

MINI cdLan Compiler cDL

PROJECT 20222



Using Java and JAVACC, design a mini Compiler that handle errors and execute statements for **cdLan** codes.

For example, if a developer write: WriteTo ("Hello world"). ,you will execute it as print Hello world to console. But if a developer writes, if " x==0 " let : WriteTo ("Hello world"). : you will execute it as print to console or not, according to whether condition true or false. Your Mini **cdLan** language will include statements from the following syntax examples:

First Ex:

```
integer x!=5.
```

```
WriteTo ("The loop time is :" !! x).
```

```
iterate "i in 1 to 10" let :
```

```
    WriteTo ("The index now is:" !! i).
```

```
        if " i >= 2 " let:
```

```
            WriteTo( "i is greater than 2 or 2").
```

```
        otherIf "i < 2 and i!=0" let :
```

```
            WriteTo( "x is 1").
```

```
        other
```

```
            WriteTo( "number is zero").
```

```
    :
```

```
    :
```

Second Ex:

```
String x.  
Integer y.  
y != ReadFrom(io.console).  
x != ReadFrom(io.console).  
as long "x >= 0" :  
    WriteTo(y.toString() !! " " !! y).  
    y++.  
:
```

Third Ex:

```
Integer day.  
day != ReadFrom(io.console).  
cases (day):  
    [1]:  
        WriteTo("Saturday").  
    end.  
    [2]:  
        WriteTo("Sunday").  
    end.  
    [3]:  
        WriteTo("Monday").  
    end.  
    [4]:  
        WriteTo("Tuesday").  
    end.  
    [5]:
```

```

        WriteTo("Wednesday").
    end.
[6]:
        WriteTo("Thursday").
    end.
[7]:
        WriteTo("Friday").
    end.
[]:
        String message != "Invalid number. Must be between 1 and 7".
        WriteTo(message).
    end.
:
```

Fourth Ex:

```

String(6) x!= "mike".
Loop over "x":
    Y!=ReadFrom(io.console).
    WriteTo(y).
    WriteTo(x).
:
```

Fifth Ex:

```

integer[5] arr != {"Mike", "Charlie", "Amy", "Dan", "Carol"}.
loop over "arr as name":
    WriteTo("Person name is: " !! name).
:
```

- **Input statement**
- **Output statement** (can print Value(variable,int,string,bool) or concatenation Value.....)
- **Assignment statement.**
 - Type assignment
 - **Array assignment**
- **If statement** (with single condition or multiple conditions either "and" or "or")
 - Note: if has a multiple condition (it will be more than two conditions) ,the Relational Operators is (==,!=,< ,>,<=,>=), MC and with or condition are optional.
- **Iterate statement.**
- **As long statement** to repeat value as condition,
- **Loop over statement** to repeat a number of times or over an array.
- **Case statement with multiple statements.**

Notes

- **Group of work : 3 students' At Most ,2 student At Least.**
- **Deadline :from 4/6/2023 to 6/6/2022 according to a discussion schedule time decided later , But consider each group on the day of his lecture.**

Best Regards