CS260 Intro to Java & Android
01.JDK Intro

Winter 2017

Java Tutorials

- The main sources of Java documentation will be the Java Tutorials
  - http://download.oracle.com/javase/tutorial/
    - Read Trails Covering the Basics
      - Getting Started
      - Learning the Java Language
      - Essential Java Classes
      - Collections
  - http://www.tutorialspoint.com/java/index.htm
    - Read Java Basics and Java Object Oriented

Hello World

```
class HelloWorld
{
  public static void main (String[] args)
  {
    System.out.println ("Hello World");
  }
}
```

Java Development Environment

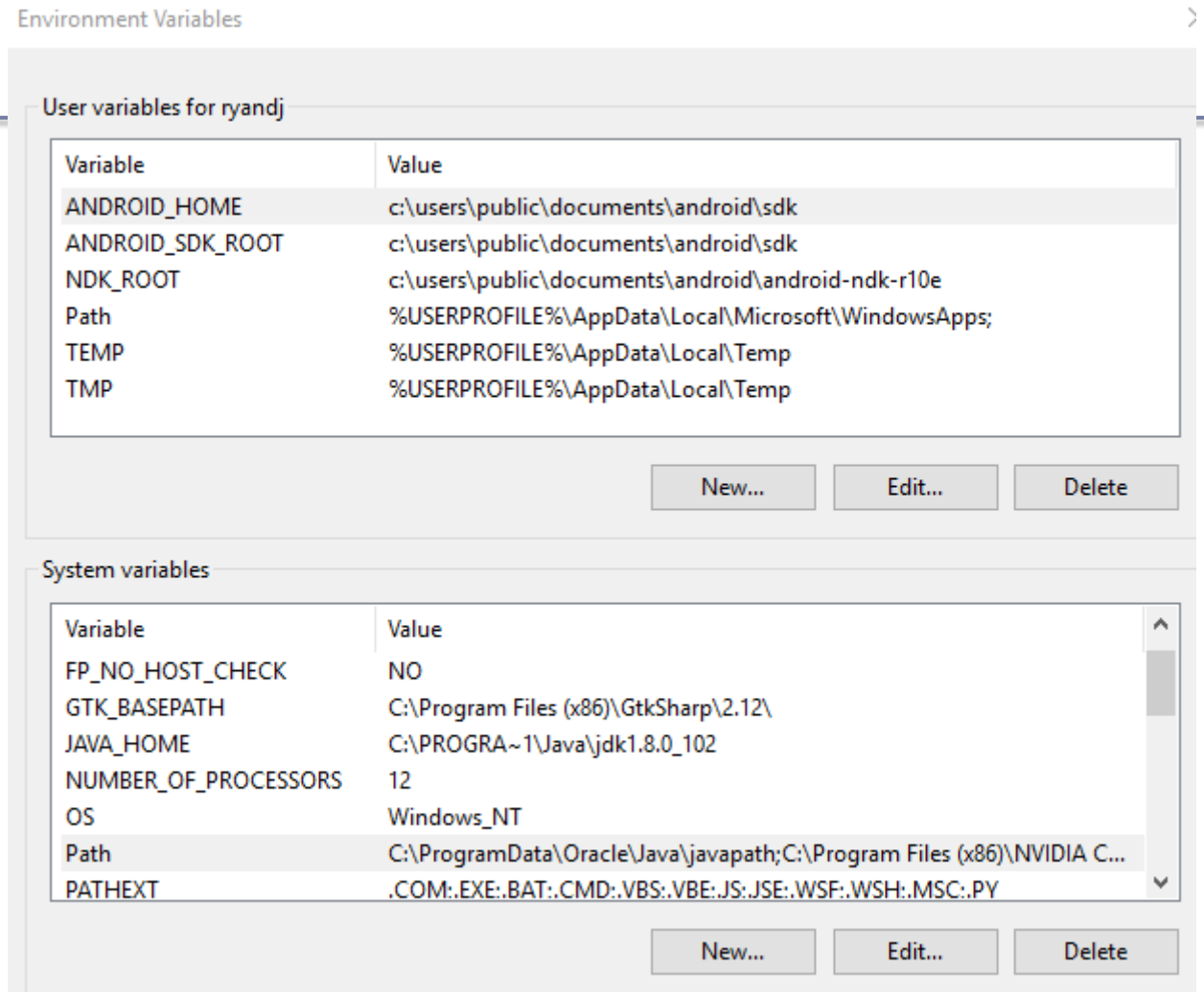
- JRE (Java Runtime Environment)
- JDK (Java Development Kit includes JRE)
- Text Editor (e.g. NotePad or Geany)
- IDE (e.g. IntelliJ IDEA, Eclipse)

