FOSSEE Signal Processing / DSP Toolbox Evaluation
Coding and Function Testing

Thank you for your interest in FOSSEE Toolbox project. You have expressed interest in the Signal Processing / DSP Toolbox. Before you start working on the toolbox, we would like to assess your coding and testing skills. Please read the details mentioned below.

There are two sections in this test. Both sections are compulsory.

SECTION-I

Choose any one Matlab function from the list given below and develop equivalent Scilab functions-
dpss
pmtm

Choose any two Matlab functions from the list given below and develop equivalent Scilab functions-
iirnotch
fircband
iircomb

The steps you would follow are-
1. Install Scilab 5.5.2.

2. Learn to write Scilab functions
http://spoken-tutorial.org/tutorial-search/?search_foss=Scilab&search_language=English

2. Understand what the Matlab function does
https://in.mathworks.com/help/dsp/functionlist.html
http://in.mathworks.com/help/signal/functionlist.html

3. Implement the same in Scilab. You may use any existing Scilab functions.

4. Add appropriate comments throughout the code. Place header comments that include your name, function, input arguments, output arguments details. Include an example in the comment section. Cite any sources you may have used. This step is compulsory. **Plagiarism of any sort will not be tolerated and your code will be summarily rejected.**

You cannot use any other tool/library besides Scilab.

SECTION-II

This section assesses the developer's testing skills. Please follow the instructions given below.

The folder **SPToolboxTest** has three functions- **eqtflength, is2rc, seqperiod** from the FOSSEE Signal Processing Toolbox. The functions have been coded to match the Matlab counterpart in terms of arguments, functionality, exception handling and output.

Your task is to come up with test cases (sce/sci) that detect errors (if any) in these functions. The errors (if any) may pertain to logical, syntactical, exception handling among others. Please do not come up with test cases only to test these errors. Please develop an exhaustive group of test cases.

The steps you would follow are

1. Develop test cases for each function.
2. Include the following details as comments in the test case code- your name, what is it that you're testing, references (if any), output and testing status (passed/failed). This step is compulsory.

You cannot use any other tool/library besides Scilab.

Code submission

1. Create a **private Bitbucket** repo. The name of the repo should be- (your) **First name Last name- Signal Processing Toolbox**. Add **fosseeToolbox** as a collaborator to your private repo. Any repo with public access will be rejected.
2. Create two folders in your repo with the name- **Section I** and **Section II**.
3. Push section I code to the folder Section I. Add a readme file. The readme file should explain how to execute the code with examples for all the functions. The readme file should be exhaustive.
4. Create three folders in Section II folder with the same name as the three functions you have tested. Push your test cases to the pertinent function folder. Create a readme file that summarizes a test report for each function. Push this report to the Section II repo.
5. Fill the form and submit Bitbucket repo details here- https://goo.gl/forms/esFZEHwpVAZRxv9Q2