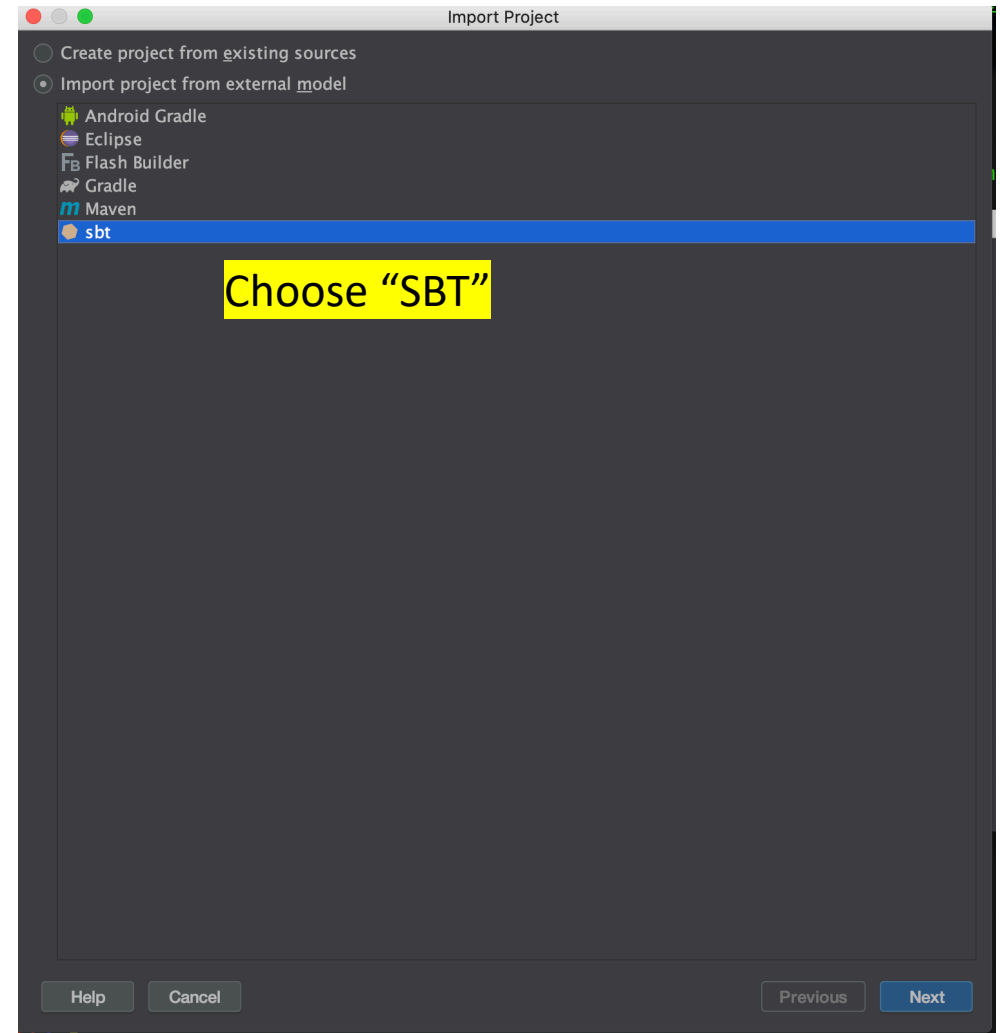
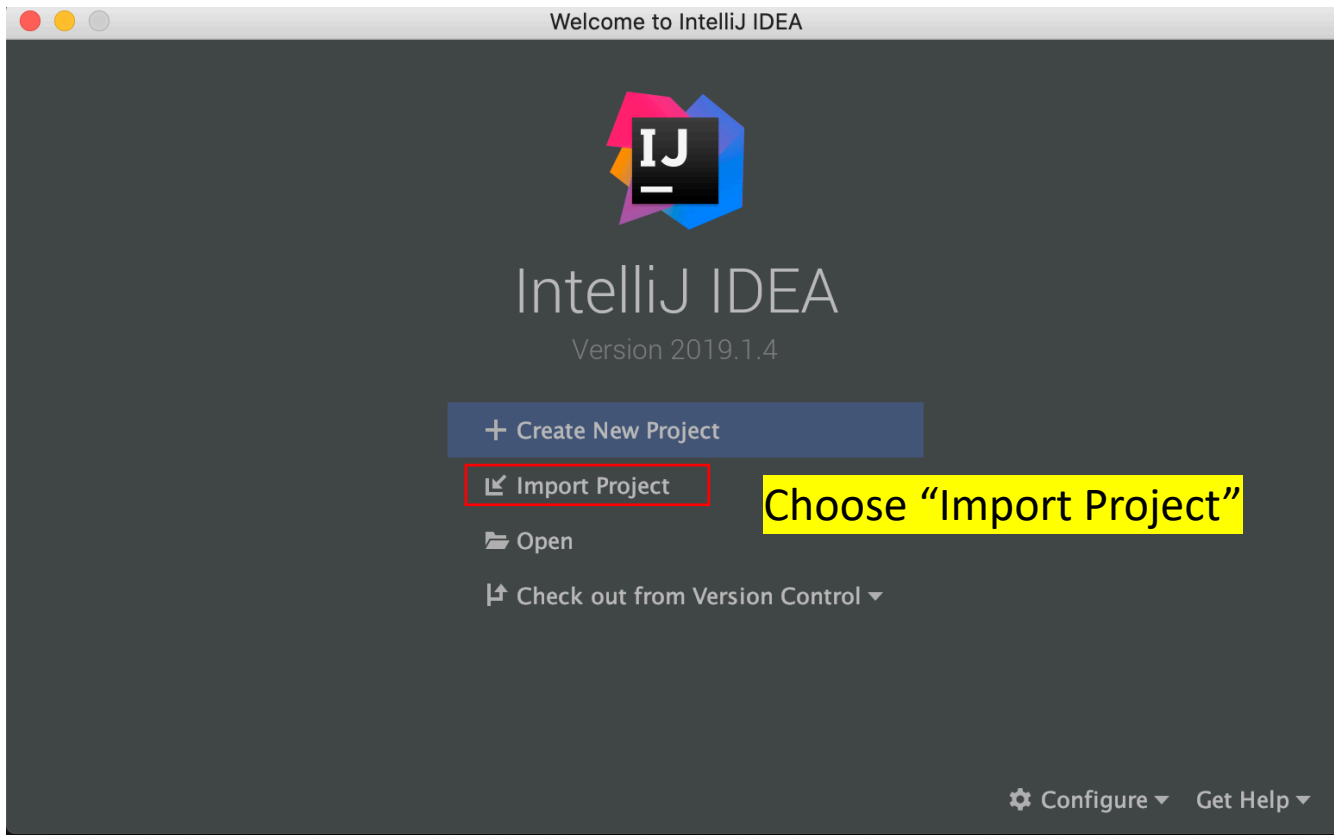


