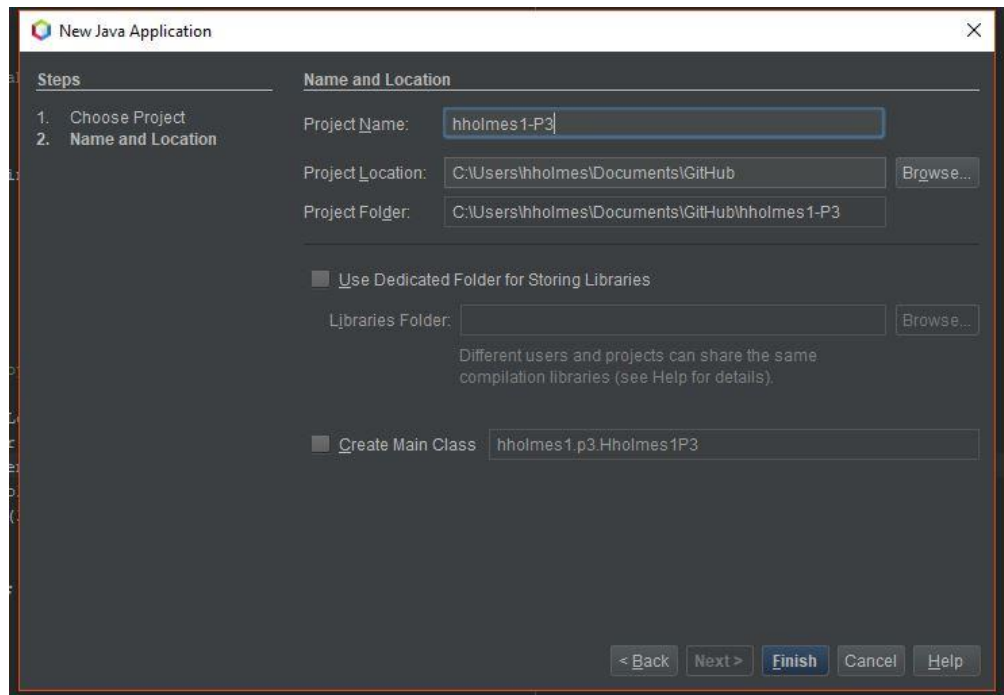
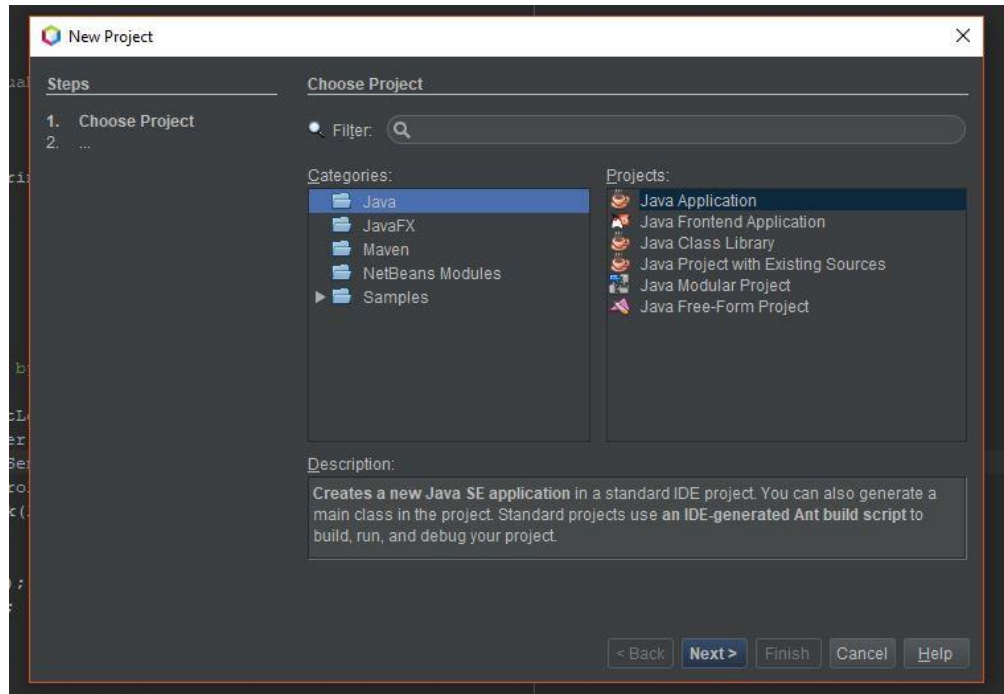
