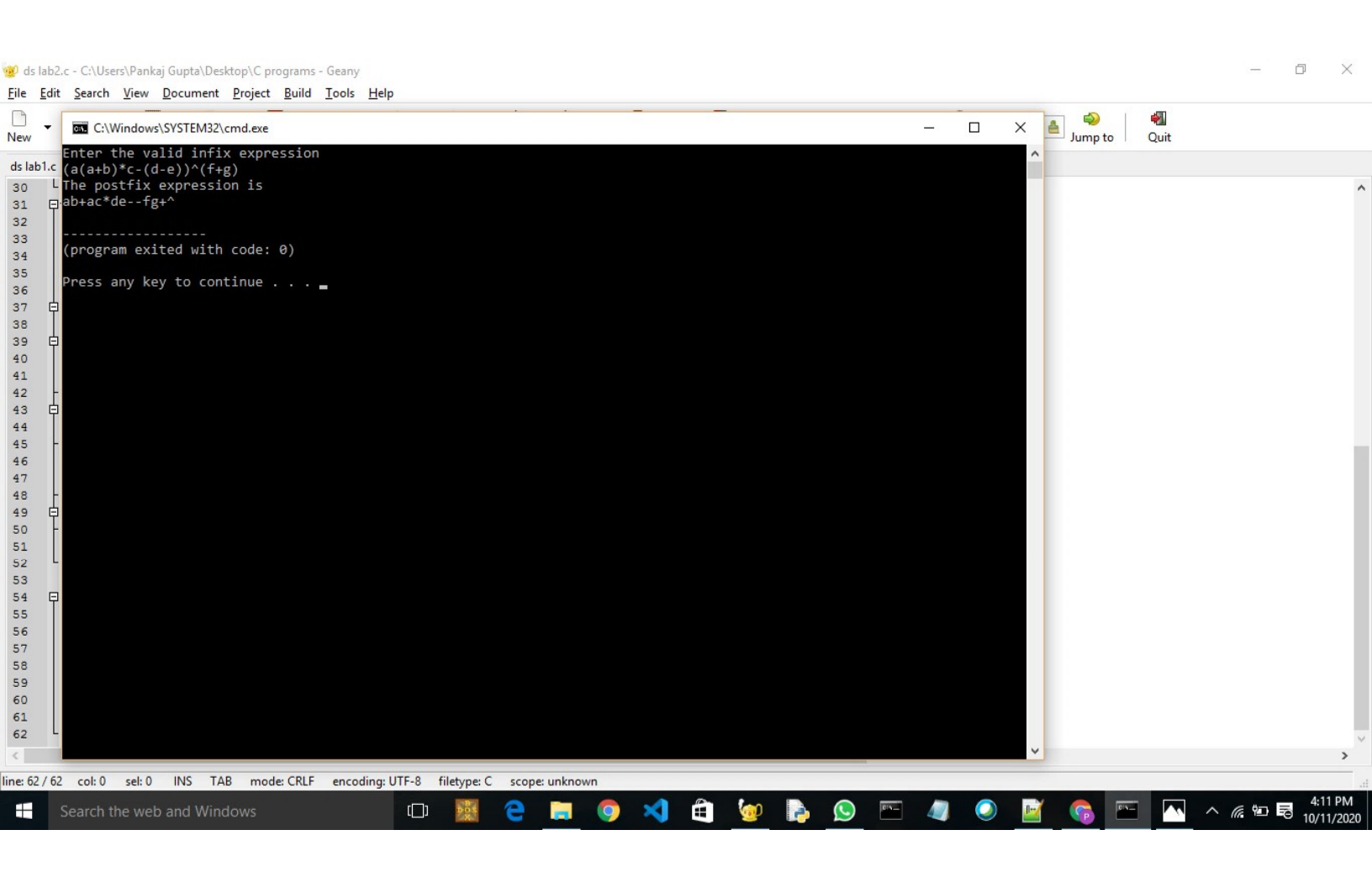
ds lab2.c - C:\Users\Pankaj Gupta\Desktop\C programs - Geany
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New
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ds lab1.c
C:\Windows\SYSTEM32\cmd.exe
Enter the valid infix expression
(a(a+b)*c-(d-e))^(f+g)
The postfix expression is
ab+ac*de--fg+^
(program exited with code: 0)
Press any key to continue . . .