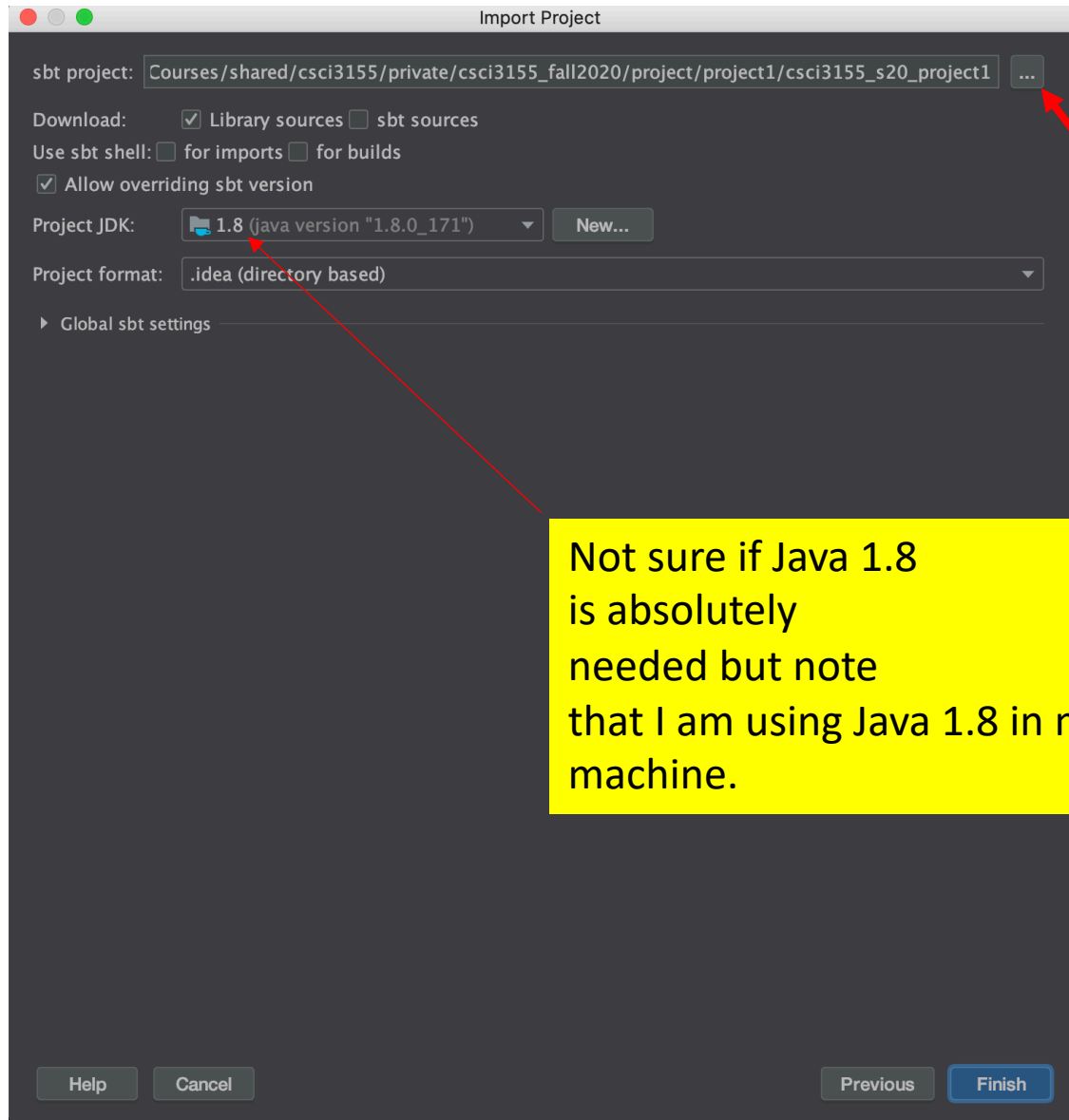
Project Setup Instructions

CSCI 3155

Steps

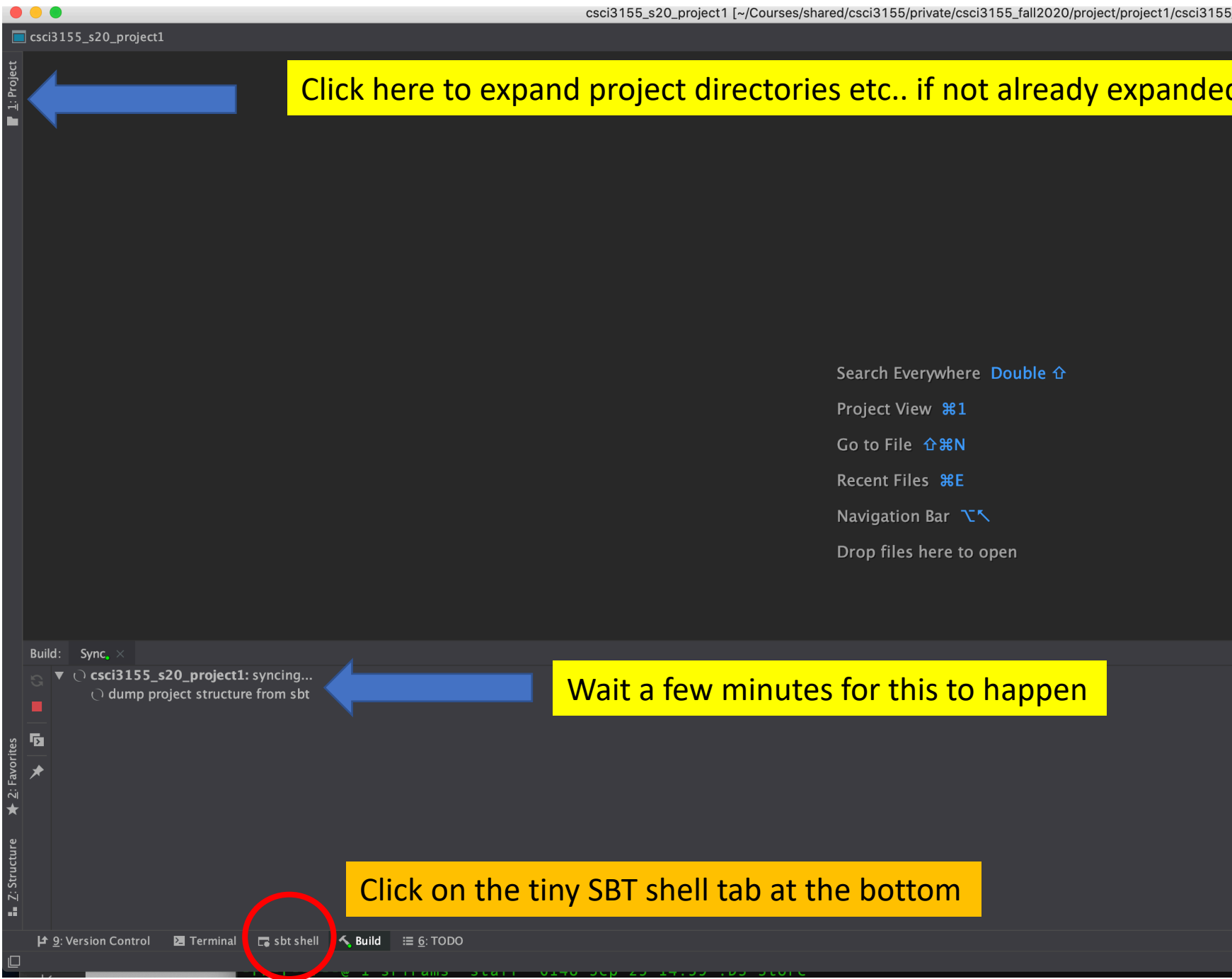
- Download and unzip the project file.
- Install IntelliJ IDEA: get the full version by signing up with your CU Boulder email for an academic license.