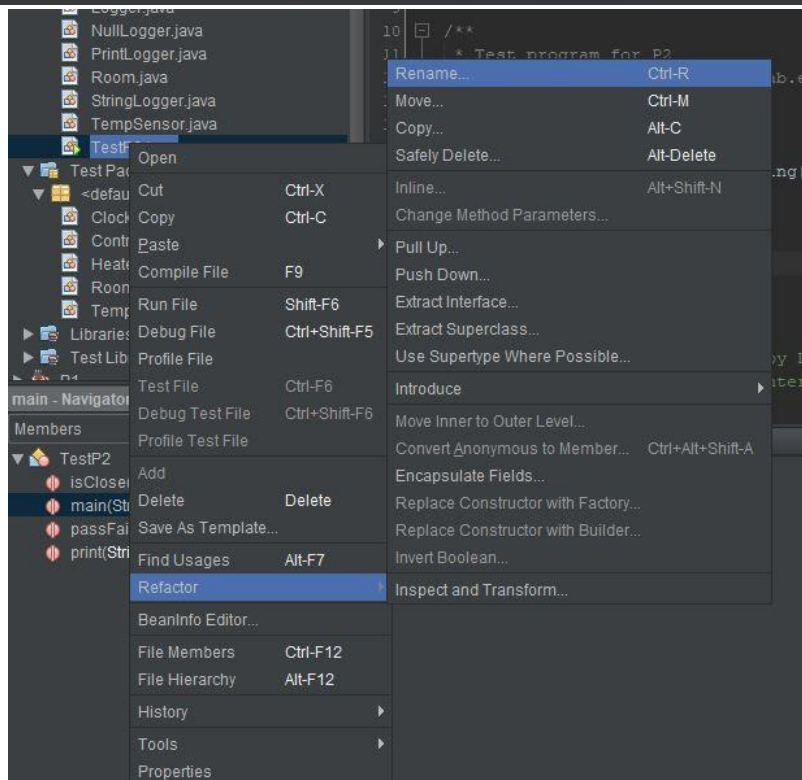
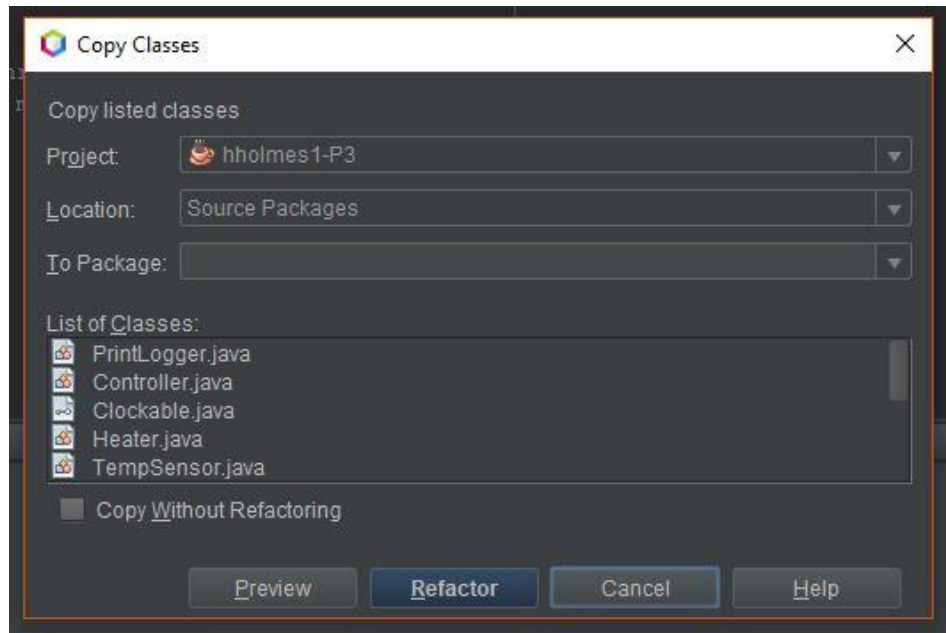


