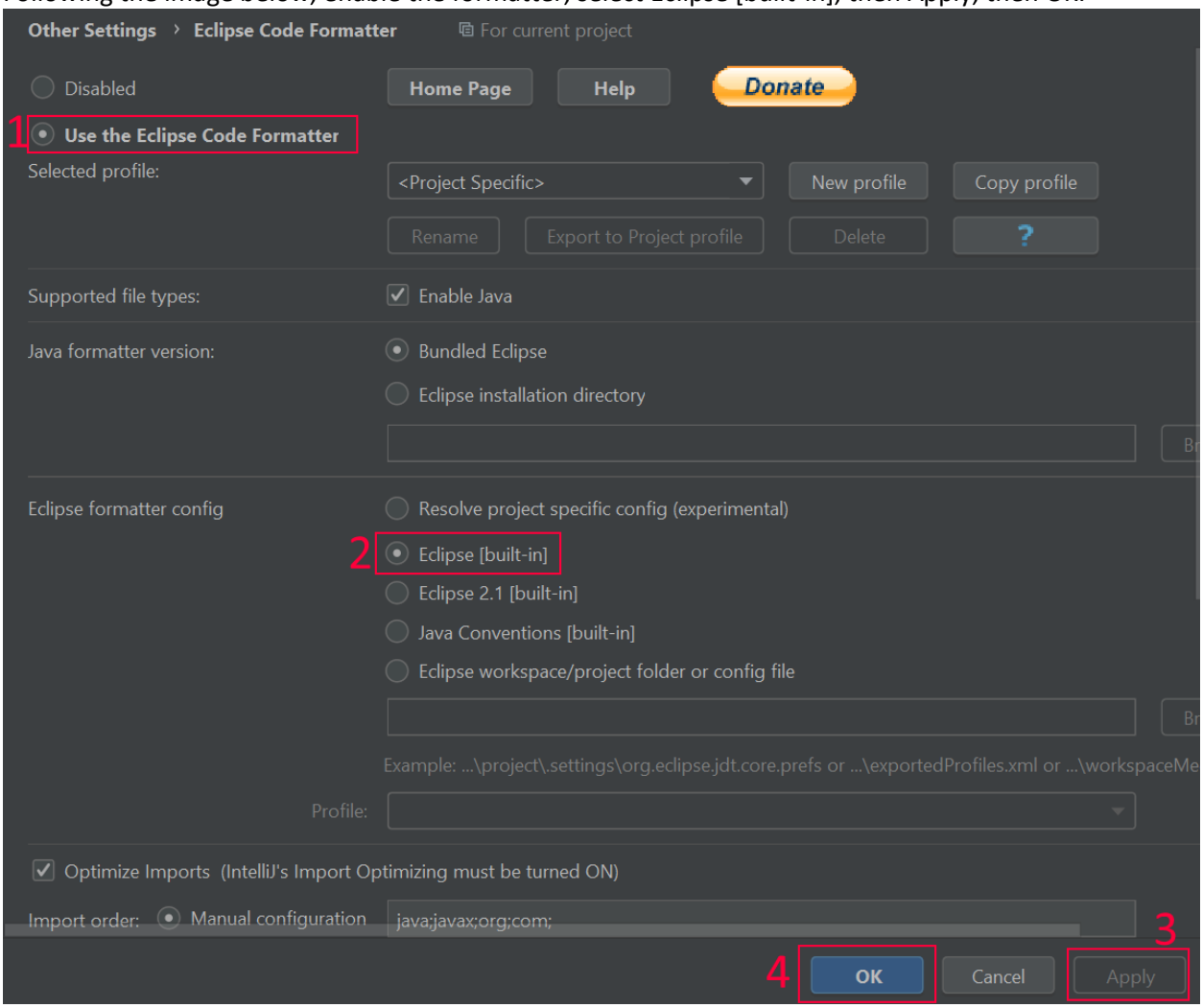
Key Word In Context

WARNING: This assignment is a test of following directions.

