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**Assignment-12**

\*\*RECURSION\*\*

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

Ans:

#include<stdio.h>

void natural(int);

int main()

{

int n;

printf("Enter A Number");

scanf("%d",&n);

natural(n);

}

void natural (int a)

{

if(a>=1)

{

natural(a-1);

printf("%d ",a);

}

}

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

Ans:

#include<stdio.h>

void natural(int);

int main()

{

int n;

printf("Enter A Number");

scanf("%d",&n);

natural(n);

}

void natural (int a)

{

if(a>=1)

{

printf("%d ",a);

natural(a-1);

}

}

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

Ans:

#include<stdio.h>

void natural(int);

int main()

{

int n;

printf("Enter A Number");

scanf("%d",&n);

natural(n);

}

void natural (int a)

{

if(a>=1)

{

natural(a-1);

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

}

}

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

Ans:

#include<stdio.h>

void natural(int);

int main()

{

int n;

printf("Enter A Number ");

scanf("%d",&n);

natural(n);

}

void natural (int a)

{

if(a>=1)

{

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

natural(a-1);

}

}

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

Ans:

#include<stdio.h>

void natural(int);

int main()

{

int n;

printf("Enter A Number ");

scanf("%d",&n);

natural(n);

}

void natural (int a)

{

if(a>=1)

{

natural(a-1);

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

}

}

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

Ans:

#include<stdio.h>

void natural(int);

int main()

{

int n;

printf("Enter A Number ");

scanf("%d",&n);

natural(n);

}

void natural (int a)

{

if(a>=1)

{

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

natural(a-1);

}

}

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

Ans:

#include<stdio.h>

void square (int);

int main()

{

int n;

printf("Enter A Number");

scanf("%d",&n);

square(n);

}

void square (int a)

{

if(a>0)

{

square(a-1);

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

}

}

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

Ans:

#include <stdio.h>

int decimal\_binary(int n)

{

if (n==0)

return 0;

else

return ((n%2)+10\*decimal\_binary(n/2));

}

void main()

{

int no;

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

scanf("%d",&no);

printf("Decimal(%d) = Binary(%d)\n",no,decimal\_binary(no));

}

Q.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;

}

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

Ans:

#include<stdio.h>

void reverse(int);

int main()

{

int n;

printf("Enter Any Number");

scanf("%d",&n);

reverse(n);

}

void reverse(int num)

{

int reminder,rev;

while(num>0)

{

reminder=num%10;

rev=rev\*10+reminder;

num=num/10;

}

printf("%d",rev);

}