## Narrative Log hholmes1-P3 EE 333

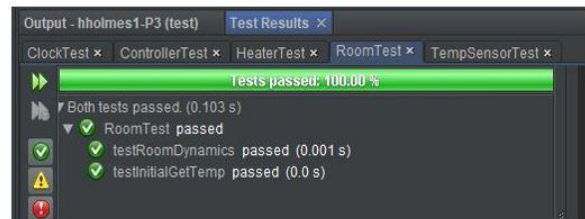
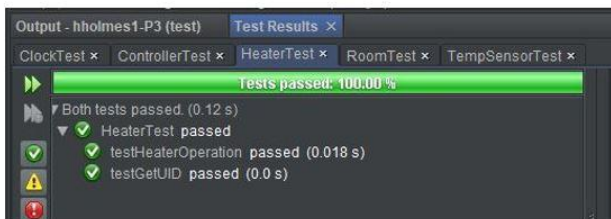
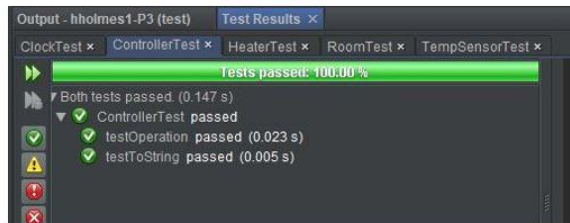
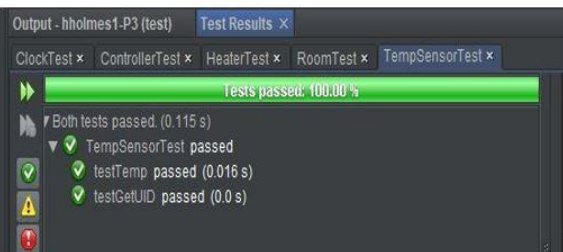
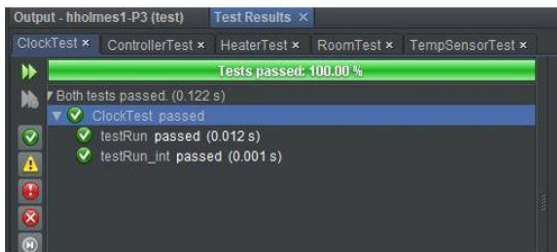
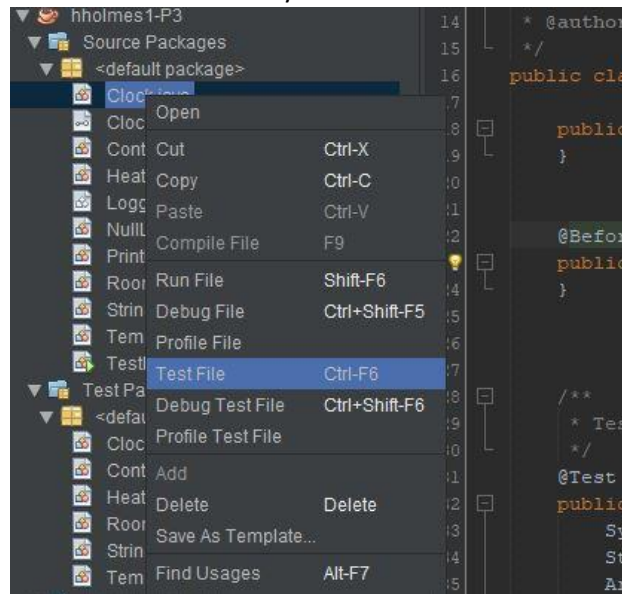
1. Made corrections to P2
2. Created hholmes1-P3 (New File Dialog)



