

User Guide: TianleLang

Welcome to **TianleLang Program Language**, a simple developed using JavaCC. This guide will help you learn the features of this language syntax.

Table of Contents

1. Introduction

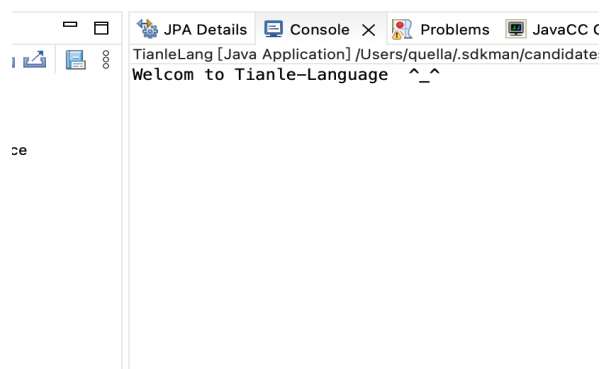
- What is TianleLang?
 - It is base in JavaCC, the function logic implement in java. But TianleLang Syntax is more easier to learned , benefit to Programme beginner.
 - Simple Syntax, Quick Start
 - Implemented Functions:
 - i. Assign Expression Function
 - ii. Display Function
 - iii. Loop Function
 - iv. Ignore Comment Line
- Environment Requirements
 - Java version - "17.0.8"
 - Java Compiler Compiler Version 7.0.12 (Parser Generator)

2. Getting Started

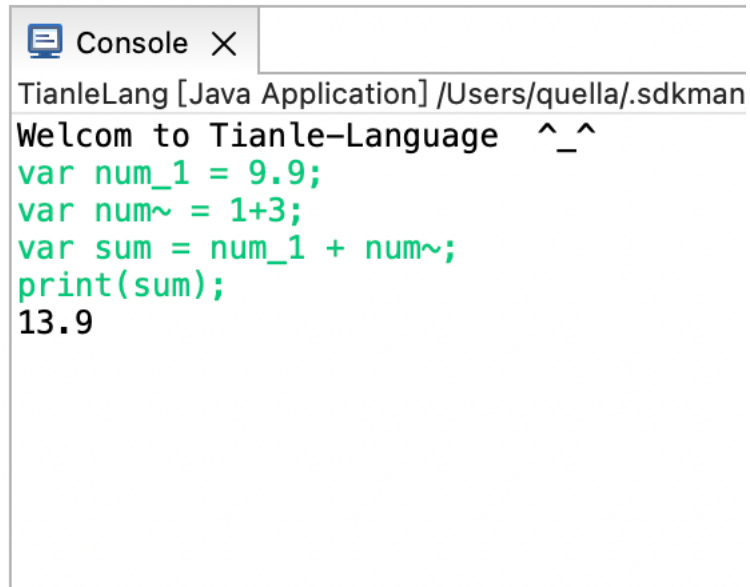
- Go to bash/ command window :
 - GitClone: <https://github.com/Tianle97/JavaCC-Assignment1.git>
- Open Eclipse, import the jj file which gitclone from github
 - Find the TianleLang.java file and click run it

3. Syntax

- Test code In the console
 - When the programme start :



- Assign Expression Function:
 - i. Assign Statement: **VAR/var variableName = NUMBER; or CalculateExpression;** (can be double/integer type)
 - ii. It only accept lowercase, '_' and '~'
 - iii. Keyword of variable assign -> VAR or var



The screenshot shows a console window titled 'Console' with a close button. The text inside the console reads: 'TianleLang [Java Application] /Users/quella/.sdkman', 'Welcom to Tianle-Language ^_^', followed by three lines of code in green: 'var num_1 = 9.9;', 'var num~ = 1+3;', and 'var sum = num_1 + num~;'. Below the code is the output 'print(sum);' and the result '13.9'.

- iv.
- LOOP Function:
 - i. LOOP statement (end of “:”):
 - a. **LOOP/loop variableName in (startNum,stopNum,steps):**
 1. startNum – Optional. An integer number is to start. Default is 0
 2. stop Num – Required. An integer number is to stop (not included).
 3. step – Optional. An integer number specifying the incrementation. Default is 1

```
Console X
TianleLang [Java Application] /Users/quella/.sdkman/candidates/java
Welcom to Tianle-Language ^_^
var num_1 = 9.9;
var num~ = 1+3;
var sum = num_1 + num~;
print(sum);
13.9
PRINT(e);
Invalid Syntax
PRINT('hello_world');
hello_world

#loop function
loop i in (6):
print(i);
0
1
2
3
4
5
6

loop y in (4,14,3):
print(y);
4
7
10
13

loop x in (4,8):
print(x);
4
5
6
7
8
```

ii.

