#include <stdio.h>

int TowerofHanoi(int n);

void TOH(int n,char s,char a,char d);

int main()

{

int n;

printf("enter the no of disc to be moved");

scanf("%d",&n);

char s='a';

char a='b';

char d='c';

int moves=TowerofHanoi(n);

TOH(n,s,d,a);

printf("\n the no of moves is %d",moves);

return 0;

}

int TowerofHanoi(int n)

{

if(n==1)

{

return 1;

}

int c=2\*TowerofHanoi(n-1)+1;

return c;

}

void TOH(int n,char s,char a,char d)

{

if(n==0)

{

return;

}

if(n==1)

{

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

return;

}

TOH(n-1,s,d,a);

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

TOH(n-1,a,s,d);

}

enter the no of disc to be moved3

 a b

 a c

 b c

 a b

 c a

 c b

 a b

 the no of moves is 7

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include <stdio.h>

#include <string.h>

#define size 100

int push(char[size], int \*, char);

char pop(char[size], int \*);

void main()

{

char stack[size];

char str[size];

int top = -1, flag = 1, len = 0;

printf("Enter the string : ");

scanf("%s", str);

len = strlen(str);

for (int i = 0; i < len; i++)

{

if (str[i] == '{' || str[i] == '(' || str[i] == '[')

{

push(stack, &top, str[i]);

}

else if (str[i] == '}' || str[i] == ')' || str[i] == ']')

{

char last = pop(stack, &top);

if (last == '(' && str[i] == ')')

continue;

if (last == '[' && str[i] == ']')

continue;

if (last == '{' && str[i] == '}')

continue;

flag = -1;

break;

}

}

if (flag == -1 || top != -1)

{

printf("\nThe Expression is not balanced for paranthesis\n");

}

else

{

printf("\nThe Expression is balanced for paranthesis\n");

}

}

int push(char stack[size], int \*top, char value)

{

if (\*top == size)

{

return -1;

}

int t = \*top + 1;

\*top = t;

stack[t] = value;

return 1;

}

char pop(char stack[size], int \*top)

{

if (\*top == -1)

{

return 't';

}

int t = \*top;

\*top = t - 1;

return stack[t];

}

Output:

Enter the string : {a+b{c\*d}}

The Expression is balanced for paranthesis

**...Program finished with exit code 0**

**Press ENTER to exit console.**

Q)

Code:

#include<stdio.h>

#include<ctype.h>

char stack[100];

int top=-1;

void push(char x)

{

stack[++top]=x;

}

char pop()

{

if(top==-1)

return -1;

else

return stack[top--];

}

int priority(char a)

{

if(a=='(')

return 0;

if(a=='+' || a=='-')

return 1;

if(a=='\*' || a=='/')

return 2;

if(a=='^')

return 3;

}

int main()

{

char exp[20];

char \*e, a;

printf("Enter the expression: ");

scanf("%s",exp);

printf("Ans is ");

e=exp;

while(\*e!='\0')

{

if(isalnum(\*e))

printf("%c",\*e);

else if(\*e=='(')

push(\*e);

else if(\*e==')')

{

while((a=pop())!='(')

printf("%c", a);

}

else

{

while(priority(stack[top]) >= priority(\*e))

printf("%c",pop());

push(\*e);

}

e++;

}

while(top!=-1)

{

printf("%c",pop());

}

}

Output:

Enter the expression: a+b+c\*d

Ans is ab+cd\*+

**...Program finished with exit code 0**

**Press ENTER to exit console.**