- JRE & JDK can be found at http://www.oracle.com/technetwork/java/javase/downloads/index.html

Java Development Environment

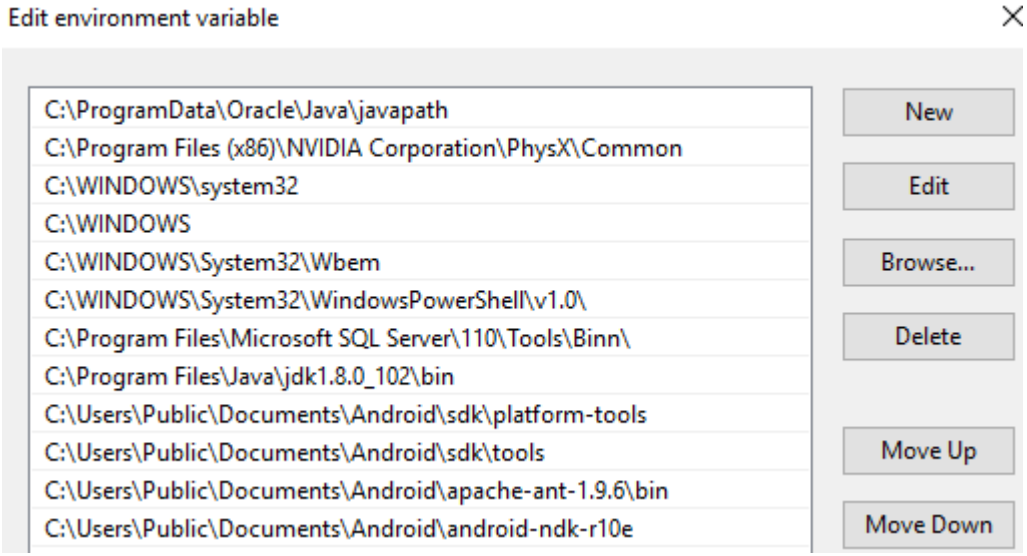
- After installing the JRE & JDK, add the path of the compiler (javac) & interpreter (java) to your PATH
- Control Panel->System & Security->Change Settings->Advanced->Environment Variables
- Also, set JAVA_HOME to the location of the JDK. In my case it's c:\Program Files\Java\jdk1.8.0_102

Environment Variables



PATH Variable

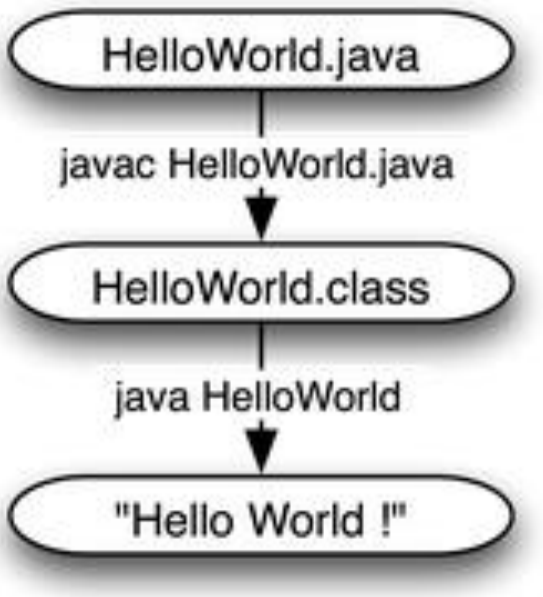
- 64-bit version is Program Files [PROGRA~1]
- 32-bit version is Program Files (x86) [PROGRA~2]



PATH Variable

- If your Environment variables are set correctly, you will see the following:

Compile & Execute HelloWorld

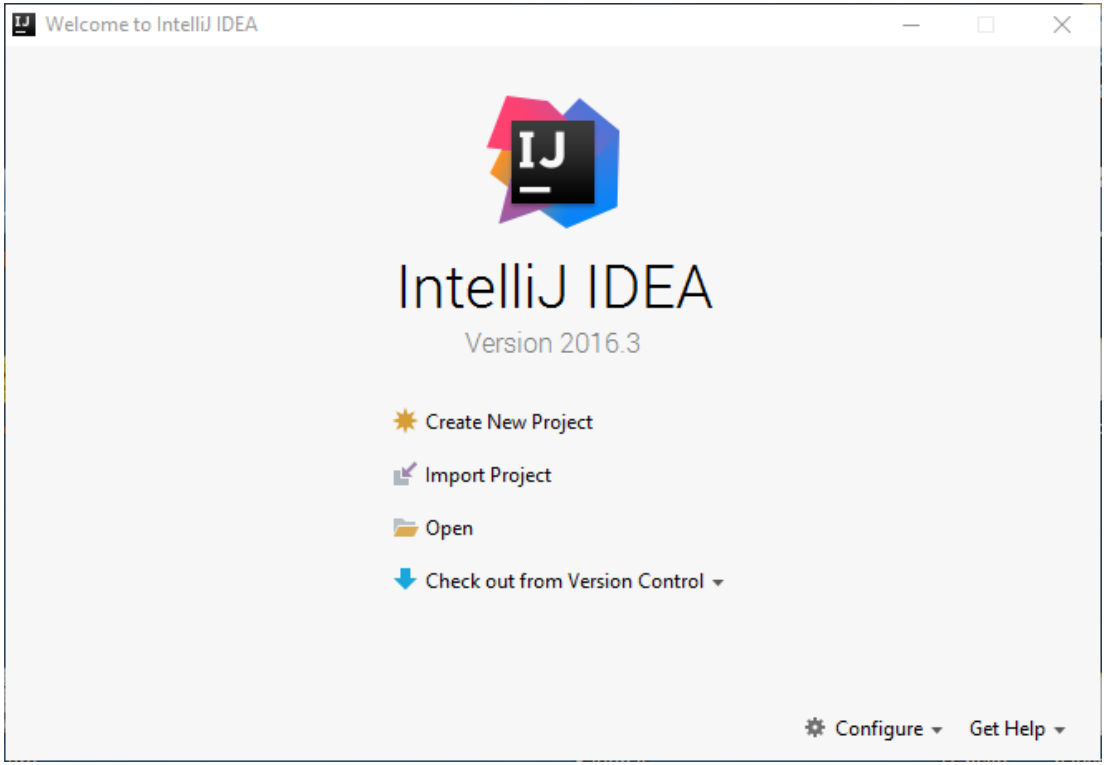


Simple Java Program

