PROJECT PROPOSAL FOR SCILAB IN GSOC 2017

INTRODUCTION:-

I am Diganta Dutta from India.I am currently pursuing BSc. in Computer Science, Mathematics and Statistics at Christ University, Banglore. I am committed to programming on Open Source platforms and developing softwares and games. I also keep a keen interest on ethical hacking. Among the open source platforms I am adept at include **C, C++, JAVA, SCILAB, wxMaxima**. I also have knowledge on **Python, SPSS and R**. I spend around 6-8 hours on coding and the time is also distributed to using **Blender** and learning the **Unreal Engine** created for developing games using **C++**. I have used **SCILAB** in my whole 1st year in college as it was in our syllabus so I used to spend time creating different types of graphs.

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SUMMARY:-

PROJECT IDEA/S I WANT TO WORK UPON:

a) PDF Generation (SCILAB Internals)

b) Memory Safety (SCILAB Internals)

c) Anonymous Usage Tracking (SCILAB Internals)

Link: *https://wiki.scilab.org/GSoC_project_proposal*

DESCRIPTION/SUMMARY:

a) PDF Generation: I want to work on this project because most of the big sector organisations and even teaching institutes want their projects and assignments to be submitted in PDF files. So, using JAVA we can create a tool which while saving a SCILAB file, will ask which format we want it to be saved or will give .pdf as an option in the extensions list. We can even provide a small button on the toolbar saying 'Convert to PDF while saving'. Since, I am proficient with JAVA, I can take responsibility of the coding part under the guidance of a mentor who can help me with the algorithm.

TIMELINE:

1) ***START (MAY 30-JUNE 20)*** : I will focus on creating the module/s required for generating the PDF of the file (SOURCE CODE, GRAPHS AND PLOTS, RESULTS) created by the user in the SCILAB GUI.
2) ***MIDTERM (JUNE 21-JULY 20)*** : In this duration, I will code the module which will embed the option of generating the PDF while saving the file. It will first ask in a dialog box whether it is need by the user or not.
3) ***END (JULY 22 - AUGUST 20)*** : I will run the code on various random projects on SCILAB ranging from simple to complex and figure out the bugs in the source code of my module and debug them.

b) Memory Safety: Bug Fixes are the best way to keep a software or open source platform available to an end-user. So, we can create a link between the Coverity page and the SCILAB platform's home page. As soon as anyone reports a bug on Coverity, it gets linked to the SCILAB page and is shown under a 'Recent Bugs' column. The bug fixers will then spend their time to fix the bug and update the software/package.

TIMELINE:

1) ***START (MAY 30-JUNE 20) :*** I will focus on creating a module or source code which will work as an auto bug-fixer. The auto bug-fixer will have a directory of files related to the most common bugs that may occur during a SCILAB program and to them attached will be all the solutions using the debugger tool.
2) ***MIDTERM (JUNE 21 - JULY 20) :*** In this duration, the module that is going to be created will have all the difficult and uncommon bugs getting directed to the SCILAB community where the debuggers will try and debug the issue.
3) ***END (JULY 21 - AUGUST 20) :*** In this duration, I will create the code which will create the link between the SCILAB GUI of each end user, the COVERITY page and the debuggers in the SCILAB Community so that the users can report their bugs immediately. When the bug is reported on the Coverity page, it checks its directories for possible solutions to the problem and returns it back to the user. If not successful, the Coverity page notifies the SCILAB Debugging community.