Press here
to navigate
to the root
directory of
the project
after unzipping it

Not sure if Java 1.8
is absolutely
needed but note
that I am using Java 1.8 in my
machine.



Click here to expand project directories etc.. if not already expanded for you

Wait a few minutes for this to happen

Click on the tiny SBT shell tab at the bottom

Once you are in the “SBT Shell”: there will be a prompt after some time of setup.
Type “test” on the prompt

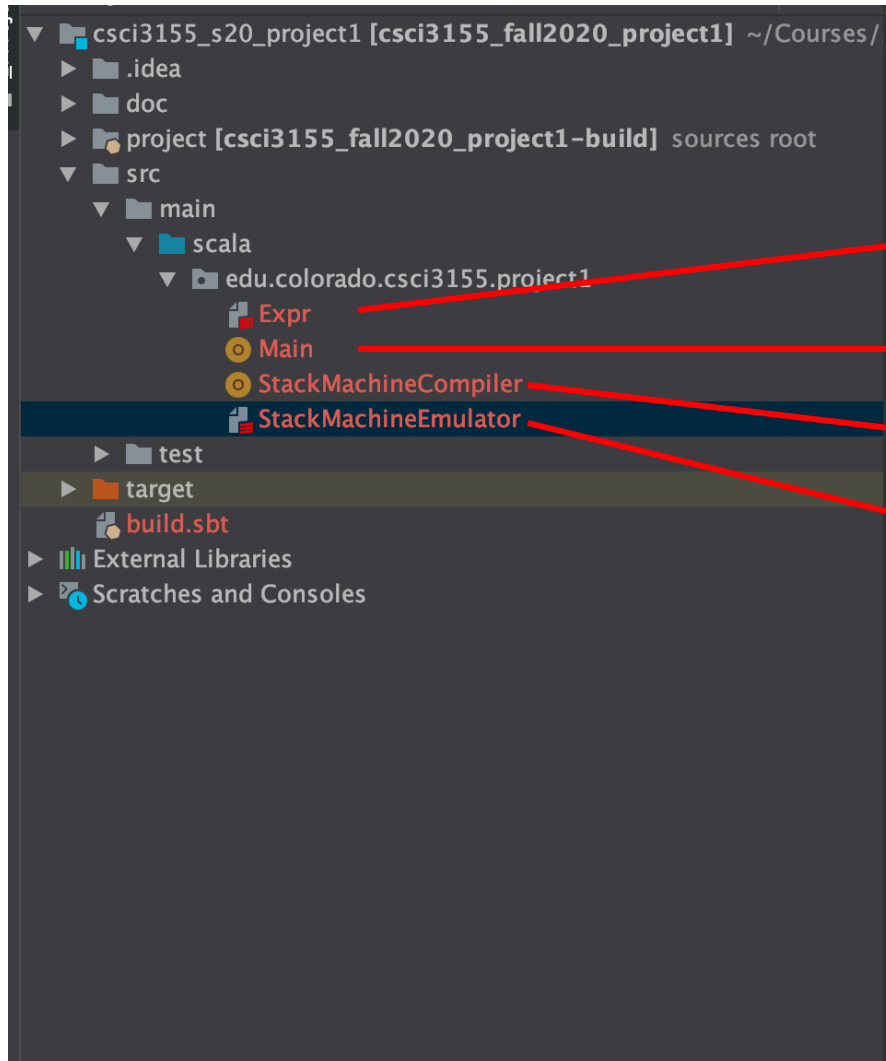
> test

```
[error]      test("stack machine test 5") {  
[error]      ^  
[error] 18 errors found  
[error] (Test / compileIncremental) Compilation failed  
[error] Total time: 12 s, completed Sep 25, 2020 9:56:38 PM  
[IJ]sbt:csci3155_fall2020_project1>
```