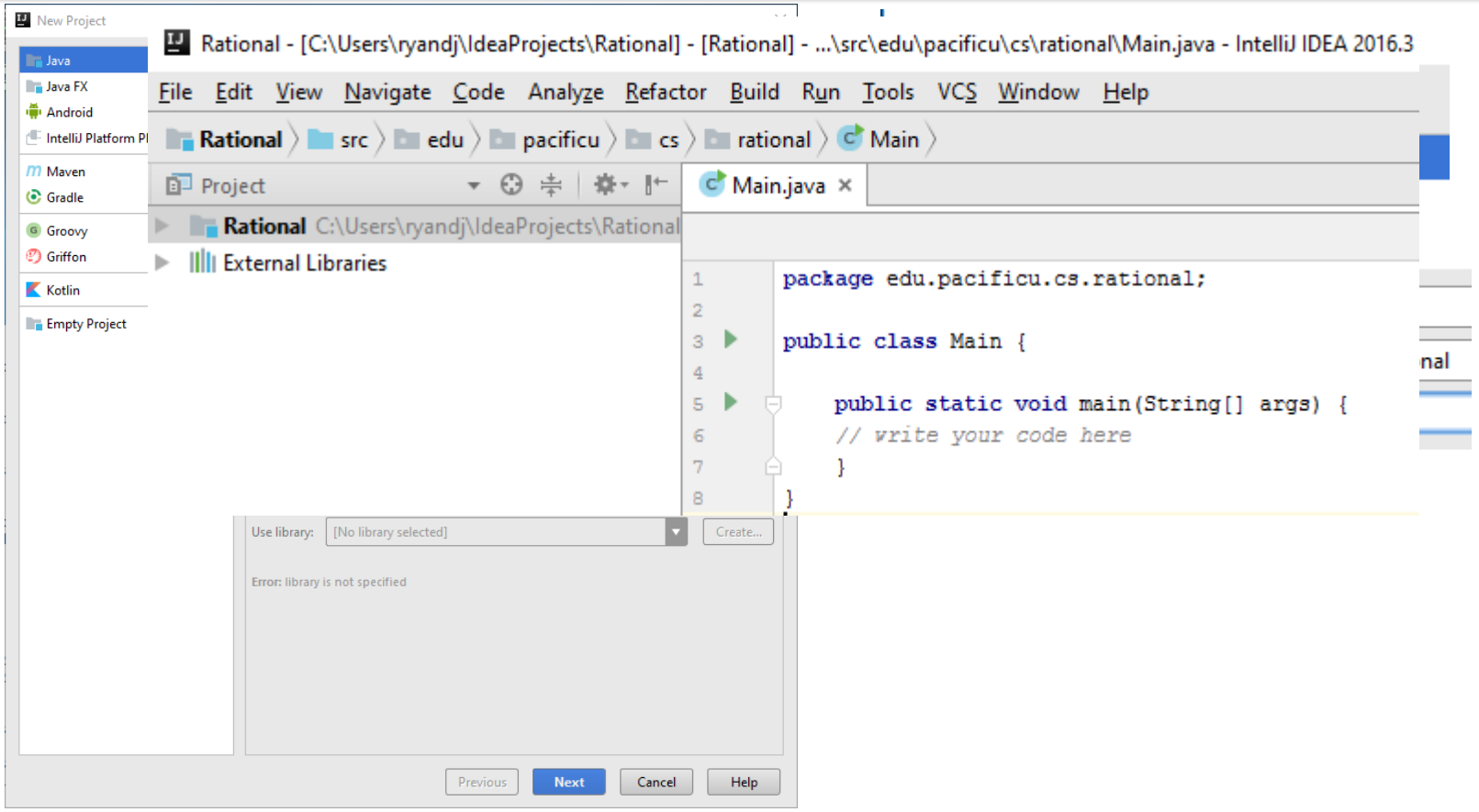
- In CS260Public on Grace is HelloWorld.java

