Programming Environment

Introduction to Compiler Construction

Outline

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Working with the *j--* Compiler

Working with the *iota* compiler

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Linux, Mac, or Windows operating system configured with the software needed for the course

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- Web browser

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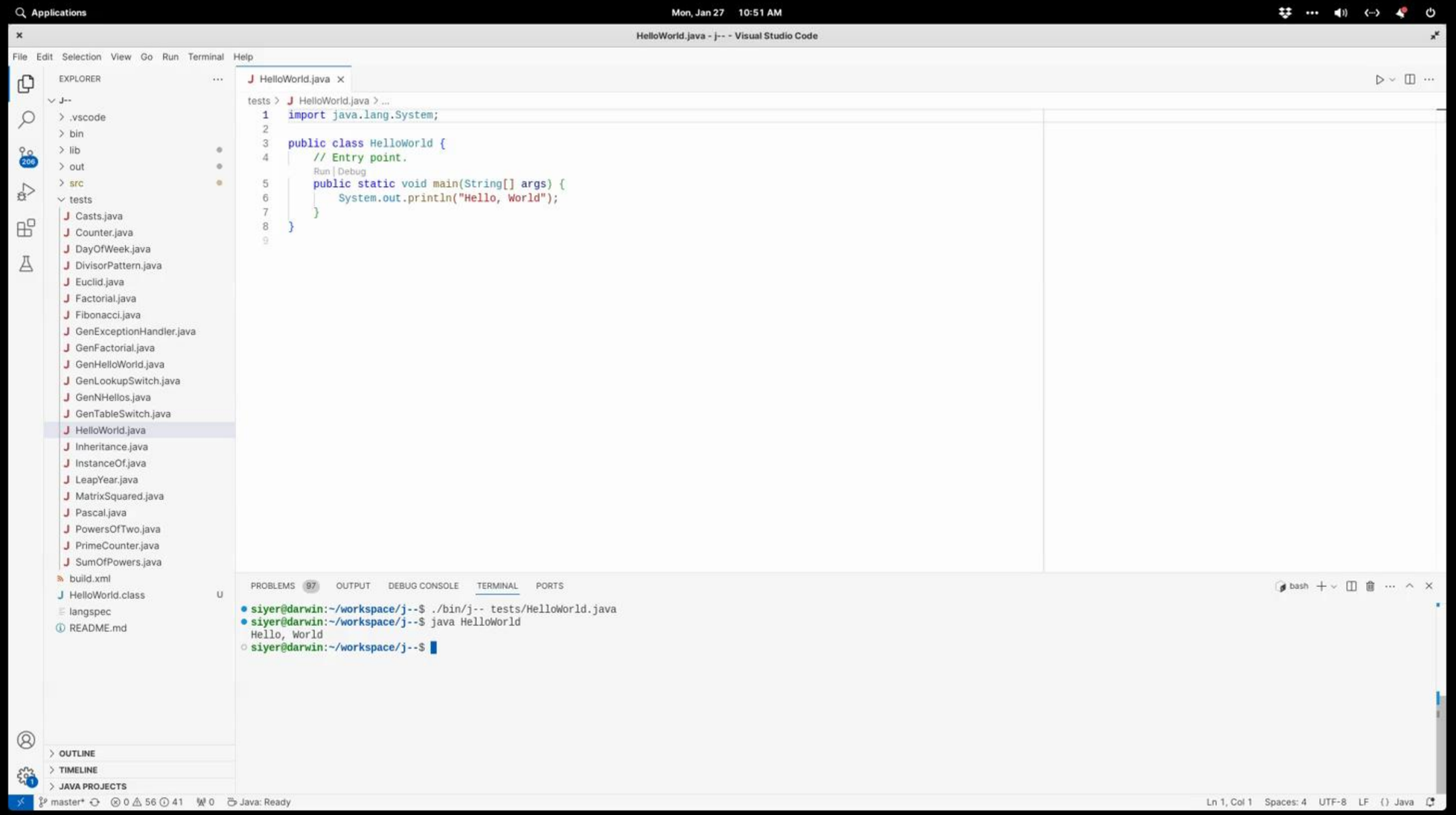

Working with the *j*-- Compiler

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```
$ ant
```

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Launch VSCode and open the folder `~/workspace/j--`

To compile the compiler, run the following command in the VSCode terminal

```
$ ant
Buildfile: ~/workspace/j--/build.xml
...
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To get the usage syntax for the compiler, run

```
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To compile the compiler, run the following command in the VSCode terminal

```
$ ant
Buildfile: ~/workspace/j--/build.xml
...
$ _
```

To get the usage syntax for the compiler, run

```
$ ./bin/j--
```

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Launch VSCode and open the folder `~/workspace/j--`

To compile the compiler, run the following command in the VSCode terminal

```
$ ant
Buildfile: ~/workspace/j--/build.xml
...
$ _
```

To get the usage syntax for the compiler, run

```
$ ./bin/j--
Usage: j-- <options> <source file>
Where possible options include:
  -t  Tokenize input and print tokens to STDOUT
  -p  Parse input and print AST to STDOUT
  -pa Pre-analyze input and print AST to STDOUT
  -a  Analyze input and print AST to STDOUT
  -d  <dir> Specify where to place output (.class) files; default = .
$ _
```

Working with the *j*-- Compiler

Working with the *j--* Compiler

To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ _
```

Working with the *j--* Compiler

To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ ./bin/j-- tests/HelloWorld.java
```

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To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ ./bin/j-- tests/HelloWorld.java
$ _
```

