

15. Write a program to read from the user a single line (up to 255 characters) at a time and splits the line into lexemes, if possible. The program will determine whether each lexeme is a reserved word, an arithmetic operator, a special symbol, a number, or an identifier. The following arrays are already given:

```
char reservedWord[4][10]={ "cin>>", "for", "int", "while"};
char operator[6][2]={ "+", "-", "*", "/", "++", "--"}
char specialSymbol[7][3]={ ">", "=", ",", "(", ")", ">=", "{", "}"};
```

A number is an unsigned integer or a signed integer.

An identifier starts with a letter or _ followed by any number of letters, _, and digits, and excludes any reserved word.

For each lexeme check whether it is a reserved word. If not, check whether it is a special symbol. If not, check whether it is a number. If not, check whether it is an operator. If not, check whether it is an identifier. If none of these, display "invalid". The program must be case insensitive. Save it as Prog3 and upload it on Canvas.

Sample I/O:

```
Enter a statement:
cin>> i ; For ( int j = 100 ; j >= i ; j = ++ j - 7i )
cin>>      reserved word
i          identifier
;          special symbol
For        reserved word
(          special symbol
int        reserved word
j          identifier
=          special symbol
100        number
;          special symbol
j          identifier
>=         special symbol
i          identifier
;          special symbol
j          identifier
=          special symbol
++         operator
j          identifier
-          operator
li         invalid
)          special symbol
CONTINUE (y/n)? y

Enter a statement: int j = -1 ; while ( j < 10 ) {cin>> myTime ; j++;}
int        reserved word
j          identifier
=          special symbol
-1         number
;          special symbol
while      reserved word
(          special symbol
j          identifier
<          invalid
10         number
)          special symbol
{          special symbol
cin>>      reserved word
myTime     identifier
;          special symbol
j          identifier
++         operator
;          special symbol
}          special symbol
CONTINUE (y/n)? n
```