ASSIGNMENT-12

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

Ans-#include<stdio.h>

void display(int num)

{

    if(num)

        display(num-1);

    else

        return;

    printf("%d\n", num);

}

int main()

{

    int limit;

    printf("Enter the number of terms\n");

    scanf("%d", &limit);

    printf("\nNatural Numbers from 1 To %d are: \n", limit);

    display(limit);

    return 0;

}

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

Ans-#include<stdio.h>

void PrintReverse(int N)

{

    if (N <= 0) {

        return;

    }

    else {

        printf("%d\n",N);

        PrintReverse(N - 1);

    }

}

int main()

{

    int limit;

    printf("Enter the number of terms\n");

    scanf("%d", &limit);

    printf("\nNatural Numbers in Reverse order \n", limit);

    PrintReverse(limit);

    return 0;

}

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

Ans-#include<stdio.h>

void ODDNum(int N)

{

    if (N>0) {

    ODDNum(N-1);

    }

    else

        return ;

    printf("%d\n",2\*N-1);

}

int main()

{

    int n;

    printf("Enter the n\n");

    scanf("%d", &n);

    printf("\nFirst N Odd Natural Numbers\n", n);

    ODDNum(n);

    return 0;

}

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

Ans-#include<stdio.h>

void ODDNum(int N)

{

    if (N==0) {

        return 0;

    }

    else

    printf("%d\n",2\*N-1);

    ODDNum(N-1);

}

int main()

{

    int n;

    printf("Enter the n\n");

    scanf("%d", &n);

    printf("\nFirst N Odd Natural Numbers\n", n);

    ODDNum(n);

    return 0;

}

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

Ans-#include<stdio.h>

void ODDNum(int N)

{

    if (N>0) {

    ODDNum(N-1);

    }

    else

        return 0;

    printf("%d\n",2\*N);

}

int main()

{

    int n;

    printf("Enter the n\n");

    scanf("%d", &n);

    printf("\nFirst N Even Natural Numbers\n", n);

    ODDNum(n);

    return 0;

}

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

Ans-#include<stdio.h>

void ODDNum(int N)

{

    if (N==0) {

        return 0;

    }

    else

    printf("%d\n",2\*N);

    ODDNum(N-1);

}

int main()

{

    int n;

    printf("Enter the n\n");

    scanf("%d", &n);

    printf("\nFirst N Even Natural Numbers in Reverse order\n", n);

    ODDNum(n);

    return 0;

}

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

Ans-#include<stdio.h>

void Numsquare(int N)

{

    if (N>0) {

   Numsquare(N-1);

    }

    else

        return 0;

    printf("%d\n",N\*N);

}

int main()

{

    int n;

    printf("Enter the n\n");

    scanf("%d", &n);

    printf("\nSquare of first N Natural Numbers\n", n);

    Numsquare(n);

    return 0;

}

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

Ans-#include<stdio.h>

int find(int decimal\_number)

{

    if (decimal\_number == 0)

        return 0;

    else

        return (decimal\_number % 2 + 10 \*

                find(decimal\_number / 2));

}

int main()

{

    int number;

    printf("Enter the number:");

    scanf("%d",&number);

    printf("%d",find(number));

    return 0;

}

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

Ans-#include<stdio.h>

void decToOct(int n){

    if(n > 0){

        decToOct(n/8);

        printf("%d",n%8);

    }

}

int main()

{

    int num;

    printf("Enter a Decimal number: \n");

    scanf("%d",&num);

    printf("Octal: ");

    decToOct(num);

    return 0;

}

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

Ans-#include <stdio.h>

int sum=0,rem;

int reverse\_function(int num){

  if(num){

    rem=num%10;

    sum=sum\*10+rem;

    reverse\_function(num/10);

  }

  else

    return sum;

  return sum;

}

int main(){

  int num,reverse\_number;

  printf("Enter any number:");

  scanf("%d",&num);

  reverse\_number=reverse\_function(num);

  printf("The reverse of entered number is :%d",reverse\_number);

  return 0;

}