Pantalunan, Josh J.

BSCS 2B

Source Code:

```java
import java.util.ArrayList;

import java.util.Scanner;


public class Proj1 {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);

    ArrayList<String> keywords = new ArrayList<>();
    String[] keywordArray = {"int", "float", "if", "else", "return", "while", "for", "char", "void", "main"};
    for (String kw : keywordArray) {
      keywords.add(kw);
    }

    ArrayList<Character> operators = new ArrayList<>();
    char[] operatorArray = {'+', '-', '*', '/', '=', '<', '>', '!'};
    for (char op : operatorArray) {
      operators.add(op);
    }

    while (true) {

      System.out.println("===================================");
      System.out.println("Hello World! Welcome to my Program!");
      System.out.println("PANTALUNAN, JOSH J.");
      System.out.println("BSCS 2B");
```

```java
System.out.println("============== Menu ==============");

System.out.println("1. Start the Program");

System.out.println("2. Exit the Program");

System.out.print("Enter your choice: ");

int choice = scanner.nextInt();

System.out.println("==================================");

scanner.nextLine();


if (choice == 1) {

    System.out.print("Enter your code: ");

    String code = scanner.nextLine();

    System.out.println("\n==================================");


    ArrayList<String> tokens = new ArrayList<>();

    String token = "";


    for (int i = 0; i < code.length(); i++) {

        char ch = code.charAt(i);


        if (Character.isLetterOrDigit(ch) || ch == '_') {

            token += ch;

        } else {

            if (!token.isEmpty()) {

                tokens.add(token);

                token = "";

            }

            if (operators.contains(ch)) {

                tokens.add(String.valueOf(ch));

            }
```

```java
      }
    }
    if (!token.isEmpty()) {
      tokens.add(token);
    }

    System.out.println("\n=============================");
    System.out.printf("| %-15s | %-10s |\n", "TOKEN", "TYPE");
    System.out.println("=============================");

    for (String t : tokens) {
      String type;
      if (keywords.contains(t)) {
        type = "KEYWORD";
      } else if (t.length() == 1 && operators.contains(t.charAt(0))) {
        type = "OPERATOR";
      } else {
        type = "IDENTIFIER";
      }
      System.out.printf("| %-15s | %-10s |\n", t, type);
    }

    System.out.println("=============================");

    System.out.println("\nReturning to the menu...");
  } else if (choice == 2) {
    System.out.println("Exiting the program...");
    scanner.close();
    break;
```

```
        } else {

            System.out.println("Invalid choice. Please enter 1 or 2.");

        }

    }

  }

}
```

Output:

```
PANTALUNAN, JOSH J.
BSCS 2B
=============== Menu ===============
1. Start the Program
2. Exit the Program
Enter your choice: 1
===================================
Enter your code: int = 3;


===================================


===============================
| TOKEN          | TYPE        |
===============================
| int            | KEYWORD     |
| =              | OPERATOR    |
| 3              | IDENTIFIER  |
===============================

Returning to the menu...
===================================
Hello World! Welcome to my Program!
PANTALUNAN, JOSH J.
BSCS 2B
=============== Menu ===============
1. Start the Program
2. Exit the Program
Enter your choice:
```