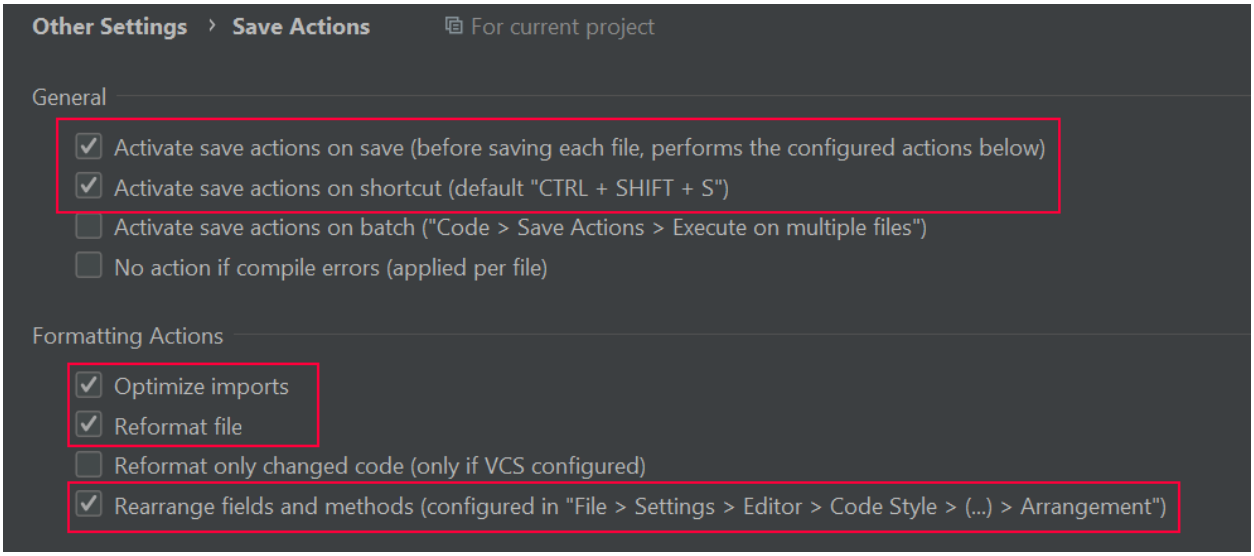
This setup is required:

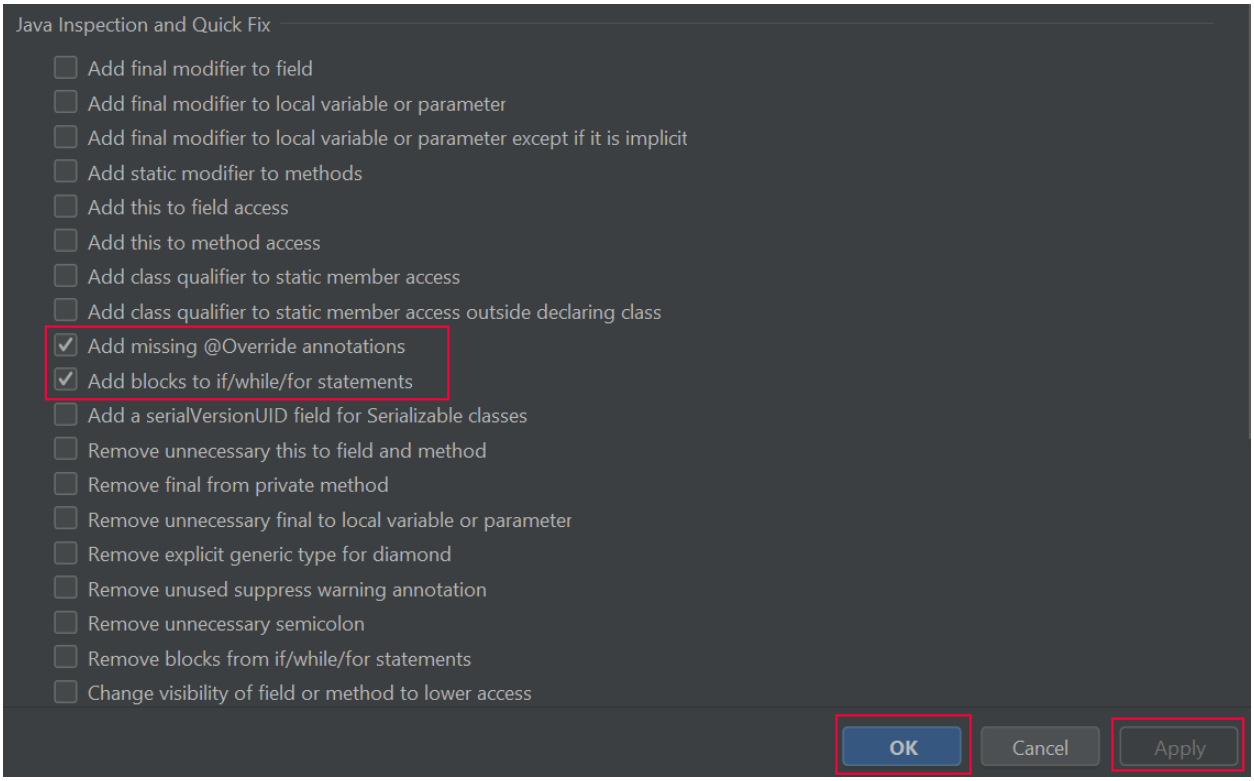
Install IntelliJ **Ultimate** Edition. It comes with 30 day free trial.
License is free either as part of Github's Student pack or Jetbrains student license:
https://education.github.com/pack
https://www.jetbrains.com/community/education/#students