line: 62 / 62 col: 0 sel: 0 INS TAB mode: CRLF encoding: UTF-8 filetype: C scope: unknown
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```
void infix_postfix (char infix[], char postfix[]) {
    int top, i, j;
    char s[30], symbol;
    top = -1;
    s[++top] = '#';
    j=0;
    for (i=0; i<strlen(infix); i++) {
        symbol = infix[i];
        while (F(s[top]) > G(symbol)) {
            postfix[j] = s[top--];
            j++;
        }
        if (F(s[top]) != G(symbol)) {
            s[++top] = symbol;
        }
        else top--; }
    while (s[top] != '#') {
        postfix[j++] = s[top--]; }
        postfix[j] = '\0';
    }
int main() {
    char infix[20], postfix[20];
    printf("Enter the valid infix expression\n");
    scanf("%s", infix);
    infix_postfix(infix, postfix);
    printf("The postfix expression is %s\n", postfix);
}
```

Output:

Enter the valid infix expression

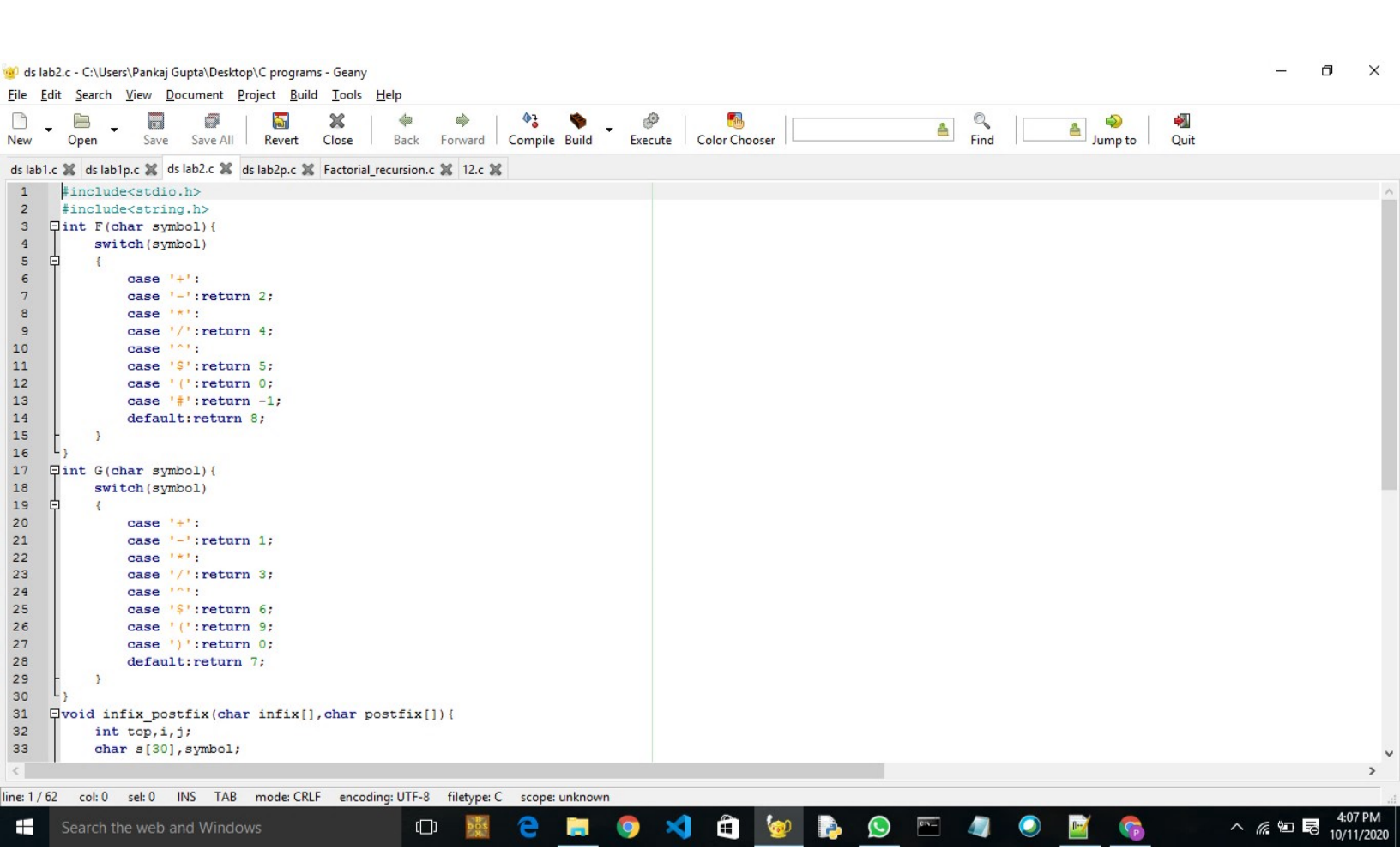
(a(a+b)*c-(d-e))^(f+g)

The postfix expression is ab+ac*de--fg+^

Lab Program - 2

WAP to convert a given valid parenthesized infix arithmetic expression to post fix expression. The expression consists of single character operands and the binary operators + (plus), - (minus), * (multiply), / (divide).

```
#include<stdio.h>
#include<string.h>
int F(char symbol) {
  switch(symbol) {
  case '+':
  case '-': return 2;
  case '*':
  case '/': return 4;
  case '^':
  case '$': return 5;
  case '(': return 0;
  case '#': return -1;
  default: return 8;
  }
}
int G char(symbol) {
  switch(symbol)
  {
  case '+':
  case '-': return 1;
  case '*':
  case '/': return 3;
  case '^':
  case '$': return 6;
  case '(': return 9;
  case ')': return 0;
  default: return 7;
  }
}
```