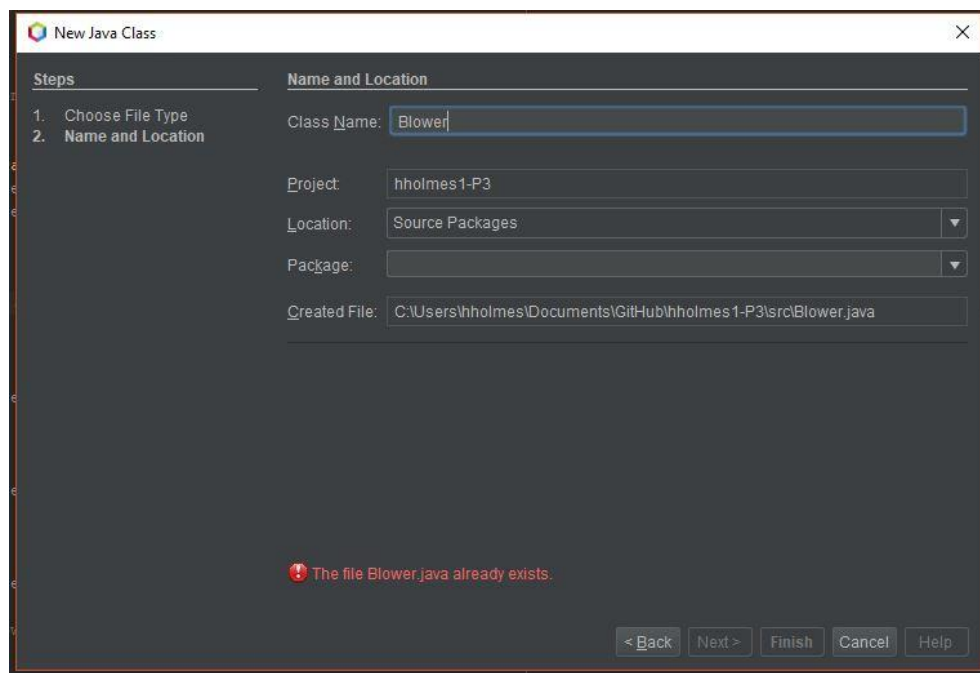
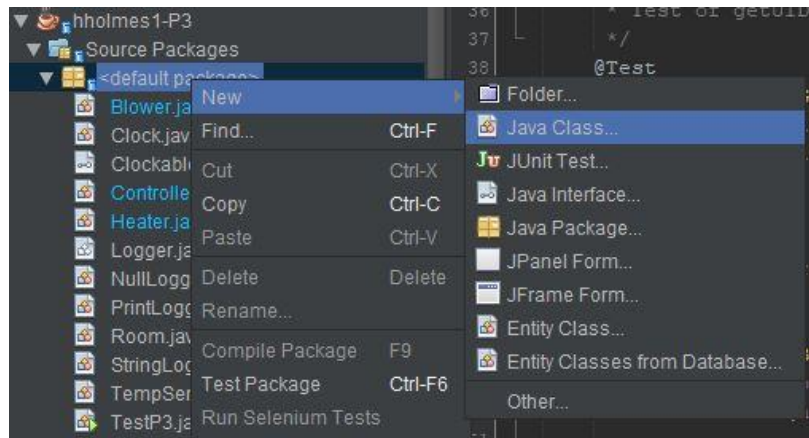
- Moved .java files from P2 to P3 Source files and Test files. Required refactoring files. Renamed TestP2 to TestP3