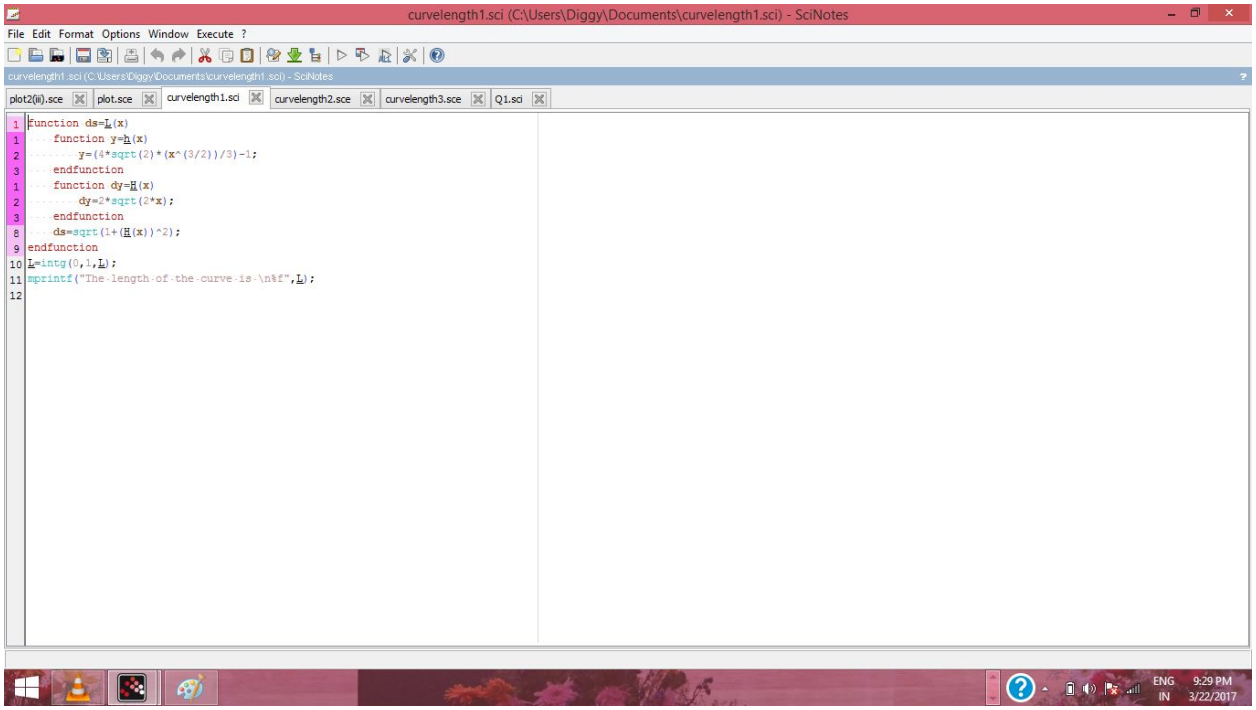
c) Anonymous Usage Tracking: The best use of developing this feature will be that whenever one opens SCILAB, he will get a link to the examples and solutions to the most used features on the platform so that he doesn't have to hover around on the Internet. We have to create the same technology which Google Analytics uses whenever we search in any online shopping portal so that the next time we search, they give us the options of probable products we want to use. I personally am very eager to work on this as this includes the usage of JAVA programming which I am adept at.

TIMELINE:

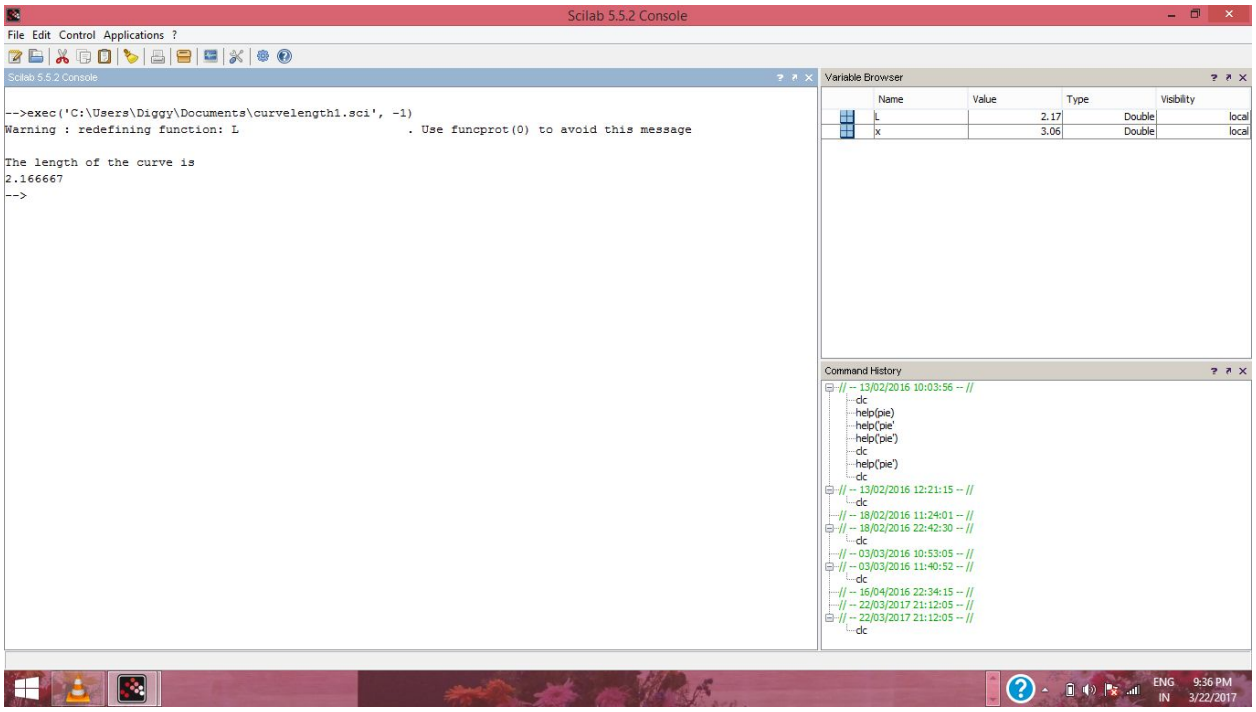
1) ***START(MAY 30-JUNE 20):*** In this part, I will create the module which will store all the data, commands or topics that the user usually uses. Secondly, I will create the module which stores the data, commands or topics that is most used by SCILAB users worldwide. These datasets are stored in a separate repository that will be created by me using a C source code.
2) ***MIDTERM (JUNE 21 - JULY 20):*** In this part, I will create the module which Google Analytics uses. This module will keep track of both the repositories, one representing the user and the other the whole SCILAB community worldwide. In the second part, a dialog box or a simple message box will be created which will pop up everytime an user opens the SCILAB console. The box will have links to all the examples and solutions of the topics that the user generally works upon. An option will be created which will change the view from local to global therefore helping the user look at the most worked upon topics worldwide.
3) ***END (JULY 21 - AUGUST 20):*** The final part will be linking the modules created in the MIDTERM section to the internet pages that give solutions to SCILAB commands, plots and such. It will absorb all the solutions and examples and store them in the repository that I will create. This link will actually be used in the examples and solutions box provided to the user on opening the console.

According to the requirements, I had created 2 examples and fixed one bug which is as follows:

