**Recursion in C Language**

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

#include<stdio.h>

void natural\_num(int);

int main()

{

int N;

printf("Enter Nth number:");

scanf("%d",&N);

natural\_num(N);

return 0;

}

void natural\_num(int n)

{

if(n)

{

natural\_num(n-1);

printf("%d\n",n);

}

}

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

#include<stdio.h>

void natural\_num(int);

int main()

{

int N;

printf("Enter Nth number:");

scanf("%d",&N);

natural\_num(N);

return 0;

}

void natural\_num(int n)

{

if(n)

{

printf("%d\n",n);

natural\_num(n-1);

}

}

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

#include<stdio.h>

void odd\_natural(int);

int main()

{

int N;

printf("Enter Nth number:");

scanf("%d",&N);

printf("first %d odd numbers:\n",N);

odd\_natural(N);

return 0;

}

void odd\_natural(int n)

{

int i=n-1;

if(n!=0)

{

odd\_natural(n-1);

printf("%d\n",n+i);

}

}

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

#include<stdio.h>

void odd\_natural(int);

int main()

{

int N;

printf("Enter Nth number:");

scanf("%d",&N);

printf("first %d odd numbers in reverse order:\n",N);

odd\_natural(N);

return 0;

}

void odd\_natural(int n)

{

int i=n-1;

if(n!=0)

{

printf("%d\n",n+i);

odd\_natural(n-1);

}

}

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

#include<stdio.h>

void odd\_natural(int);

int main()

{

int N;

printf("Enter Nth number:");

scanf("%d",&N);

printf("first %d even numbers:\n",N);

odd\_natural(N);

return 0;

}

void odd\_natural(int n)

{

int i=n;

if(n!=0)

{

odd\_natural(n-1);

printf("%d\n",n+i);

}

}

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

#include<stdio.h>

void odd\_natural(int);

int main()

{

int N;

printf("Enter Nth number:");

scanf("%d",&N);

printf("first %d even numbers in reverse order:\n",N);

odd\_natural(N);

return 0;

}

void odd\_natural(int n)

{

int i=n;

if(n!=0)

{

printf("%d\n",n+i);

odd\_natural(n-1);

}

}

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

#include<stdio.h>

void odd\_natural(int);

int main()

{

int N;

printf("Enter Nth number:");

scanf("%d",&N);

printf("square of first %d numbers:\n",N);

odd\_natural(N);

return 0;

}

void odd\_natural(int n)

{

if(n!=0)

{

odd\_natural(n-1);

printf("%d\n",n\*n);

}

}

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

#include<stdio.h>

void binary(int);

int main()

{

int N,ans;

printf("Enter Nth number:");

scanf("%d",&N);

printf("binary of %d is:\n",N);

binary(N);

return 0;

}

void binary(int n)

{

int ans;

if(n)

{

binary(n>>1);

ans=n&1;

printf("%d",ans);

}

}

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

#include<stdio.h>

void decimal\_to\_octal(int);

int main()

{

int N,ans;

printf("Enter Nth number:");

scanf("%d",&N);

printf("octa number of %d is:\n",N);

decimal\_to\_octal(N);

return 0;

}

void decimal\_to\_octal(int n)

{

int ans;

if(n)

{

decimal\_to\_octal(n/8);

ans=n%8;

printf("%d",ans);

}

}

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

#include<stdio.h>

void reverse\_num(int);

int main()

{

int N,ans;

printf("Enter Nth number:");

scanf("%d",&N);

printf("Reverse number of %d:\n",N);

reverse\_num(N);

return 0;

}

void reverse\_num(int n)

{

int ans;

if(n)

{

ans=n%10;

printf("%d",ans);

reverse\_num(n/10);

}

}