Install the most recent Java JDK/JRE.
Create a new Java Project. File -> New -> Java (left hand nav) -> Next -> Next -> Name it -> Finish
Install these 2 plugins:
https://plugins.jetbrains.com/plugin/7642-save-actions/
https://plugins.jetbrains.com/plugin/6546-eclipse-code-formatter/
Restart IntelliJ. Go to File -> Settings. Under "Other Settings" click on "Eclipse Code Formatter"
Following the image below, enable the formatter, select Eclipse [built-in], then Apply, then OK.



Under “Other Settings” click on “Save Actions”:





Select everything as it is above, then click Apply, then OK.

You will have to do all of this for every IntelliJ Project you create. ^

Guidelines:

Follow the tests! (See instructions below)

MasterControl:

Responsible for combining all the other components
Contains a main method, but the main method should just create a new instance of MasterControl and call masterControl.start(); 2 lines max in the main method.
Method: `public void start()` + `public static void main(String[] args)`

Input:

Read input file named "kwic.txt" in the default location.
Assume the file will have no punctuation or anything else that requires extra considerations.
`public List<String> read()`

CircularShifter:

Takes a list of Strings and shifts them all, returning the entire list of lines.
Method: `public List<String> shiftLines(List<String> lines) {`

Alphabetizer:

Takes a list of Strings and alphabetizes them all.
You must use Java's Treeset to do the alphabetizing.
Ignore casing when alphabetizing.
Educator notes:

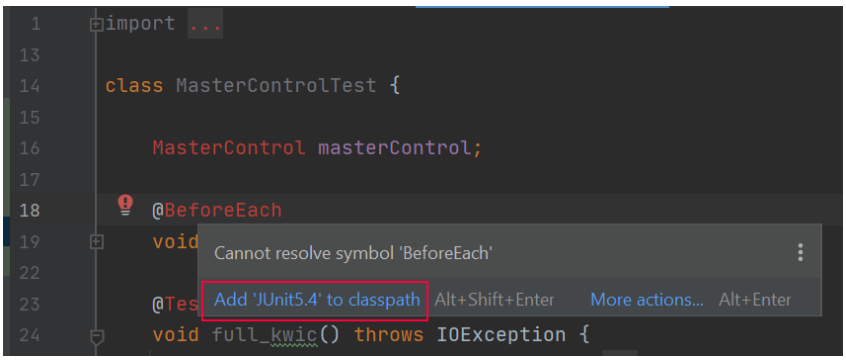
This won't be ideal. Add everything in the list to a TreeSet, then convert the Set back to a List to return. The reason I am requiring using Treeset is for you to have 1 less thing to learn for the next assignment, where TreeSet will actually make more sense to use.