➤ Display Function:

i. Print Statement:

- PRINT/print(variableName);.**
- PRINT/print('words');**
- PRINT/print(result of Calculate Expression)**

ii. The variable should be assigned otherwise will print out error msg

```
Console X
TianleLang [Java Application] /Users/quella/.sdkman
Welcom to Tianle-Language ^_^
var num_1 = 9.9;
var num~ = 1+3;
var sum = num_1 + num~;
print(sum);
13.9
PRINT(e);
Invalid Syntax
```

a.

iii. Print words only accept lowercase , '_' and '~.

```

Console X
TianleLang [Java Application] /Users/quella/.sdkman/can
Welcom to Tianle-Language  ^_^
var num_1 = 9.9;
var num~ = 1+3;
var sum = num_1 + num~;
print(sum);
13.9
PRINT(e);
Invalid Syntax
PRINT('hello_world');
hello_world

```

a.

iv. Print result of calculate expression

```

print(1+2*9-2);
17.0

PRINT(1+4*5/2-2);
9.0

```

a.

➤ Ignore Comment line:

i. Use '#' symbol then that line will not comple

```

SPECIAL_TOKEN : //Comments
{
  < SINGLE_LINE_COMMENT : "#" (~[ "\n",
"\r" ])* >
}

```

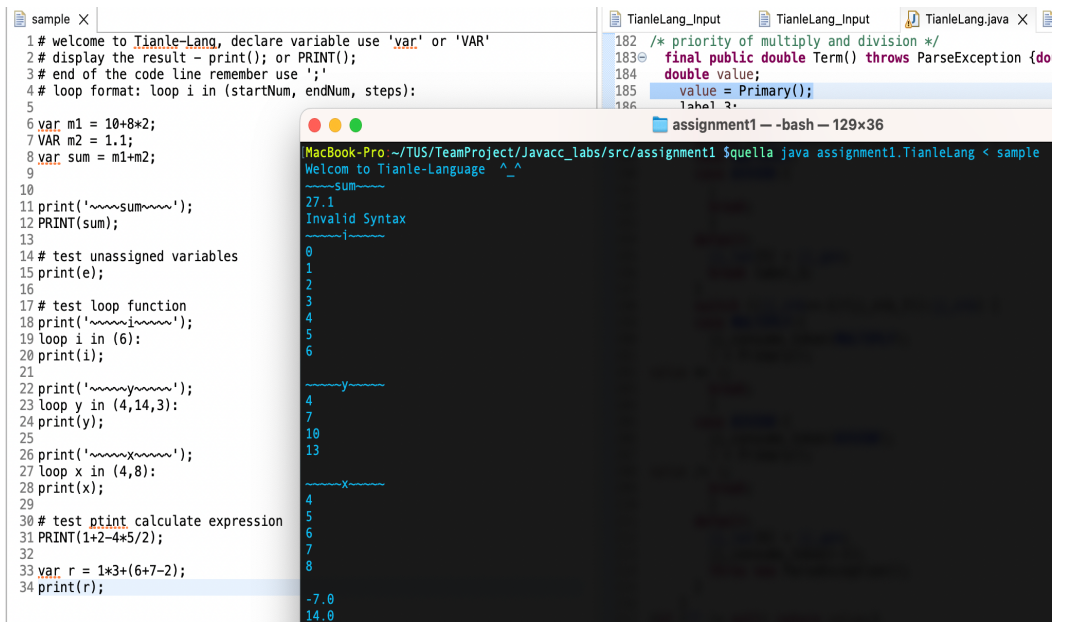
• How to test in text file:

➤ Create a text file in the same package with jj file

➤ Go to the package path in the bash / command window

i. > cd file path

ii. > java packaName.TianleLang < textFileNale



The screenshot displays a code editor with a file named 'sample' and a terminal window. The code in 'sample' includes comments and instructions for using 'var' or 'VAR' for variable declaration, followed by several lines of code for variable assignment, printing, and loops. The terminal window shows the output of running the 'sample' file, including a welcome message, a sum calculation, and a loop output. A syntax error is also visible in the terminal output.

```
1 # welcome to Tianle-Lang, declare variable use 'var' or 'VAR'
2 # display the result - print(); or PRINT();
3 # end of the code line remember use ';'
4 # loop format: loop i in (startNum, endNum, steps):
5
6 var m1 = 10+8*2;
7 VAR m2 = 1.1;
8 var sum = m1+m2;
9
10
11 print('~~~~~sum~~~~~');
12 PRINT(sum);
13
14 # test unassigned variables
15 print(e);
16
17 # test loop function
18 print('~~~~~i~~~~~');
19 loop i in (6):
20 print(i);
21
22 print('~~~~~y~~~~~');
23 loop y in (4,14,3):
24 print(y);
25
26 print('~~~~~x~~~~~');
27 loop x in (4,8):
28 print(x);
29
30 # test print calculate expression
31 PRINT(1+2-4*5/2);
32
33 var r = 1+3+(6+7-2);
34 print(r);
```

```
182 /* priority of multiply and division */
183 final public double Term() throws ParseException {do
184 double value;
185 value = Primary();
186 }
```

```
assignment1 -- -bash -- 129x36
MacBook-Pro:~/TUS/TeamProject/Javacc_labs/src/assignment1 $java assignment1.TianleLang < sample
Welcom to Tianle-Language ^_^
~~~~~sum~~~~~
27.1
Invalid Syntax
~~~~~i~~~~~
0
1
2
3
4
5
6
~~~~~y~~~~~
4
7
10
13
~~~~~x~~~~~
4
5
6
7
8
-7.0
14.0
```

Common Issues and Solutions

If you encounter any issues while using TianleLang, please reach out to support at A00268357@student.tus.ie for assistance.