int );
int main()
{
   int n;
   printf("Enter a decimal number\n");
   scanf("%d",&n);
   print_Rn(n);
   return 0;
}
void print_Rn(int n)
{
   int x;
   if(n<10)
      printf("%d",n);
   else
   {
      printf("%d",n%10);
      print_Rn(n/10);
   }
}
```