4. Re-ran unit tests from P2 to verify that files still work after moving to P3



5. Create Blower.java class



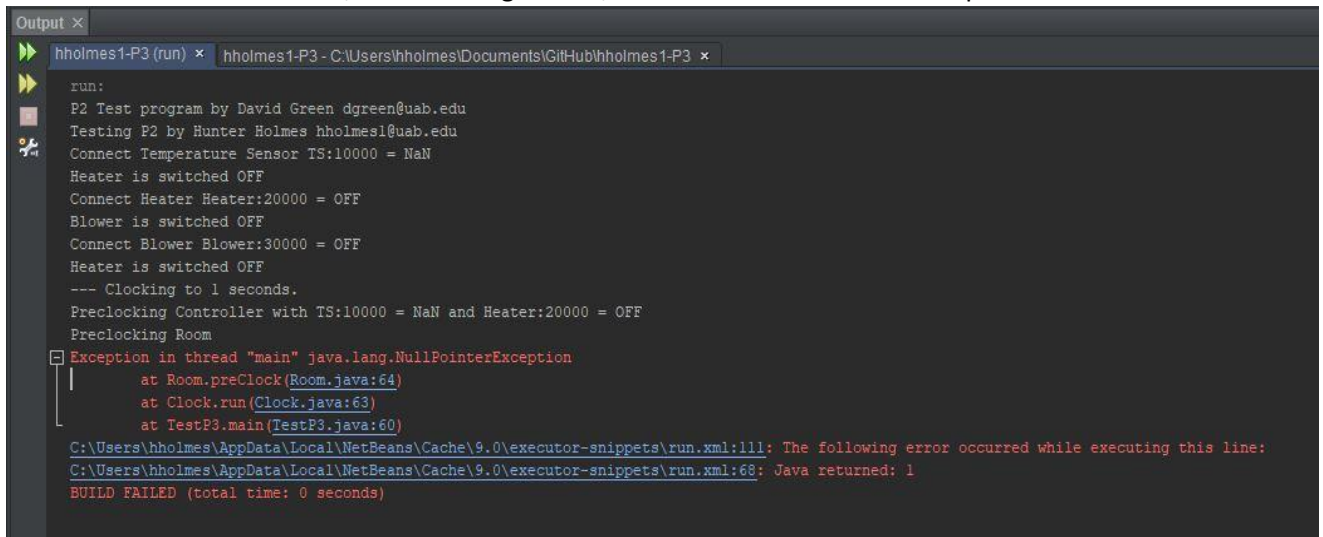
- Very similar to code for heater
  - Created an “add” method to add a heater to a blower
  - Both heater and blower states need to be set by the controller but the blower should only run if the heater is running
  - Blower outputs air at 95 degrees when heater is on
6. Created JUnit test for Blower
- Similar to heater test
  - Checks for proper UID assignment
  - Tests that blower can only be on when heater is on
  - Tests Blower’s toString as it relates to the state of the blower
7. Updated Controller
- Blower only can be on if heater is on
  - Allowed room for future conditions that could also turn the blower on

8. Updated ControllerTest.java

- Updated testToString() to look for proper Blower description
- Also updated Controller to create proper Blower description
- Added test make sure that blower status is dependent on heater status

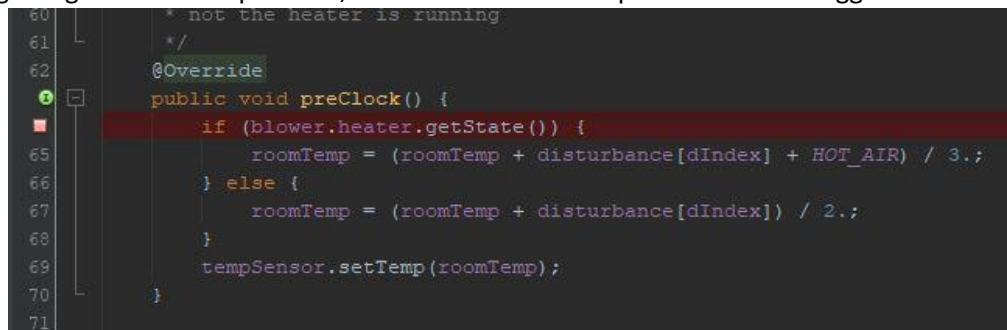
9. Updated P3 to account for connecting blower

