Lesson 58: Lipograms Lab (W19D4)
Balboa High School

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Do Now

- Read Litvin §8.8, the required reading for §8.1 of PS #10, here

- Prepare Eclipse per PS #10, §8.2

- Read PS #10, §8.3

Aim

Students will work on the `Lipograms Lab`.

Getting Started

- You need to create the `LipogramAnalyzer` class with the constructor and two methods on Litvin p225.

- All methods need access to a <u>field</u> that will store the text to be worked on.

- Put a `main()` in this class so you can test each part as you're working on it.

Two Approaches to `allWordsWith()`

Litvin's Way

Have a `private` helper method in the class that you can send a position. Have the method return the word at that position.

Ex: If the stored `String` is `"apples are good."`,

```
getWordAt(4) returns apples
getWordAt(7) returns are
getWordAt(9) returns are
```

My Way (easier?)

Have a `private` helper that always returns the first word from the `String` it is sent. So if you repeatedly send it substrings of the original `String`, asking the helper for the first word every time, you have a way to get each word out, one at a time. *Then* you can decide whether the word has the character in it. (See BYOB demo @ end of slides.)

see proceeding slides for ideas →

- What is the difference between `charAt()` and `indexOf()`?

Things to Consider

- What is the difference between `charAt()` and `indexOf()`?

- When using `indexOf()`, what is returned when the target is not found? For example,

    ```
    "Happy Holidays".indexOf("q")
    ```

Things to Consider

- How might you change all occurences of a specific character in a `String`? For example, how could you change all occurences of 'e' to '%' in

    Hello there, I'm pleased to meet you

    to yield

    H%llo th%r%, I'm pl%as%d to m%%t you?

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  `H%llo th%r%, I'm pl%as%d to m%%t you?`

  - One approach is to iterate through each character, adding it to a
    return string — or instead adding a '%' if it's an 'e'.

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  - One approach is to iterate through each character, adding it to a return string — or instead adding a '%' if it's an 'e'.

  - There's also the `String` `replace()` method.

Things to Consider

- Potentially useful methods — check the online APIs for usage details

    - `Character.isLetterOrDigit()`

    - `Character.isWhitespace()`

- Things you don't have to worry about

    - punctuation may be included with words, though one of the methods above will allow you to ignore commas, semicolons, etc.

    - if you're filtering out 'e', you don't have to filter out 'E' as well, though `String.compareToIgnoreCase()` or `Character` case-related methods would allow you to replace both upper and lower cases of a given letter

LipogramAnalyzer via Snap!

- This Snap! demo roughly approximates the `allWordsWith()` & `getFirstWord()` approach to the Lipogram lab

- Run the demo:
    - save this XML file to `/tmp`
    - start Snap! in your browser: `http://snap.berkeley.edu/run`
    - import the XML file: `File→Import...`

Make sure you've made good progress on PS #10, §§1-9, inclusive.