

Assignment - (12)

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

→

```
#include <stdio.h>
void display (int N);
int main()
{
    int n;
    printf("Enter the number of terms to be print\n");
    scanf("%d", &n);
    printf("\n Natural numbers from 1 to %d are:", n);
    display(n);
    return 0;
}
void display (int num)
{
    if(num)
        display (num-1);
    else
        return;
    printf("\n %d", num);
}
```

N Natural

```
#include <stdio.h>
void print(int N);
int main()
{
    print(10);
}
void print (int N)
{
    if (N >= 1)
    {
        printf("%d", N);
        print(N-1);
    }
}
```

- ② write a ~~program~~ recursive function to print first N natural numbers in reverse order.

```
#include <stdio.h>
void print (int N);
int main()
{
    print(10);
}
void print (int N)
{
    if (N >= 1)
    {
        printf("%d", N);
        print(N-1);
    }
}
```

3) write a recursive function to print first N odd natural numbers

```
#include <stdio.h>
```

```
void odd (int N);
```

```
int main()
```

```
{
```

```
    int n;
```

```
    printf("Enter any number");
```

```
    scanf("%d", &n);
```

```
    printf("First %d odd natural numbers are \n", n);
```

```
    odd(n);
```

```
}
```

```
void odd (int a)
```

```
{
```

```
    if(a >= 1)
```

```
{
```

```
    odd(a-1);
```

```
    printf("%d", 2*a-1);
```

```
}
```

```
}
```

6) write a recursive function to print first N odd natural numbers in recursive order.

```
#include <stdio.h>
```

```
void odd (int N);
```

```
int main()
```

```
{
```

```
    int n;
```

```
    printf("Enter any number");
```

```
    scanf("%d", &n);
```

```
    printf("First %d odd natural number are \n", n);
```

```
    odd(n);
```

```
}
```

```
void odd (int a)
```

```
{
```

```
    if(a >= 1)
```

```
{
```

```
    printf("%d", 2*a-1);
```

```
    odd(a-1);
```

```
}
```

```
}
```

⑤ write a recursive function to print first N even natural number

```
#include <stdio.h>
```

```
void even(int N);
```

```
int main()
```

```
{  
    int n;
```

```
    printf("Enter any number");
```

```
    scanf("%d", &n);
```

```
    printf("first %d even natural number are \n", n);  
    even(n);
```

```
}
```

```
void even(int a)
```

```
{
```

```
    if(a == 1)
```

```
    {
```

```
        even(a-1);
```

```
        printf("%d", 2*a);
```

```
    }
```

```
}
```

⑥ write a recursive function to print first N even natural number in reverse order.

```
#include <stdio.h>
```

```
void even(int N);
```

```
int main()
```

```
{
```

```
    int n;
```

```
    printf("Enter any number");
```

```
    scanf("%d", &n);
```

```
    printf("first %d even natural number in reverse order are \n", n);  
    even(n);
```

```
}
```

```
void even(int a)
```

```
{
```

```
    if(a >= 1)
```

```
    {
```

```
        even(a-1);
```

```
        printf("%d", 2*a);
```

```
        even(a-1);
```

```
    }
```

```
}
```

⑦ write a recursive function to print square of first N natural numbers

```
#include <stdio.h>
void square (int N);
int main()
{
    int n;
    printf("Enter any number");
    scanf("%d", &n);
    printf("First %d square natural numbers are\n", n);
    square(n);
}
void square (int a)
{
    if (a >= 1)
    {
        square (a-1);
        printf("%d ", a*a);
    }
}
```

⑧ write a recursive function to print binary of a given decimal number

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

⑨ write a recursive function to print octal of a given decimal number

```
#include <stdio.h>
```

```
int main  
void octal(int);
```

```
int main()
```

```
{
```

```
int n;
```

```
printf("Enter decimal number");
```

```
scanf("%d", &n);
```

```
printf("octal %d is ", n);
```

```
octal(n);
```

```
}
```

```
void octal(int a)
```

```
{
```

```
if(a >= 1)
```

```
{
```

```
octal(a/8);
```

```
printf("%d", a % 8);
```

```
}
```

```
}
```

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

```
#include <stdio.h>
```

```
void reverse(int);
```

```
int main()
```

```
{
```

```
int n;
```

```
printf("Enter any number");
```

```
scanf("%d", &n);
```

```
printf("reverse %d is ", n);
```

```
reverse(n);
```

```
}
```

```
void reverse(int a)
```

```
{
```

```
if(a >= 1)
```

```
{
```

```
printf("%d", a % 10);
```

```
reverse(a/10);
```

```
}
```

```
}
```