10. Ran TestP3 with new blower/heater configuration, encountered NullPointerException



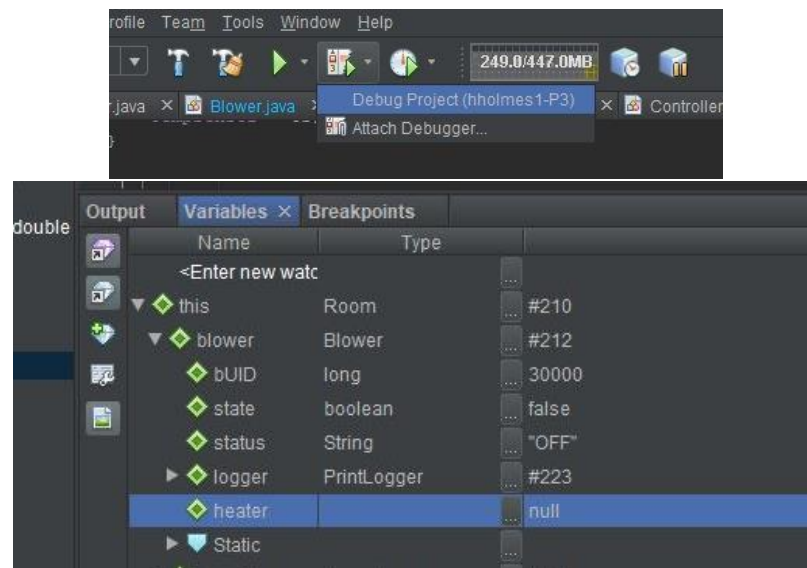
```
Output x
hholmes1-P3 (run) x hholmes1-P3 - C:\Users\hholmes\Documents\GitHub\hholmes1-P3 x
run:
P2 Test program by David Green dgreen@uab.edu
Testing P2 by Hunter Holmes hholmes1@uab.edu
Connect Temperature Sensor TS:10000 = NaN
Heater is switched OFF
Connect Heater Heater:20000 = OFF
Blower is switched OFF
Connect Blower Blower:30000 = OFF
Heater is switched OFF
--- Clocking to 1 seconds.
Preclocking Controller with TS:10000 = NaN and Heater:20000 = OFF
Preclocking Room
Exception in thread "main" java.lang.NullPointerException
    at Room.preClock(Room.java:64)
    at Clock.run(Clock.java:63)
    at TestP3.main(TestP3.java:60)
C:\Users\hholmes\AppData\Local\NetBeans\Cache\9.0\executor-snippets\run.xml:111: The following error occurred while executing this line:
C:\Users\hholmes\AppData\Local\NetBeans\Cache\9.0\executor-snippets\run.xml:68: Java returned: 1
BUILD FAILED (total time: 0 seconds)
```

- Clicking on “Room.java:64” took me to the line that could not be compiled
- Recognizing this line as a problem, I selected it as a breakpoint for the debugger



```
60  * not the heater is running
61  */
62  @Override
63  public void preClock() {
64      if (blower.heater.getState()) {
65          roomTemp = (roomTemp + disturbance[dIndex] + HOT_AIR) / 3.;
66      } else {
67          roomTemp = (roomTemp + disturbance[dIndex]) / 2.;
68      }
69      tempSensor.setTemp(roomTemp);
70  }
71
```

- Was able to see that variable “blower.heater” was null by running the debugger



- blower.heater was not initialized because I had not modified TestP3 to add a heater to the blower
- Added “b1.add(h1)” to TestP3 and resolved issue

#### 11. Added MissingComponentException.java

- Creation done by simply creating class named MissingComponentException
- Extends Exception

