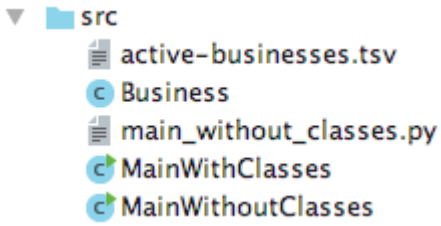
2016-10-17 Lab

The goal of this lab is to give you some practice with Java and with object-oriented programming. This is a new lab for COMP 131, so any feedback on the instructions, difficulty, timing, etc. would be appreciated.

The City of LA has a data portal, #DataLA, where people can get data about the city. One such dataset is the Listing of Active Businesses, which contains some ~500,000 businesses in the greater LA area. I have downloaded the raw data and pre-processed it, filtering out any businesses without a precise GPS location, then removing some irrelevant columns. (This was done with `preprocess.py`, which you can look at if interested.) The processed data is in `active-businesses.tsv`. (A `.tsv` file is a Tab-Separated Values file, like a `.csv` Comma-Separated Values file, except with tabs.) Using this dataset, we are going to print out all restaurants within a 1 mile radius of Oxy.

To begin, create a new project in IntelliJ for this lab. Download `active-businesses.tsv`, `main_without_classes.py`, `Business.java`, `MainWithoutClasses.java`, and `MainWithClasses.java`, and put them all in the `src` folder of your project. The project panel should look something like this:



Part 1: Translating From Python to Java

The first part of this lab is to translate the Python program into Java. The program prints out the names of all restaurants within a 1 mile radius of Oxy. Running it gives output (excerpted):

```
SICHA SIAM RESTAURANT
STARBUCKS COFFEE #13286
TROY DRIVE IN #8
[...]
THE YORK
A BLOC
THAI EAGLE ROX
```

I have deliberately structured the Java file `MainWithoutClasses.java` to be similar to the Python file `main_without_classes.py`. Make sure you understand the functions in the Python code before starting.

Part 2: Using Classes in Java

The second part of this lab is to convert your Java code to use the `Business` class. The class is in `Business.java`, which you don't have to change. Instead, you will need to complete the functions in `MainWithClasses.java`. The main differences between `MainWithoutClasses.java` and `MainWithClasses.java` are the argument and return types - whereas you were using an `ArrayList<String>` to represent each business before, now you will be using an instance of the `Business` class.

Submission

When you are done, submit your code to the autograder, and fill out the peer evaluation.