Now I am going to familiarize you with a Chrome extension. Feel free to interrupt me if anything is unclear.

This Chrome extension is called ExampleStack. It is designed to guide software developers to identify and explore adaptation opportunities when reusing online code examples in Q&A forums in Stack Overflow.

To demonstrate ExampleStack, let's look at [this SO post](https://stackoverflow.com/questions/37273498/add-lat-and-long-to-arraylist/37273871#37273871). This post contains a code example that illustrates how to read a location asset file in an Android application. Let's suppose I am an Android developer and want to implement a similar function in my own Android application. I wonder what changes I should make to reuse this code example to fit my own program. ExampleStack can help this process by detecting similar code in GitHub and showing what potential adaptations other GitHub developers have done.

*Experimenter: click on “the ExampleStack icon” in the extension toolbar of the Chrome extension.*

The highlighted code snippet in the SO post is detected to have similar code in GitHub.

*Experimenter: click on the highlighted code in the post to display similar GitHub code fragments.*

Five GitHub code fragments that are similar to the highlighted SO code snippet are listed on the right side of the browser. We also call such similar GitHub code fragments as **clones** of the SO code example.

Each GitHub clone is highlighted with its differences from the original SO code example. We can also find a link to its original GitHub file, the number of watches, stars, and folks of the GitHub repository. These metrics are often used as indicators of the quality of the GitHub repository.

*Experimenter: click on any GitHub clone.*

If a user clicks on a GitHub clone of interest, the original SO code example is also highlighted with the changed parts with respect to the GitHub clone the user just clicked.

On top of the GitHub clones, there is a code template that summarizes the changed parts of the SO code example compared to all GitHub clones.

*Experimenter: click any dashed box in the code template.*

If you click a box, you can see all code options that you can fill into the box, which are derived from the SO example and its GitHub clones. Each code option is annotated with its frequency. For example ... (give an example)

ExampleStack uses different colors to distinguish code options with different adaptation types. For example ... (give another example)

*Experimenter: click a code option of interest.*

A user can click on a desired code option to fill in the template. ExampleStack then automatically fills in other boxes based on the co-occurrence of the other code options with the selected code. As an example, if you click the "is" option in the variable name box of the InputStream object, several other boxes that reference the same variable are automatically filled with the same variable name, is.

Note that the list of GitHub clones are also filtered based on the user selection. So you can also view this interactive code template as a dynamic filter to explore GitHub clones with desired adaptations.

Now I am going to show you [another SO post](https://stackoverflow.com/questions/477572/strange-out-of-memory-issue-while-loading-an-image-to-a-bitmap-object#3549021). This post contains a code example that illustrates how to decode and scale an image without consuming much memory in Android. Why don’t you now play with it and ask me any questions you have? (Q&A session starts)

Other Stack Overflow posts to demonstrate:

<https://stackoverflow.com/questions/33464239/how-can-i-add-animations-to-existing-ui-components#33464536> (Add animation to an Android view---logic customization)

<https://stackoverflow.com/questions/477572/strange-out-of-memory-issue-while-loading-an-image-to-a-bitmap-object#3549021> (Decode and scale an image without consuming a lot of memories---declare an unknown variable, declare a new exception)

<https://stackoverflow.com/questions/25802970/how-to-use-sha-256-with-android/25803281#25803281> (Encode an array of bytes to a hexadecimal string---insert a null check and some refactoring)

<https://stackoverflow.com/questions/37273498/add-lat-and-long-to-arraylist/37273871#37273871> (Read asset file in Android---refactoring)