1. Put on Desktop
2. Open cmd prompt
3. Type javac HelloWorld.java
4. Type java HelloWorld

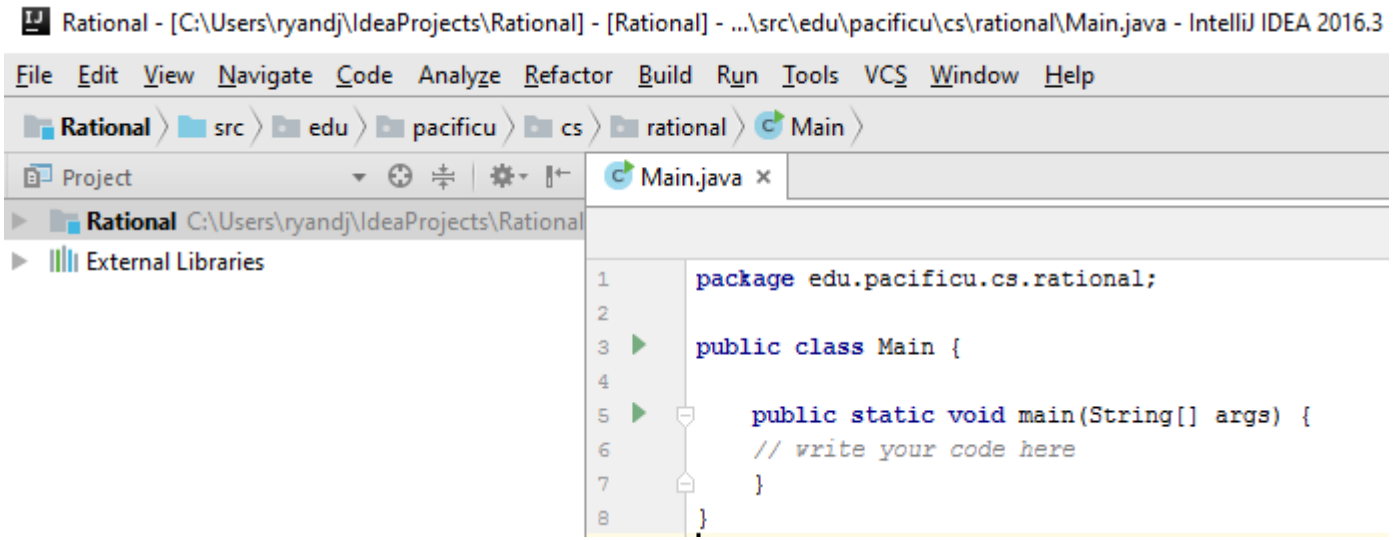
IntelliJ IDEA



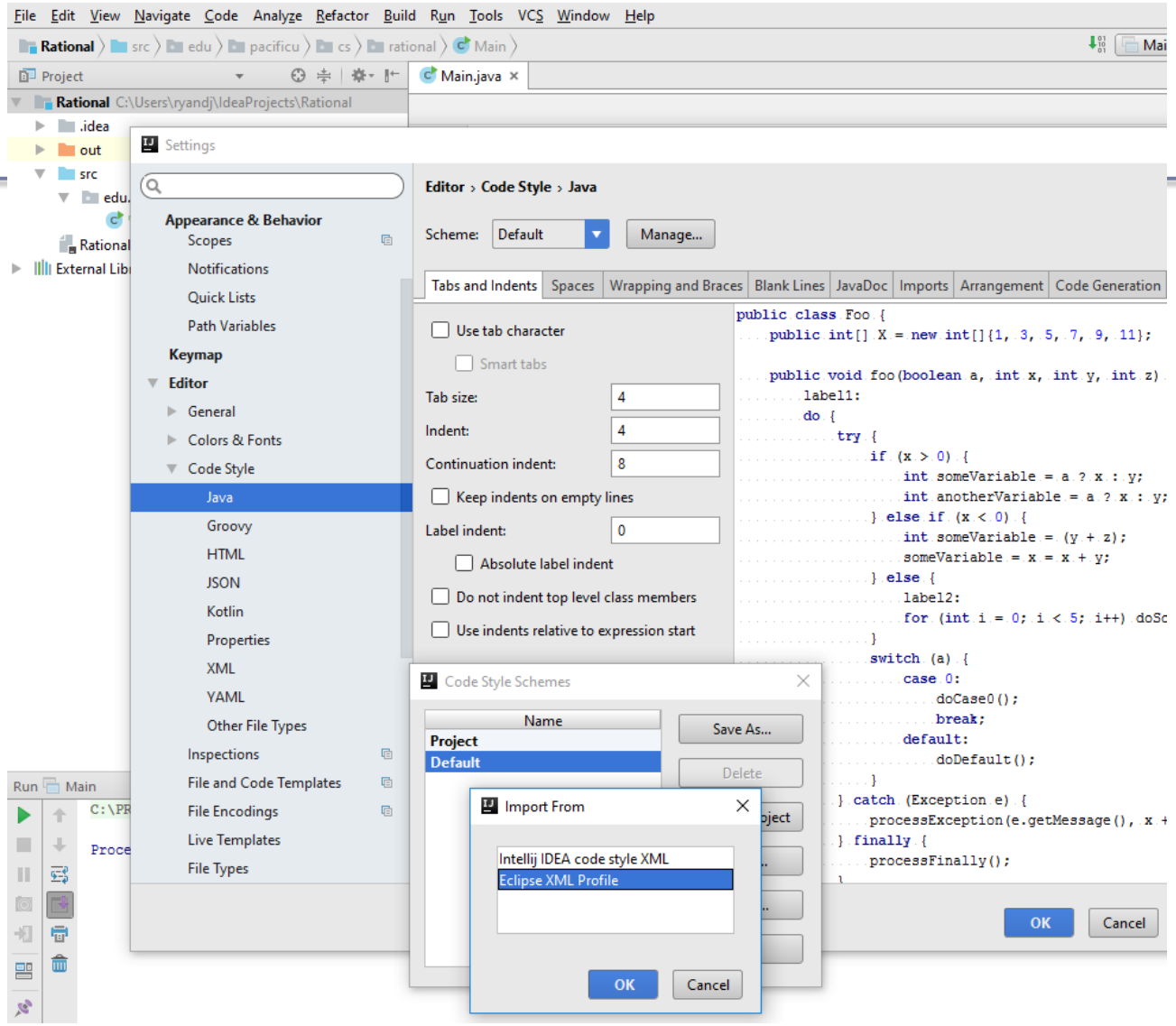
IntelliJ IDEA



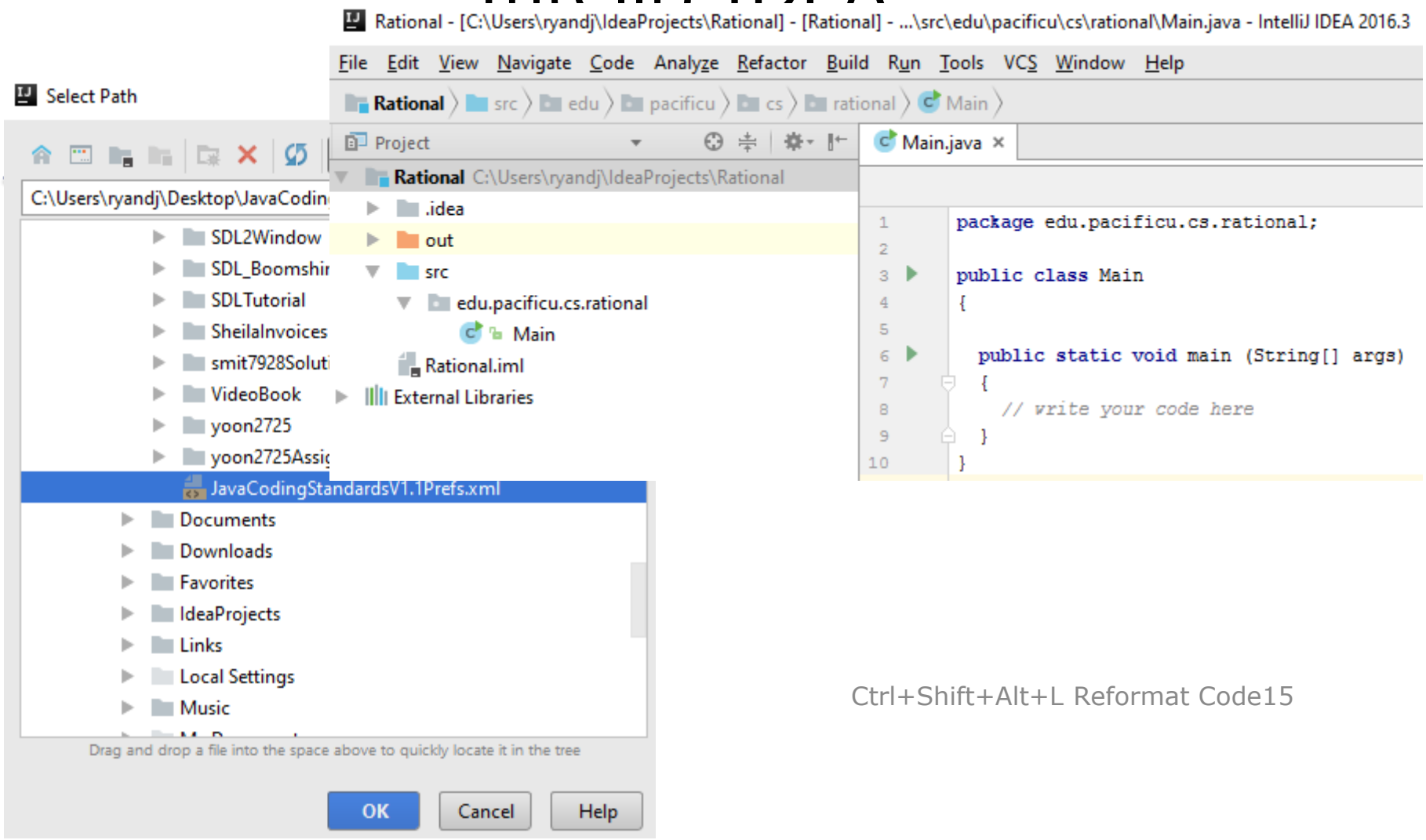
IntelliJ IDEA



IntelliJ IDEA



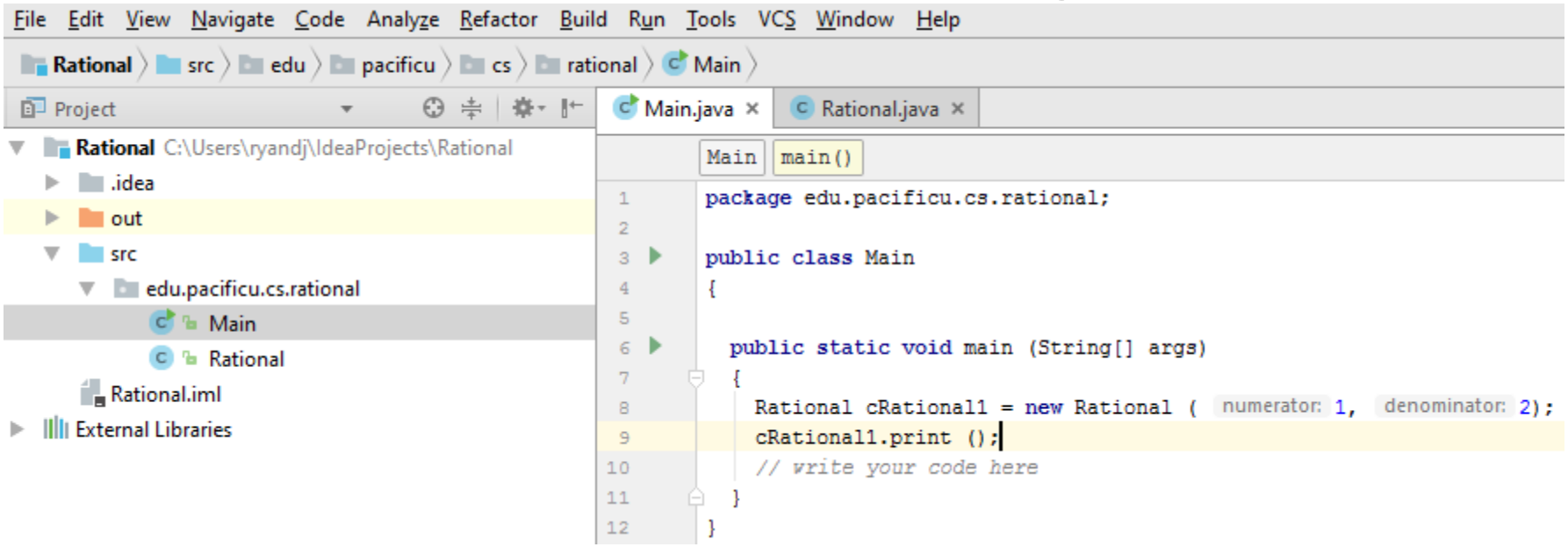
Intelli J IDEA



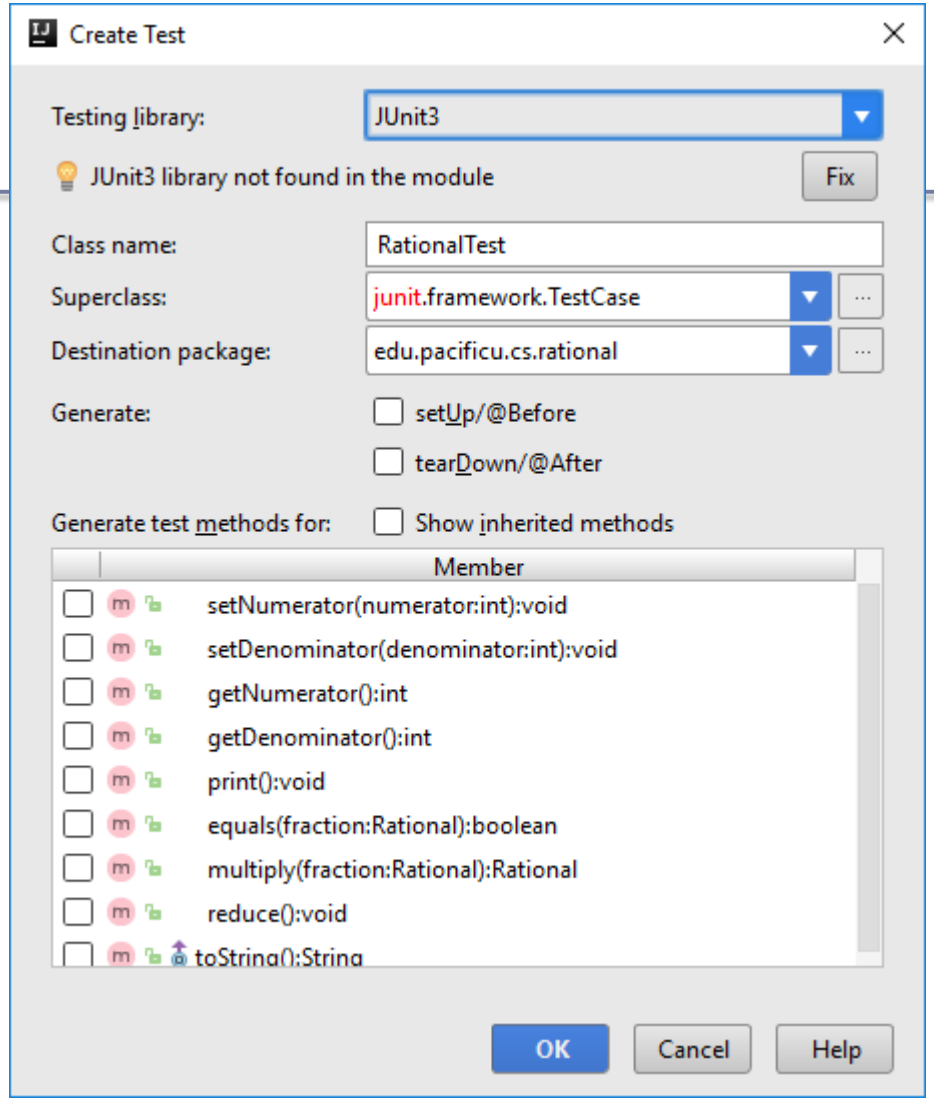
