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