Working with the *j--* Compiler

To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ ./bin/j-- tests/HelloWorld.java
$ _
```

To run the generated JVM program `HelloWorld.class`, run

```
$ _
```

Working with the *j--* Compiler

To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ ./bin/j-- tests/HelloWorld.java
$ _
```

To run the generated JVM program `HelloWorld.class`, run

```
$ java HelloWorld
```

Working with the *j--* Compiler

To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ ./bin/j-- tests/HelloWorld.java
$ _
```

To run the generated JVM program `HelloWorld.class`, run

```
$ java HelloWorld
Hello, World
$ _
```

Working with the *j--* Compiler

To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ ./bin/j-- tests/HelloWorld.java
$ _
```

To run the generated JVM program `HelloWorld.class`, run

```
$ java HelloWorld
Hello, World
$ _
```

To disassemble `HelloWorld.class`, run

```
$ _
```

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```
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```

To run the generated JVM program `HelloWorld.class`, run

```
$ java HelloWorld
Hello, World
$ _
```

To disassemble `HelloWorld.class`, run

```
$ javap -p -v HelloWorld.class
```

Working with the *j--* Compiler

To compile a *j--* program (eg, `$j/j--/tests/HelloWorld.java`) for the JVM, run

```
$ ./bin/j-- tests/HelloWorld.java
$ _
```

To run the generated JVM program `HelloWorld.class`, run

```
$ java HelloWorld
Hello, World
$ _
```

To disassemble `HelloWorld.class`, run

```
$ javap -p -v HelloWorld.class
Classfile ~/workspace/j--/HelloWorld.class
...
$ _
```

Working with the *iota* Compiler

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Launch VSCode and open the folder `~/workspace/iota`

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```
$ _
```

Working with the *iota* Compiler

Suppose the compiler (`iota.zip`) was downloaded and extracted under `~/workspace`

Launch VSCode and open the folder `~/workspace/iota`

To compile the compiler, run the following command in the VSCode terminal

```
$ ant
```

Working with the *iota* Compiler

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Launch VSCode and open the folder `~/workspace/iota`

To compile the compiler, run the following command in the VSCode terminal

```
$ ant
Buildfile: ~/workspace/iota/build.xml
...
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To compile the compiler, run the following command in the VSCode terminal

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$ ant
Buildfile: ~/workspace/iota/build.xml
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```

To get the usage syntax for the compiler, run

```
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Suppose the compiler (`iota.zip`) was downloaded and extracted under `~/workspace`

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To compile the compiler, run the following command in the VSCode terminal

```
$ ant
Buildfile: ~/workspace/iota/build.xml
...
$ _
```

To get the usage syntax for the compiler, run

```
$ ./bin/iota
```

Working with the *iota* Compiler

Suppose the compiler (`iota.zip`) was downloaded and extracted under `~/workspace`

Launch VSCode and open the folder `~/workspace/iota`

To compile the compiler, run the following command in the VSCode terminal

```
$ ant
Buildfile: ~/workspace/iota/build.xml
...
$ _
```

To get the usage syntax for the compiler, run

```
$ ./bin/iota
Usage: iota <options> <source file>
Where possible options include:
  -g  Allocate registers using graph coloring method; default = naive method
  -v  Display intermediate representations and liveness intervals
  -d  <dir> Specify where to place output (.marv) file; default = .
$ _
```

Working with the *iota* Compiler

Working with the *iota* Compiler

To compile an *iota* program (eg, `$j/iota/tests/Factorial.iota`) for the Marvin machine, run

```
$ _
```

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To compile an *iota* program (eg, `$j/iota/tests/Factorial.iota`) for the Marvin machine, run

```
$ ./bin/iota tests/Factorial.iota
```

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```
$ ./bin/iota tests/Factorial.iota
$ _
```

Working with the *iota* Compiler

To compile an *iota* program (eg, `$j/iota/tests/Factorial.iota`) for the Marvin machine, run

```
$ ./bin/iota tests/Factorial.iota
$ _
```

To run the generated Marvin program `Factorial.marv`, run

```
$ _
```

Working with the *iota* Compiler

To compile an *iota* program (eg, `$j/iota/tests/Factorial.iota`) for the Marvin machine, run

```
$ ./bin/iota tests/Factorial.iota
$ _
```

To run the generated Marvin program `Factorial.marv`, run

```
$ python3 ./bin/marvin.py Factorial.marv
```

Working with the *iota* Compiler

To compile an *iota* program (eg, `$j/iota/tests/Factorial.iota`) for the Marvin machine, run

```
$ ./bin/iota tests/Factorial.iota
$ _
```

To run the generated Marvin program `Factorial.marv`, run

```
$ python3 ./bin/marvin.py Factorial.marv
_
```

Working with the *iota* Compiler

To compile an *iota* program (eg, `$j/iota/tests/Factorial.iota`) for the Marvin machine, run

```
$ ./bin/iota tests/Factorial.iota
$ _
```

To run the generated Marvin program `Factorial.marv`, run

```
$ python3 ./bin/marvin.py Factorial.marv
5
```

Working with the *iota* Compiler

To compile an *iota* program (eg, `$j/iota/tests/Factorial.iota`) for the Marvin machine, run

```
$ ./bin/iota tests/Factorial.iota
$ _
```

To run the generated Marvin program `Factorial.marv`, run

```
$ python3 ./bin/marvin.py Factorial.marv
5
120
$ _
```