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1  #include <iomanip>
2  #include <iostream>
3  #include <string>
4  #include <fstream>
5
6  using namespace std;
7
8  const int maxstack = 100;
9  const char initstack = '$';
10
11 void CreateStack(char Stack[], int &top) {
12     for (int i=0;i<maxstack;i++) Stack[i]=initstack;
13     top = -1; }
14
15 int priority(char oper) {
16     if (oper == '+') return 2;
17     else if (oper == '-') return 2;
18     else if (oper == '/') return 4;
19     else if (oper == '*') return 4;
20     else return 100;
21 }
22
23 bool EmptyStack(int top) {
24     return top < 0; }
25
26 bool FullStack(int top) {
27     return top>=maxstack-1;
28 }
29
30 char pop(char Stack[], int &top) {
31     char temp = initstack;
32     if (!EmptyStack(top)) {
33         temp = Stack[top];
34         Stack[top] = initstack;
35         top--;
36     }
37     return temp;
38 }
39
40 void push(char Stack[], int &top, char data) {
41     if (!FullStack(top)) {
42         top++;
43         Stack[top]=data;}
44     else cout << "Stack is full" << endl;
45 }
46
47 void ReadFileandWriteFile(char Stack[], int top) {
48     ifstream inf;
49     inf.open("infileinfixtorpn.txt");
50     ofstream outf;
51     outf.open("outfileinfixtorpn.txt");
52     string instring;
53     char ch;
54     outf << setw(10) << "Infix" << setw(22) << setfill(' ') << " " << setw(8) << "RPN"
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    << endl;
55  outf << setw(15) << setfill('-') << "-" << setw(15) << setfill(' ') << " " <<
    setw(15) << setfill('-') << "-" << endl;
56      while (!inf.eof()) {
57          inf >> instring>>ws;
58          string outstring;
59          for (unsigned int i =0; i < instring.length(); i++) {
60              ch = instring[i];
61              if (ch >= 'a' && ch <= 'z') {outstring += ch;}
62              else {
63                  if (EmptyStack(top)) {
64                      push(Stack, top, ch);}
65                  else {
66                      if (priority(ch) > priority(Stack[top])) {
67                          push(Stack, top, ch); }
68                      else {
69                          while(!EmptyStack(top) && priority(ch) <=
69                          priority(Stack[top])) {
70                              outstring += pop(Stack,top); }
71                              push(Stack, top, ch);
72                          }
73                      }
74                  }
75              }
76          while (!EmptyStack(top)) { outstring += pop(Stack,top); }
77          outf << setw(2) << setfill(' ') << " " << setw(15) << setfill(' ') << left
77          << instring;
78          outf << setw(15) << setfill(' ') << " " << setw(10) << outstring << endl;
79          }
80      }
81
82
83  int main() {
84      char Stack[maxstack];
85      int top;
86      CreateStack(Stack, top);
87      ReadFileandWriteFile(Stack,top);
88      }
89

```