The purpose of this week's lab is to complete a basic Java program while working remotely. This should give everyone a chance to get used to the new system that we will be using. There will no doubt be changes to how we do things as the semester progresses.

Our preferred way of providing help with labs is via Microsoft Teams. This can be freely downloaded on smartphones, tablets, laptops and desktops. You should all already have an account that you can use linked to your student.otago.ac.nz email address. It can also be run with some limitations directly in a web browser.

In Microsoft Teams go to the *COSC241 Labs* team and look at the *Lab 6* channel. During lab times there will be demonstrators available as usual to answer your questions. In order to get the best help please ask questions which clearly describe the problem you are having.

For example, a good question might be

```
When I run the command "java LongWords" I get
Error: Could not find or load main class LongWords
```

Whereas a bad question might be

```
My program doesn't work.  Can you help me?
```

In any case, once you have asked a question one of the demonstrators will acknowledge it by giving it a thumbs up. This let's you know that they will respond to you and also lets the other demonstrators know that they don't need to. If it takes a while for a demonstrator to reply it just means that they are busy dealing with other students.

In the example above they might respond with

```
The LongWords class should be in the package week06.
This means that you run it like this:

   java week06.LongWords
or
   java week06/LongWords

It also means that you should run it from outside
the week06 directory that contains the class file.
```

Sometimes the problem will be hard to solve just sending messages back and forth. In that case a video chat can be initiated by the demonstrator so you can talk face to face. You can also share your screen with the demonstrator from within the video chat. Let the demonstrator know if you are using a machine running Linux as they will need to use Zoom for the video chat instead of the default video chat built into Teams.

A few more things to note.

- When you are messaging the demonstrator please reply on the same thread i.e. don't start a new conversation each time.
- You can look at previous questions which have asked to see if your question has already been asked (there is a search bar).
- You can answer other student's questions if you want to (just like you might talk to a classmate during a lab). This can be beneficial for both of you and might also increase your prospects of becoming a demonstrator in the future if you are good at helping. If a student is helping another student please don't give it a thumbs up unless the question is answered and you no longer have an issue.

What you need to do

The program you must write for this lab needs to perform the following tasks.

1. Read from *stdin* (System.in), up to 100 whitespace separated words, and store them in a data structure of your choice.
2. Calculate the average word length.
3. Print each word which is greater than the average length, in the reverse order that they were read in.
4. Print `"Average: "` followed the average word length to *two* decimal places.
5. If no words are entered then there should be no output at all.

You should be able to compile the code using the command:

```
javac -d . -Xlint LongWords.java
```

Given a file sample-input.txt with contents:

```
The quick brown fox
jumps over the
lazy dog
```

Running it with the command `java week06.LongWords < sample-input.txt` should produce output:

```
lazy
over
jumps
brown
quick
Average: 3.89
```

Marking

Check that your program compiles and runs on `hextreme.otago.ac.nz` and then use the command *241-check* to make sure it passes all of our tests. If it does then you can submit it using *241-submit* as usual.

If you finish the lab early you are encourged to start working on Lab 7, which is the Linked Tableau lab that was formerly the week 5 lab.