Aim:

Write a C program to convert a Postfix expression to Prefix expression.

Source Code:

postfixToPrefix.c

```c
#include<stdio.h>
#include<conio.h>
#include<string.h>
#include<stdlib.h>
#define MAX 20
char *strrev(char *str)
{
    char c, *front, *back;
    if(!str || !*str)
    return str;
    for(front=str,back=str+strlen(str)-1;front<back;front++,back--)
    {
        c=*front;*front=*back;*back=c;
    }
    return str;
}
char str[MAX],stack[MAX];
int top=-1;
void push(char c)
{
    stack[++top]=c;
}
char pop()
{
    return stack[top--];
}
void post_pre()
{
    int n,i,j=0;
    char c[20];
    char a,b,op;
    printf("Enter the postfix expression:");
    scanf("%s",str);
    n=strlen(str);
    for(i=0;i<MAX;i++)
    stack[i]= '\0';
    printf("Prefix expression is:");
    for(i=n-1;i>=0;i--)
    {
        if(str[i]== '+'||str[i]== '-'||str[i]== '*'||str[i]== '/')
        {
            push(str[i]);
        }
        else
        {
            c[j++]=str[i];
```

```
            while((top!=-1)&&(stack[top]== '@'))
            {
                a=pop(); c[j++]=pop();
            }
            push( '@');
        }
    }
    c[j]= '\0';
    strrev(c);
    printf("%s\n",c);
}
void main()
{
    post_pre();
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter the postfix expression: AB+
Prefix expression is:+AB

Test Case - 2
User Output
Enter the postfix expression: ABC*+D+
Prefix expression is:++A*BCD