ds lab2.c - C:\Users\Pankaj Gupta\Desktop\C programs - Geany
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ds lab1.c ds lab1p.c ds lab2.c ds lab2p.c Factorial_recursion.c 12.c
#include<stdio.h>
#include<string.h>
int F(char symbol){
switch(symbol)
{
case '+':
case '-':return 2;
case '*':
case '/':return 4;
case '^':
case '$':return 5;
case '(':return 0;
case '#':return -1;
default:return 8;
}
}
int G(char symbol){
switch(symbol)
{
case '+':
case '-':return 1;
case '*':
case '/':return 3;
case '^':
case '$':return 6;
case '(':return 9;
case ')':return 0;
default:return 7;
}
}
void infix_postfix(char infix[],char postfix[]){
int top,i,j;
char s[30],symbol;
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ds lab1.c ds lab1p.c ds lab2.c ds lab2p.c Factorial_recursion.c 12.c

```
30  }
31  void infix_postfix(char infix[],char postfix[]){
32      int top,i,j;
33      char s[30],symbol;
34      top=-1;
35      s[++top]='#';
36      j=0;
37      for(i=0;i<strlen(infix);i++){
38          symbol=infix[i];
39          while(F(s[top])>G(symbol)){
40              postfix[j]=s[top--];
41              j++;
42          }
43              if(F(s[top])!=G(symbol)){
44                  s[++top]=symbol;
45              }
46                  else
47                  top--;
48              }
49              while(s[top]!='#'){
50                  postfix[j++]=s[top--];
51              }postfix[j]='\0';
52          }
53  int main()
54  {
55      char infix[20],postfix[20];
56      printf("Enter the valid infix expression\n");
57      scanf("%s",infix);
58      infix_postfix(infix,postfix);
59      printf("The postfix expression is \n");
60      printf("%s",postfix);
61  }
62
```

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