You will see a bunch of errors and
then a message saying
18 errors found.

This is because nothing is implemented yet.

Scala Code Layout



Expr.scala Definition of Expr AST

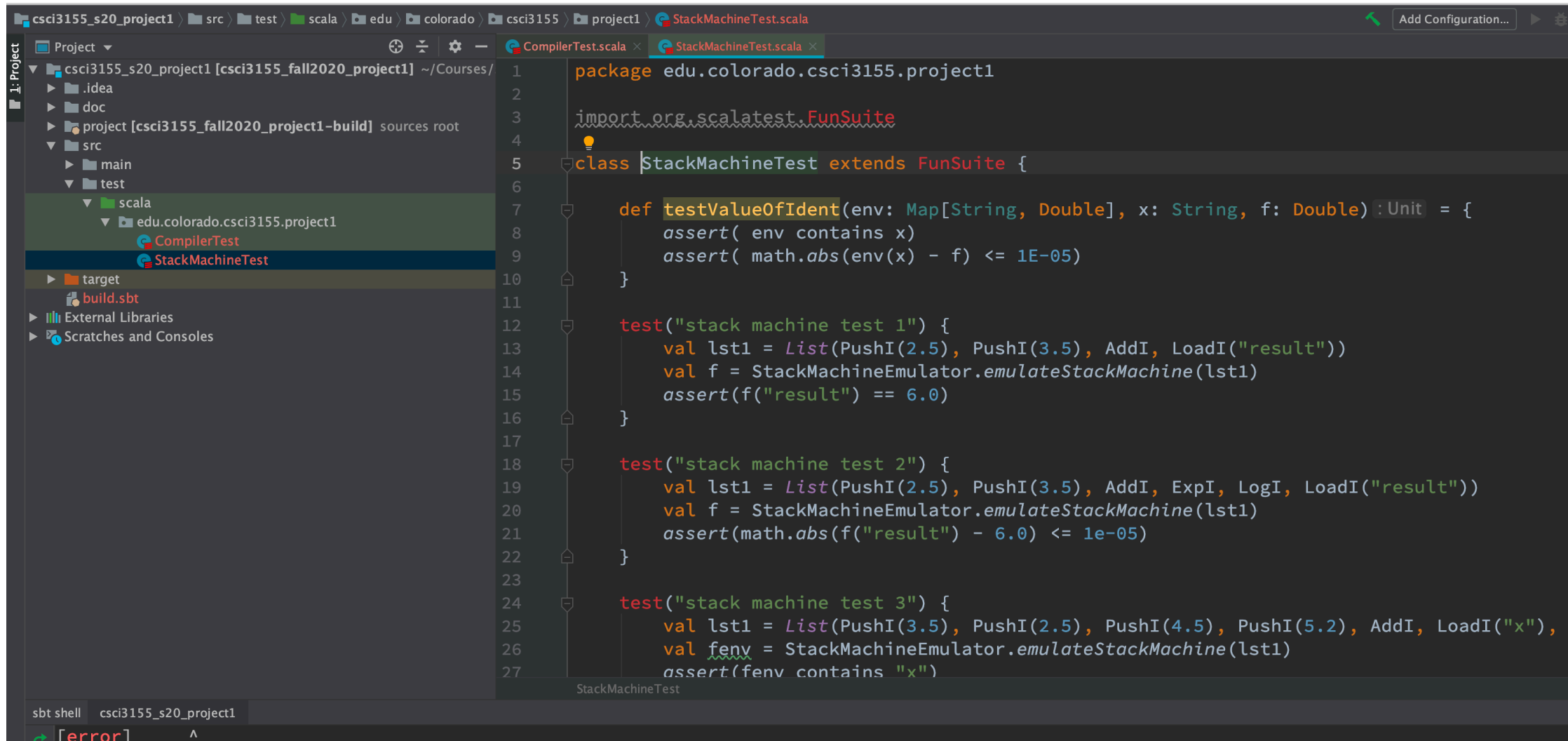
Main.scala Can be ignored for now

Part 2 of the project: Compile into Stack Machine Instr.

Part 1 of the project: Emulate Stack Machine

Test Cases Layout

See where the test cases are in the directory structure. These are the tests that sbt test runs for you.



The screenshot shows an IDE with a project structure on the left and Scala code in the center. The project structure on the left includes a 'test' directory under 'src', which contains a 'scala' subdirectory. Inside 'scala', there is a package 'edu.colorado.csci3155.project1' containing two test files: 'CompilerTest' and 'StackMachineTest'. The 'StackMachineTest' file is selected and highlighted. The code in the center is the content of 'StackMachineTest.scala', which defines a class 'StackMachineTest' extending 'FunSuite'. It includes three test cases: 'testValueOfIdent', 'test("stack machine test 1")', and 'test("stack machine test 2")'. The 'testValueOfIdent' method tests the 'env' map for a specific value. The 'test("stack machine test 1")' method tests the 'emulateStackMachine' function with a list of instructions. The 'test("stack machine test 2")' method tests the 'emulateStackMachine' function with a list of instructions and an assertion on the result. The 'test("stack machine test 3")' method tests the 'emulateStackMachine' function with a list of instructions and an assertion on the result. The bottom of the IDE shows a terminal window with the command 'sbt test' and the output 'StackMachineTest'.