Method: `public List<String> sort(List<String> lines)`

Output:

Takes a list of Strings and outputs them to a file named "kwic_output.txt" in the default location
Method: `public void write(List<String> lines)`

Included you will find a set of JUnit test cases. You can bring these into your IntelliJ project and run them as a guideline to see if you're on the right track:
Click on "Project" on the left hand nav to open the Project view.
Right click on your project -> New -> Directory -> "test".
Right click on the "test" folder -> Mark Directory As -> Test Sources Root
Copy the files into this new source folder.
Open MasterControlTest. Hover over the @BeforeEach, click to add JUnit 5 to the classpath.
DO NOT ADD JUNIT 4. You must use JUnit 5.



You can run the tests by right clicking on a file -> Run "MasterControlTest" or CTRL+SHIFT+F10
You can run all of the tests at once by right clicking on the project -> Run "All Tests"
Throughout the course, I will be using test cases to grade the "functional" part of your grade for assignments. Running them yourself will avoid surprises when you submit your work.

Caveat: These aren't the most beautiful test cases, but such is the sacrifice made for efficient grading.

Use the default package for all files. Please, please, please, no packages for your Java files. Yes, I know, it is bad practice. But again, sacrifices must be made for efficient grading.

Before you submit

You think you have completed the assignment? Not so fast!

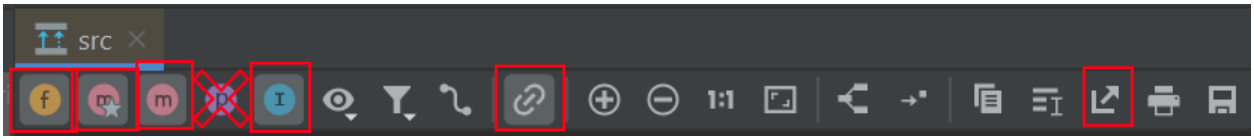
Follow these steps:

1. Delete the tests from your test source folder
2. Download the tests fresh from BB Learn
3. Copy the fresh tests into your test source folder
4. If anything is red, **stop**. Do **not ever** change the tests. Fix your **code** to make the tests compile. Proceed to step 5 when there are no compilation errors.
5. Run **all of the tests at once** by righting click on the **project** and running as JUnit tests.
6. If any of them are not passing (no green bar), you have not completed the assignment.

If there are any compilation errors, I reserve the right to assign a 0 grade and await a late resubmission.
If all tests are not passing, I reserve the right to assign a 0 grade and await a late resubmission.

UML Generation

After you are done, you are required to generate UML for your submission.
Right click on src -> Diagrams -> Show Diagram… -> Java Classes
Click on each of the 5 buttons at the top-left of the screen:



Make sure NOT to click on the Properties button (X'd out above).
Then click on the top-right export image button to create the diagram image file.

Submission

Submit the UML **image file** and all Java files in a zip with **no folder structure**.
Do not submit any of the test files.
The zip file name should include the **Assignment Prefix (A1, A2, etc), your email ID** and **full name** in the file name, exactly as such: A1-bv49-boris-valerstein.zip
When you open your zip file, you should see Java files, not a folder (unless you are on a Mac, see attached instructions).

If you have any submission comments, put them into the submission box in BB Learn when submitting.

If your zip file does not follow these conventions, I reserve the right to assign a 0 grade and await a late resubmission.

Grading:
Compiling code and passing all tests is the bare minimum to receive a grade, far from a guarantee to get 100%.

Checklist:

- Components are designed correctly
- Small methods
- No comments, in favor of more methods with expressive names
- Quality variable names
- Following the provided naming conventions (Java industry standard)
- I should be able to read your code like a book, not struggle
- Default package is used by all your classes
- Zip file name is correct
- Zip contains no directory structure
- Zip contains all code + UML, but no test files
- Make sure your code is formatted correctly!! (All of the settings above)

This course is not about me seeing if you can code. It is about encouraging you to code better.