CSC340 -HW2 – part1

SECTION: 87188

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main.java

```
import java.io.File;
import java.io.FileReader;
import java.util.ArrayList;
import java.util.List;

public class main {

	static void printList(List list) {
		for(Object obj : list) {
			if(obj != null)
				System.out.print(obj);
		}
		System.out.println();
	}

	public static void main(String args[]){

		List<Token> listOfTokens = new ArrayList<Token>();

		File f = new File("src\\mython.txt");
		FileReader fr = null;
		try {
			fr = new FileReader(f);
		} catch (Exception e) {
			e.printStackTrace();
		}

		Lexer l = new Lexer(fr);


		while(!l.yyatEOF()) {
			try {
				listOfTokens.add(l.yylex());
			} catch (Exception e) {
				System.out.println("\nEOF/Error");
			}
		}

		printList(listOfTokens);

		System.out.println("End of main!");
	}

}
```

Token.java

```java
import java.io.*;

public class Token {

	private final String type;
	private final String value;

	public Token(String type, String value) {
		this.type = type;
		this.value = value;
	}

	public String getType() {
		return type;
	}

	public String getValue() {
		return value;
	}

	public String toString() {
			return String.format("(%s, \'%s\')", type, value);
	}

}
```

Lexer.java

code in file

example run:

*main.java | Token.java | Lexer.java | mython.txt | main.java

```
1  import java.io.File;
2  import java.io.FileReader;
3  import java.util.ArrayList;
4  import java.util.List;
5
6  public class main {
7
8      static void printList(List list) {
9          for(Object obj : list) {
10             if(obj != null)
11                 System.out.println(obj);
12         }
13         System.out.println();
14     }
15
16     public static void main(String args[]){
17
18         List<Token> listOfTokens = new ArrayList<Token>();
19         File f = new File("src\\mython.txt");
20         FileReader fr = null;
21         try {
22             fr = new FileReader(f);
23         } catch (Exception e) {
24             e.printStackTrace();
25         }
26
27         Lexer l = new Lexer(fr);
28
29
30         while(!l.yyatEOF()) {
31             try {
32                 listOfTokens.add(l.yylex());
33             } catch (Exception e) {
34                 System.out.println("\nEOF/Error");
35             }
36         }
37
38         printList(listOfTokens);
39
40         System.out.println("End of main!");
41     }
42
43 }
44
```

Console

<terminated> main (18) [Java Application] C:\Program Files\Java\jdk-16.0.1\bin\javaw.exe (Mar 17, 2024, 12:26:08 AM – 12:26:08 AM)

```
(KEYWORD, 'def')
(WHITESPACE, ' ')
(IDENTIFIER, 'fib')
(PUNCTUATION, '(')
(IDENTIFIER, 'x')
(PUNCTUATION, ')')
(WHITESPACE, ' ')
(OPERATOR, '=')
(WHITESPACE, ' ')
(KEYWORD, 'if')
(WHITESPACE, ' ')
(IDENTIFIER, 'x')
(WHITESPACE, ' ')
(OPERATOR, '=')
(WHITESPACE, ' ')
(LITERAL, '1')
(WHITESPACE, ' ')
(KEYWORD, 'then')
(WHITESPACE, ' ')
(LITERAL, '0')
(WHITESPACE, ' ')
(KEYWORD, 'else')
(WHITESPACE, '
                    ')
(KEYWORD, 'if')
(WHITESPACE, ' ')
(IDENTIFIER, 'x')
(WHITESPACE, ' ')
(OPERATOR, '=')
(WHITESPACE, ' ')
(LITERAL, '2')
(WHITESPACE, ' ')
(KEYWORD, 'then')
(WHITESPACE, ' ')
(LITERAL, '1')
(WHITESPACE, ' ')
(KEYWORD, 'else')
(WHITESPACE, '
                                    ')
(IDENTIFIER, 'fib')
(PUNCTUATION, '(')
(IDENTIFIER, 'x')
(OPERATOR, '-')
(LITERAL, '1')
(PUNCTUATION, ')')
(WHITESPACE, ' ')
```