**Assignment-12 Solution Name: Om Pant**

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

Ans –

#include<stdio.h>

void printNum(int n){

    if(n == 0)

        return;

    printNum(n-1);

    printf("%d ",n);

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printNum(num);

    return 0;

}

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

Ans-

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

#include<stdio.h>

void printNum(int n){

    if(n == 0)

        return;

    printf("%d ",n);

    printNum(n-1);

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printNum(num);

    return 0;

}

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

Ans-

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

#include<stdio.h>

void printNum(int n){

    if(n == 0)

        return;

    printNum(n-1);

    printf("%d ",2\*n-1);

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printNum(num);

    return 0;

}

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

Ans-

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

#include<stdio.h>

void printNum(int n){

    if(n == 0)

        return;

    printf("%d ",2\*n-1);

    printNum(n-1);

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printNum(num);

    return 0;

}

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

Ans –

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

#include<stdio.h>

void printNum(int n){

    if(n == 0)

        return;

    printNum(n-1);

    printf("%d ",2\*(n-1));

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printNum(num);

    return 0;

}

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

Ans-

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

#include<stdio.h>

void printNum(int n){

    if(n == 0)

        return;

    printf("%d ",2\*(n-1));

    printNum(n-1);

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printNum(num);

    return 0;

}

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

Ans-

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

#include<stdio.h>

void printNum(int n){

    if(n == 0)

        return;

    printNum(n-1);

    printf("%d ",n\*n);

}

int main(){

    int num;

    printf("Enter a number\n");

    scanf("%d",&num);

    printNum(num);

    return 0;

}

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

Ans –

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

#include<stdio.h>

void decToBin(int num){

    if (num==0 ||num == 1){

        printf("%d",num);

        return;

    }

    decToBin(num/2);

    printf("%d",num%2);

}

int main(){

    int num;

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

    scanf("%d",&num);

    decToBin(num);

    return 0;

}

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

Ans-

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

#include<stdio.h>

void decToOct(int num){

    if (num==0 ||num == 1){

        printf("%d",num);

        return;

    }

    decToOct(num/8);

    printf("%d",num%8);

}

int main(){

    int num;

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

    scanf("%d",&num);

    decToOct(num);

    return 0;

}

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

Ans –

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

#include<stdio.h>

void reverse(int n){

    if( n==0){

        return;

    }

    printf("%d",n%10);

    reverse(n/10);

}

int main(){

    int num;

    printf("Enter a number \n");

    scanf("%d",&num);

    reverse(num);

    return 0;

}