First Computer Assignment

Scanners

As you know by now Scanners play an important role for compilers, so you will need to implement one for your final project. Scanners can be used outside of compilers too though, therefore we are going to implement one for another use case while keeping in mind that we are going to use the same scanner for our final project.

Text Editors and Syntax Highlighting

You are going to make a text editor, well not a full text editor but rather a syntax highlighter which is still an important feature of syntax highlighters. You need to read a code which is written in C language and highlight some of its keywords as the following :

Token	Output Format
Reserved Key Words*	**Bold and Blue**
identifiers*	Orange
Integer numbers*	Violate
Real numbers*	*Italic and Violate*
Strings	Red
Characters	Green
Special Characters (This also includes ones in strings or ones that come alone)	*Italic and Green*
Comments	Gray

Reserved Key Words

These are the keywords that we'll need on the first part of the project. If there are any missing we won't check it for this part of the project but you will need all of them for the following phases of the project. One thing to keep in mind is to keep these Key Words separate because you are going to need them in your project as you might know. The key words are as the following :

auto	double
int	struct
const	float
short	unsigned
break	else
long	switch
continue	for
signed	void
case	enum
register	typedef
default	goto
sizeof	volatile
char	extern
return	union
do	if
static	while

Identifiers

The names you use should be used as identifiers are the same as the names you might use as identifiers in c and c++.

Numbers

Here are some examples for numbers :

Type	Example
Decimal Integer	42
Hexidecimal	0x2A
Float	42.42
Float using Scientific notation	42e+1

Please take into consideration other types of notation for the same type such as 42E1 for float numbers using Scientific notation.

Strings and Chars

Strings start with " and end with " and should be contained in one line.

Chars start with ' and end with '.

Special Chars are the ones that start with \ like \n.

Comments

Comments have to types: ones that start with // and ones that start with /* and end with and */ and can span in multiple lines.

Things To Consider :

Things you may want to consider are mainly taught in the class by your teacher, for example, you might want to consider making IDs for each of your text that you are identifying besides their text for further use.

Finally, for the upload of your code please upload your whole project which consists of your Scanner code and also an example for the c++ code that your scanner scans, and an HTML file so that we can check the output of your scanner. Include your first name and last name and also your student ID in your zip file name, e.g HW2_Name_LastName_StudentID.zip.

Good Luck And Happy New Year