#### 12. Added “throws MissingComponentException” to preClock() in Clockable.java

- Also added it to preClock() implementation in Controller.java
- Added “throws MissingComponentException” to run methods in Clock.java
- Updated all Methods that call run(), run(int), and clock() to throw MissingComponentException
- Updated ControllerTest.java and ClockTest.java to throw MissingComponentException

#### 13. Added conditional logic to Controller’s preClock to pass message to MissingComponentException if a component is missing

- Displays error at compile time
- Adds error to log

#### 14. Update ControllerTest.java

- Added tests to verify MissingComponentException
- One test to verify that no exception is thrown if all components are connected
- Three tests to verify that the correct message is displayed when attempting to preClock a controller that is missing a particular component



#### 15. Updated Room.java

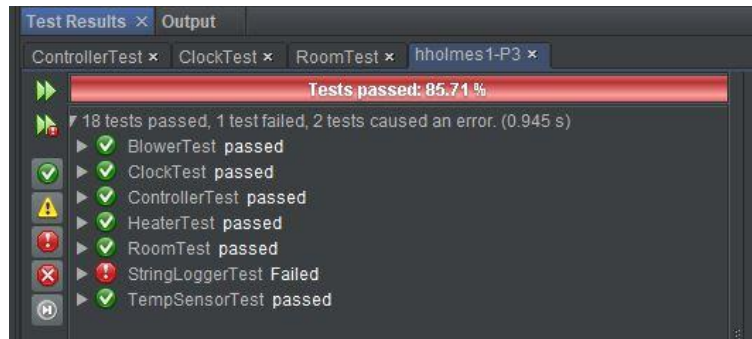
- Now a blower is added to a room instead of a heater
  - Heater is now added to the blower
- If blower is on, then Room accepts Blower's output temperature for calculation
- If blower is off, then temperature is based on current room temp and disturbance array
- Room could accept a hot or cold input. Increases flexibility

#### 16. Updated RoomTest.java

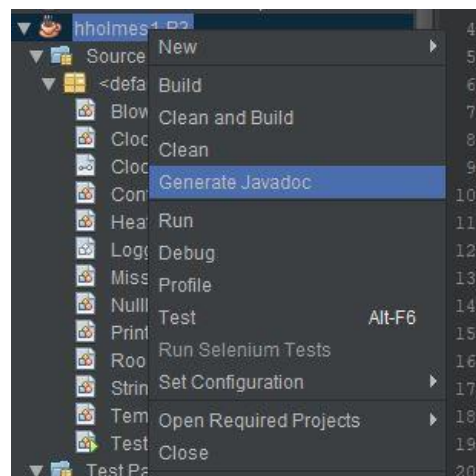
- Now tests for a situation with the blower off and the heater turning off and on
- Had to create a new array for expected temp with blower off

#### 17. Reran Unit Tests

- I learned that I can run all tests at once if I right click on the project and click "test"
- StringLoggerTest failed as it is not complete at this time
- All other tests that have been created and updated for P3 passed



#### 18. Generated JavaDoc for hholmes-P3



- JavaDoc generation tool revealed various errors including bad characters, non-existent parameters, and parameters that were not denoted with a @param
- Since the error messages indicated the lines I was able to fix the errors and some warnings

## 19. Successfully built Javadoc and viewed the html document in web browser

file:///C:/Users/hholmes/Documents/GitHub/hholmes1-P3/dist/javadoc/index.html?Blower.html

Apps Mail - hholmes1@ua UAB BlazerNET Canvas Page

**All Classes**

- Blower
- Clock
- Clockable
- Controller
- Heater
- Logger
- MissingComponentException
- NullLogger
- PrintLogger
- Room
- StringLogger
- TempSensor
- TestP3

PACKAGE **CLASS** USE TREE DEPRECATED INDEX HELP

PREV CLASS NEXT CLASS FRAMES NO FRAMES SEARCH:

SUMMARY: NESTED | FIELD | CONSTR | METHOD DETAIL: FIELD | CONSTR | METHOD

### Class Blower

java.lang.Object  
Blower

public class **Blower**  
extends java.lang.Object

Model a blower to move hot air from the heater to the room

#### Field Summary

**Fields**

Modifier and Type	Field	Description
Heater	heater	
Logger	logger	
double	outputTemp	
java.lang.String	status	

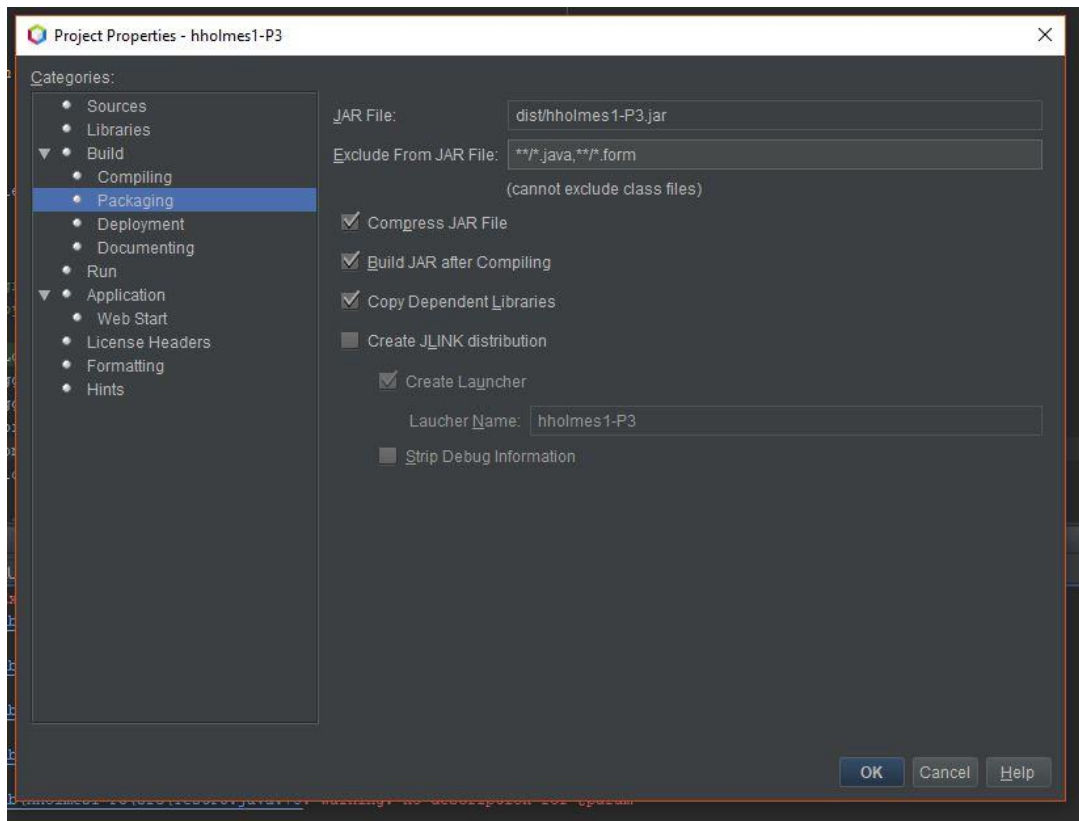
#### Constructor Summary

## 20. Ran TestP3 to ensure all tests were still passed



## 21. Built .jar file

- Compiling the project by default creates a jar file for a java project
- To make sure this .jar file is being created I opened the project properties and select Packaging



- I ensured that “Build JAR after Compiling” was checked
- Now .jar file is created for project upon compiling

## 22. Ran hholmes1-P3.jar from command prompt

- Change directories to directory with .jar file
- Typed “java -jar hholmes1-P3.jar >hholmes1-P3-DemoRun”
- “>hholmes1-P3-DemoRun” is used to direct the output stream to a .txt file for convenience

