CptS 422: Setting up for CheckStyle development

1. Download Eclipse IDE https://www.eclipse.org/downloads/
   a. This will download an installer. Double click on the installer, scroll down and select "Eclipse for RCP and RAP developers" to be installed

2. Clone source code of CheckStyle : git clone https://git.code.sf.net/p/eclipse-cs/git eclipse-cs-git

3. Install CheckStyle in Eclipse.
   a. Help->Install New Software
   b. Paste this http://eclipse-cs.sf.net/update in "work with" bar
   c. Click on "Add"
   d. Select all packages and "Next" until "Finish"
   e. Restart Eclipse

4. Import a sample plugin project
   a. Go to 'File'
   b. Click on Import -> General -> Existing Project into Workspace
   c. Click in 'Browse' and go to the directory where you cloned CheckStyle
   d. Select the root directory of the repository
   e. Select all projects
   f. Click on "Copy into Workspace"
   g. Click on Finish

5. If the code does not compile
   a. In the Problems View, click right on one error and do Quick fix. Install all suggested Maven plugins. Restart Eclipse.

6. Let's talk about CheckStyle
   a. CheckStyle View (Window-> Show View-> Other -> CheckStyle -> Select both views then Open)
   b. Configurations ("Eclipse-> Preferences->CheckStyle")

7. Let's look at the code: It implements a new check called "MethodLimitCheck"

8. Get an AST viewer:
   a. Find the file "checkstyle-7.6-all.jar" (check the repo directory/net.sf.eclipsecs.checkstyle/)
   b. Execute the following command:
      java -cp <abs path>/checkstyle-7.6-all.jar com.puppycrawl.tools.checkstyle.gui.Main
   c. Open the MethodLimitCheck.java and let's look at its AST

9. Run the sample plugin
   a. Right click on "net.sf.eclipsecs.sample" on project explorer and click on "Run As -> Eclipse Application"

10. Let's see the "MethodLimitCheck" in the new Eclipse Instance
    a. Go to "Eclipse-> Preferences->CheckStyle"
    b. See additional configuration "Sample Builtin Checks"
    c. Create new configuration
       i. Click on New and give it a name (e.g. Test) then ok
       ii. Double click to configure
       iii. Select Method Limit from My Custom Checks and click on Add
       iv. Define the threshold that you want to use, severity, etc. Let's put 2 as the maximum number of methods and then click on OK.
       v. Set the new config as default then click on "Apply and close"
    d. Let's see if our check works
       i. Import a new project
       ii. Right click on project -> Properties. Make sure the right config is selected.
       iii. Right click on the source folder and go to Checkstyle->Check code with CheckStyle
       iv. Open CheckStyle viewer (Step 6)

For more info: http://checkstyle.sourceforge.net/