/\*\*

\* MyScanner class is designed to tokenize input program files into tokens, identifiers, and constants.

\* It maintains separate lists for operators, separators, and reserved words, along with a filePath

\* from which the program is read. The class also manages SymbolTable to store identifiers and constants,

\* and ProgramInternalForm to store tokens along with their positions and categories.

\*/

public class MyScanner {

private List<String> operators;

private List<String> separators;

private List<String> reservedWords;

private String filePath;

private SymbolTable symbolTable;

private ProgramInternalForm pif;

/\*\*

\* Constructor initializes symbolTable, pif, and filePath.

\* @param filePath - The path of the file to be scanned.

\*/

public MyScanner(String filePath) {...}

/\*\*

\* Reads the content of the file and replaces tabs with spaces.

\* @return - Content of the read file.

\* @throws FileNotFoundException if the file doesn't exist.

\*/

private String readFile() throws FileNotFoundException {...}

/\*\*

\* Prepares the input program elements for tokenization.

\* @return - List of pairs containing tokens/identifiers/constants and their line/column positions.

\*/

private List<Pair<String, Integer>> createListOfProgramElements() {...}

/\*\*

\* Tokenizes the input program elements and categorizes them.

\* Adds tokens/identifiers/constants to SymbolTable and updates ProgramInternalForm.

\*/

public void scan() {...}

/\*\*

\* Gets the ProgramInternalForm.

\* @return - The ProgramInternalForm containing tokens and their positions/categories.

\*/

public ProgramInternalForm getPif() {...}

/\*\*

\* Gets the SymbolTable.

\* @return - The SymbolTable containing identifiers and constants.

\*/

public SymbolTable getSymbolTable() {...}

}

/\*\*

\* ProgramInternalForm class represents a data structure to store tokens along with their positions and categories.

\*/

public class ProgramInternalForm {

private List<Pair<String, Pair<Integer, Integer>>> tokensWithPositions;

private List<Integer> categories;

/\*\*

\* Initializes the lists in the class.

\*/

public ProgramInternalForm() {...}

/\*\*

\* Adds a token/identifier/constant along with its position in the symbol table and its category.

\* @param pair - Token/identifier/constant along with its position in the symbol table.

\* @param type - Category of the token (0 - constant, 1 - identifier, 2 - reservedWord, 3 - operator, 4 - separator).

\*/

public void add(Pair<String, Pair<Integer, Integer>> pair, Integer type) {...}

}