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Compilers

User Manual for Compiler

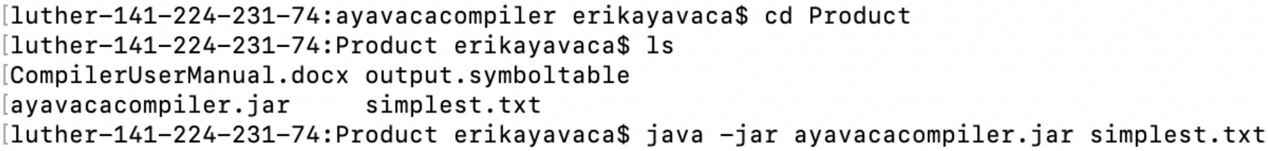
To use this compiler:

1. Locate the “ayavacacompiler.jar” file in the “Product” folder
2. Locate the Mini-pascal (.pas) file you would like to compile, in the case of this compiler, we would use a text file
3. Put both files in the same directory
4. Use the command line to navigate to files
5. Run the following command: java -jar ayavacacompiler.jar input.txt
   Where input.txt is the name of your pascal file you would like to compile

Example of using compiler:

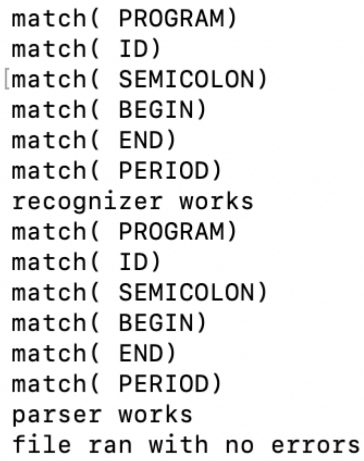
program foo;
begin
end
.

Is an example of the simplest pascal program:
Below is an image detailing how to use the jar



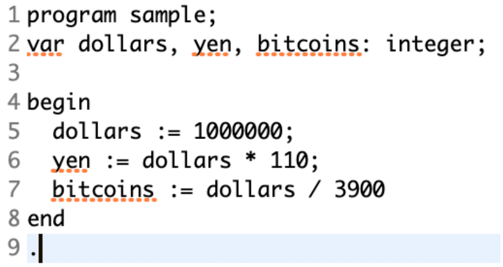
```
[luther-141-224-231-74:ayavacacompiler erikayavaca$ cd Product
[luther-141-224-231-74:Product erikayavaca$ ls
[CompilerUserManual.docx output.symboltable
[ayavacacompiler.jar     simplest.txt
[luther-141-224-231-74:Product erikayavaca$ java -jar ayavacacompiler.jar simplest.txt
```

Using the instructions above we get the following output in the command line:



```
 match( PROGRAM)
 match( ID)
[match( SEMICOLON)
 match( BEGIN)
 match( END)
 match( PERIOD)
 recognizer works
 match( PROGRAM)
 match( ID)
 match( SEMICOLON)
 match( BEGIN)
 match( END)
 match( PERIOD)
 parser works
 file ran with no errors
```

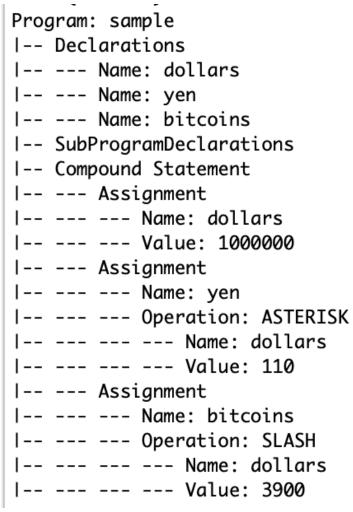
Now if we were to parse the following program:



```
program sample;
var dollars, yen, bitcoins: integer;

begin
  dollars := 1000000;
  yen := dollars * 110;
  bitcoins := dollars / 3900
end
.
```

The parser will output the following tree:



```
Program: sample
|-- Declarations
|-- --- Name: dollars
|-- --- Name: yen
|-- --- Name: bitcoins
|-- SubProgramDeclarations
|-- Compound Statement
|-- --- Assignment
|-- --- --- Name: dollars
|-- --- --- Value: 1000000
|-- --- Assignment
|-- --- --- Name: yen
|-- --- --- Operation: ASTERISK
|-- --- --- --- Name: dollars
|-- --- --- --- Value: 110
|-- --- Assignment
|-- --- --- Name: bitcoins
|-- --- --- Operation: SLASH
|-- --- --- --- Name: dollars
|-- --- --- --- Value: 3900
```

Limitations of this compiler:

- Can only recognize valid pascal programs.
- Can parse pascal program to return nodes.
- Semantic analyzer is not working properly.
- Code generation not working properly.