Ctrl+Shift+Alt+L Reformat Code15

IntelliJ IDEA

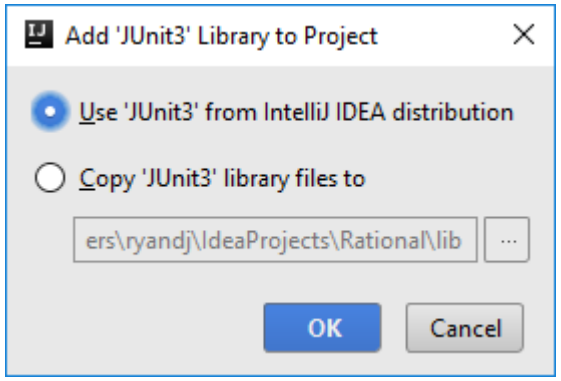
- Add a Rational.java class to the rational package
- Copy in Rational.java code from CS260-01Public
- Create a Rational object in main that represents ½
- Print out the rational number using method print



Unit Testing



Click Fix



Unit Testing

- Need to add Junit to your path

```
1  package edu.pacificu.cs.rational;
2
3  import junit.framework.TestCase;
4  import static org.junit.Assert.*;
5
6  /**
7   * Created by ryandj on 12/8/2016.
8   */
9  public class RationalTest extends TestCase
10 {
11   public void testIsEqual ()
12   {
13     Rational cR1 = new Rational ( numerator: 3,  denominator: 5);
14     assertTrue ( message: "3/5 = 3/5", cR1.equals (new Rational ( numerator: 3,  denominator: 5)));
15     assertFalse ( message: "3/5 = 3/4", cR1.equals (new Rational ( numerator: 3,  denominator: 4)));
16     assertFalse ( message: "3/5 = 4/5", cR1.equals (new Rational ( numerator: 4,  denominator: 5)));
17   }
18 }
```

- http://junit.sourceforge.net/javadoc/org/junit/Assert.html