Computer Science Department
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Translators and Programming languages COMP439
Section: 1 T, R.

Example of Running the Recursive Decent Parser
Using Java and JavaFX

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In this project, a Java parser was implemented using Recursive Decent Parser. This report will show an example of running the project by the user and how it works and shows the error in parsing:

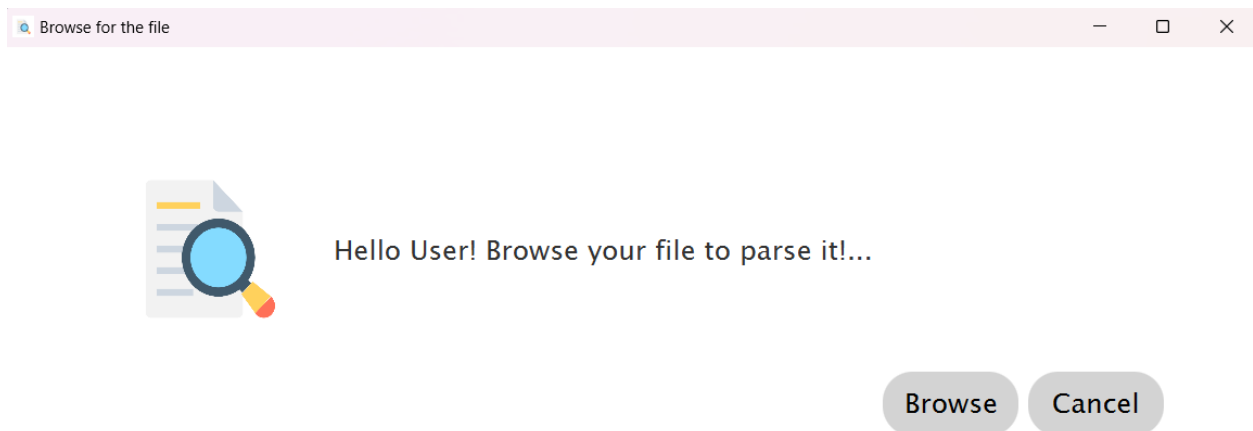Once the user runs the program a scene will ask them to browse for their file as shown in Figure 1 below:

Figure (1): Browse file scene

After they have chosen their file a button (parse) will show so that they take the action in order for the program to start parsing the chosen file as shown in Figure 2:
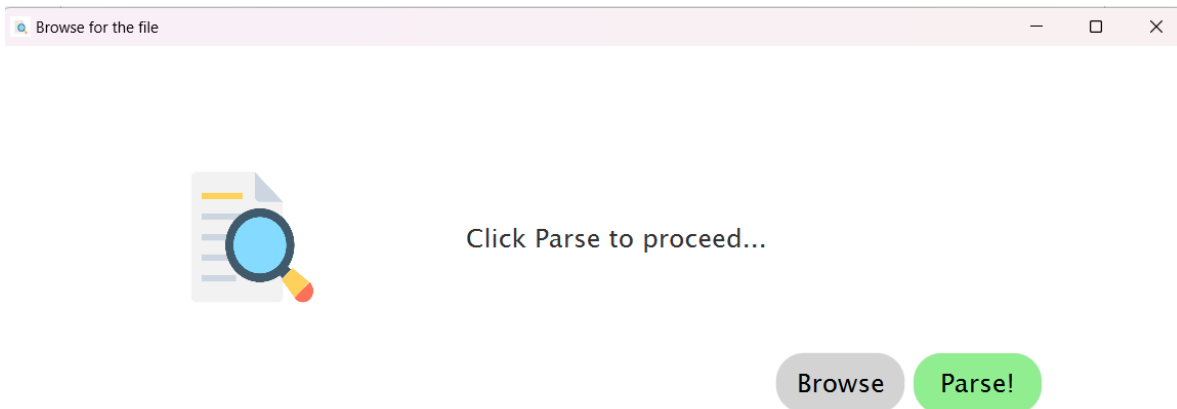
Browse for the file   —   ☐   ✕

Click Parse to proceed...

Browse   Parse!

Figure (2): Clicking Parse

When the user clicks parse, the text file is tokenized using the tokenizer class, which considers the reserved words, numbers, terminals, and other cases and returns and array list of tokens.

Afterward, the array list of tokens is passed into an instance of the class (Recursive Decent Parser). This class will use the given production rules in parsing the file.

If the answer is set to (parsed) then the parsing process didn't encounter any error and the file was parsed successfully. This case scenario will show the user the following Scene in Figure (3):
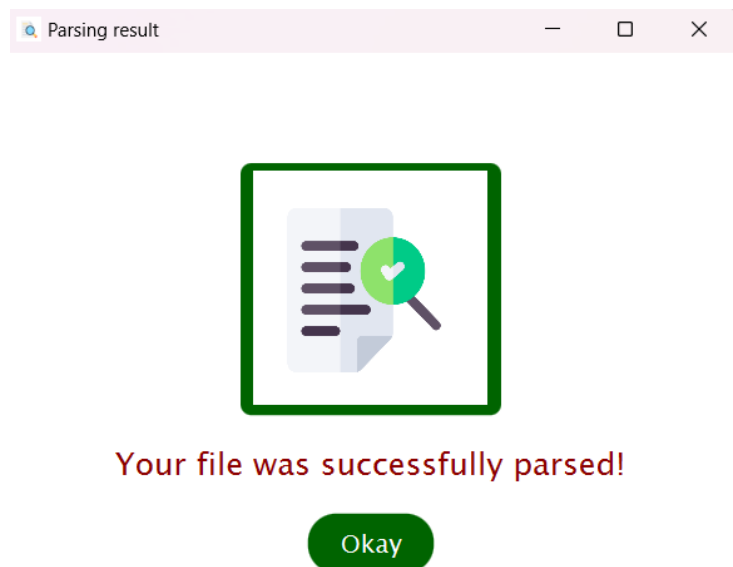
Parsing result   —   ☐   ✕