```
1 package edu.colorado.csci3155.project1
2
3 import org.scalatest.FunSuite
4
5 class StackMachineTest extends FunSuite {
6
7   def testValueOfIdent(env: Map[String, Double], x: String, f: Double) : Unit = {
8     assert( env contains x)
9     assert( math.abs(env(x) - f) <= 1E-05)
10  }
11
12  test("stack machine test 1") {
13    val lst1 = List(PushI(2.5), PushI(3.5), AddI, LoadI("result"))
14    val f = StackMachineEmulator.emulateStackMachine(lst1)
15    assert(f("result") == 6.0)
16  }
17
18  test("stack machine test 2") {
19    val lst1 = List(PushI(2.5), PushI(3.5), AddI, ExpI, LogI, LoadI("result"))
20    val f = StackMachineEmulator.emulateStackMachine(lst1)
21    assert(math.abs(f("result") - 6.0) <= 1e-05)
22  }
23
24  test("stack machine test 3") {
25    val lst1 = List(PushI(3.5), PushI(2.5), PushI(4.5), PushI(5.2), AddI, LoadI("x"),
26    val fenv = StackMachineEmulator.emulateStackMachine(lst1)
27    assert(fenv contains "x")
28  }
```

Submission

- When you are all done – you will get all test passed message when you type “test” on SBT shell prompt.
- Type “checkAndZipSubmission” on SBT shell prompt.

```
Main.scala  
StackMachineCompiler.scala  
StackMachineEmulator.scala  
StackMachineTest.scala  
CompilerTest.scala
```

```
to:
```

```
/Users/srirams/Courses/shared/csci3155/private/csci3155_fall2020/project/project1/csci3155_s20_project1/submission.zip
```

Script Creates a file called submission.zip and prints out where it has been placed. Submit this zip file.

```
[success] Total time: 1 s, completed Sep 25, 2020 10:16:07 PM  
[IJ]sbt:csci3155_fall2020_project1>
```