Figure (3):

Parsed Successfully

Your file was successfully parsed!

Okay

Otherwise, if the parser returns an answer of failed, that means that there is an error occurred in parsing the file. For example, in this failed-to-parse program, the user has used a reserved word in the user-defined names which is (project) so the program will let them know that (invalid naming used reserved words). As Shown in Figure (4) below:
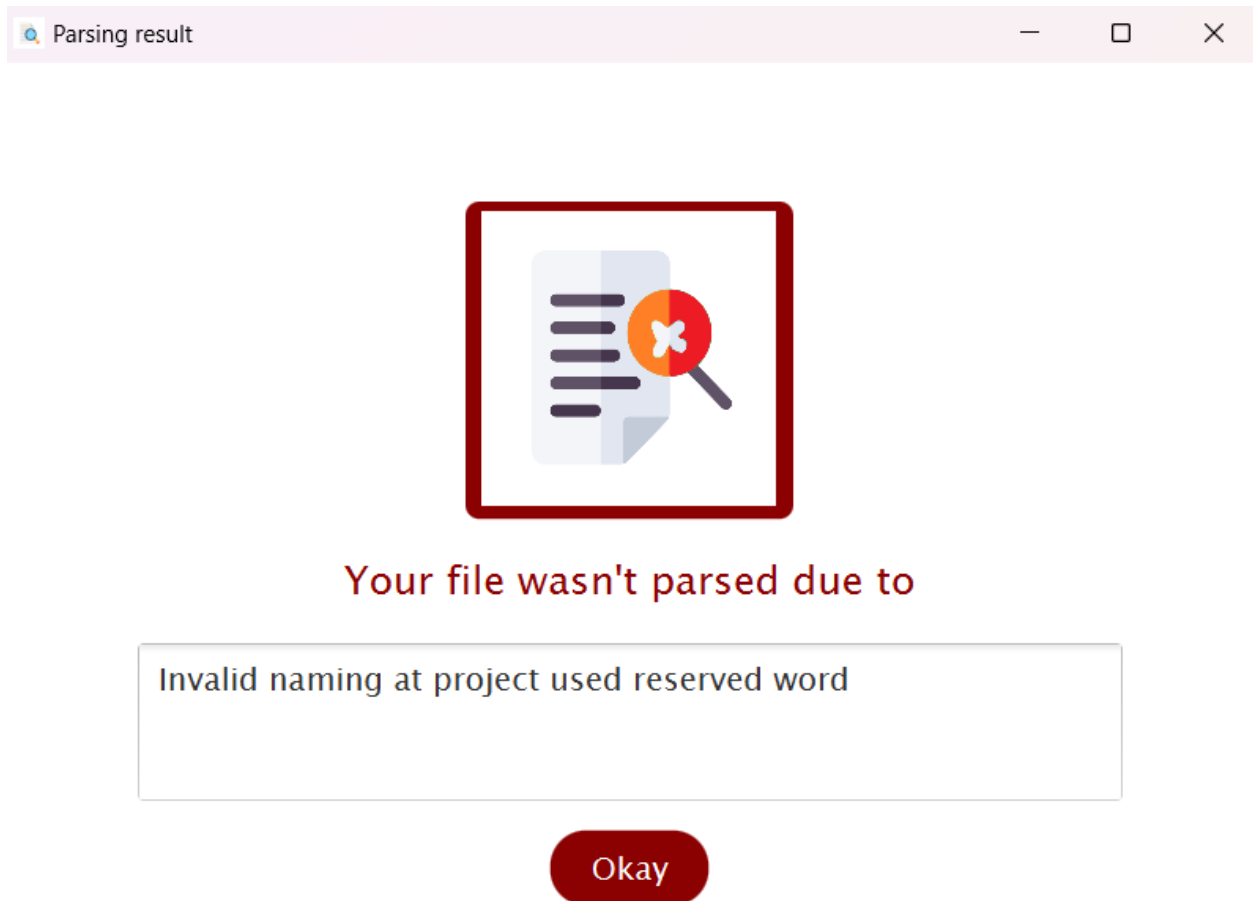

Figure (4): Failed to parse

As required the (Panic mode) is used in the ERROR function, once an error occurs the next token is set to null and the error is returned. Many types of errors were handled, for example, if the user has also entered an invalid integer value they will be shown the error, using the Syntax Error class. Any type of (not expected) values were throwing an error and handled.