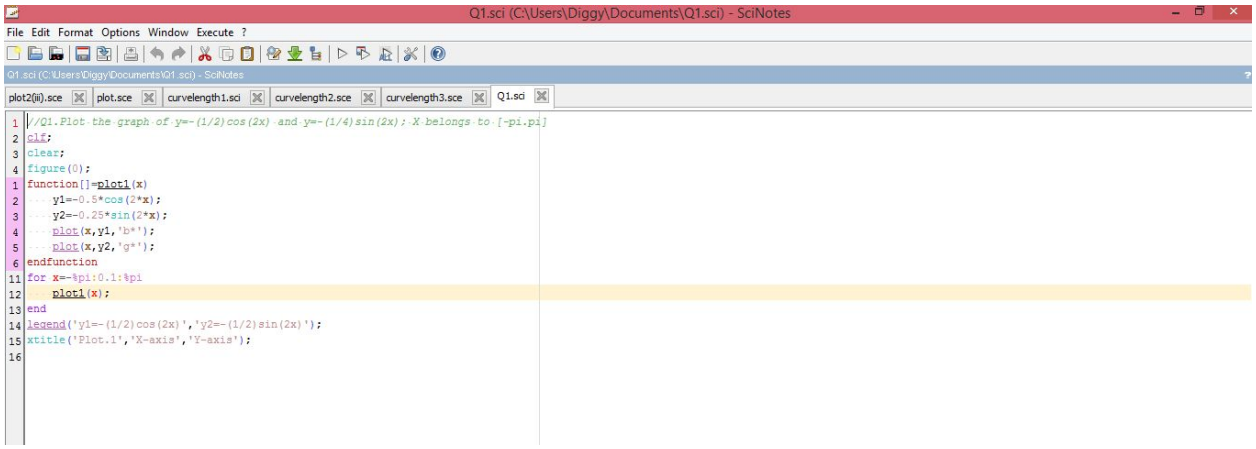
Example 1:



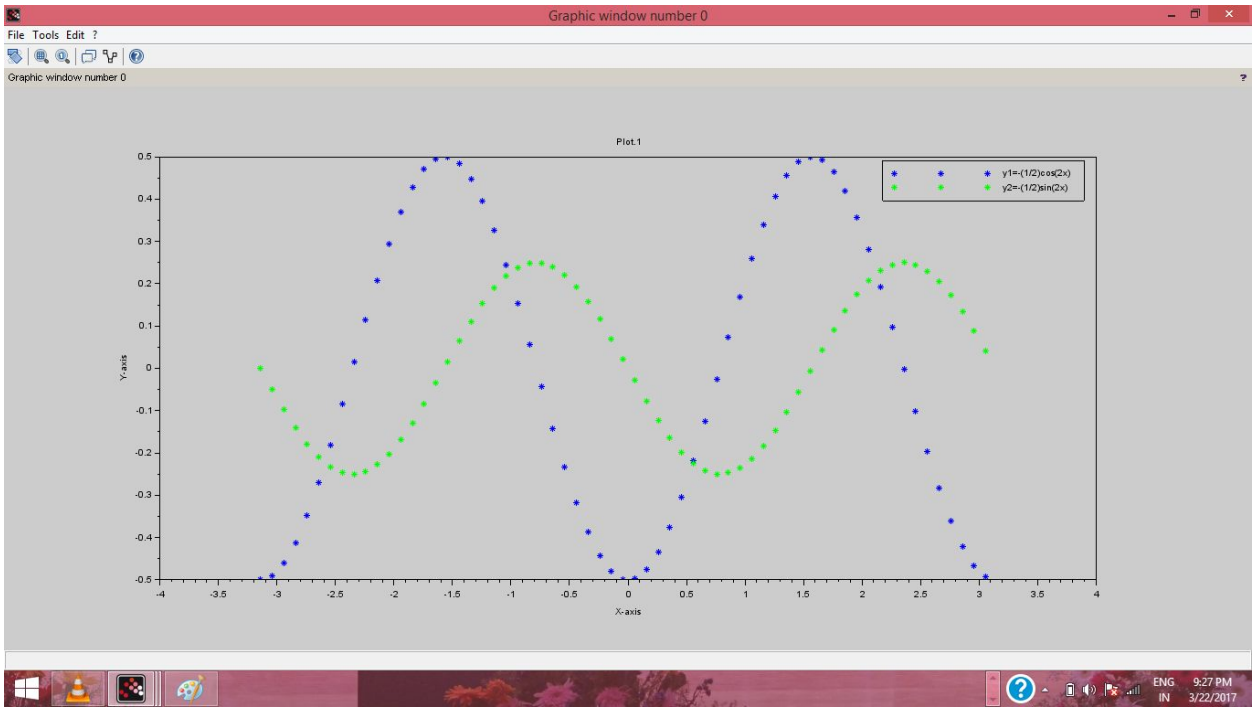
Result:



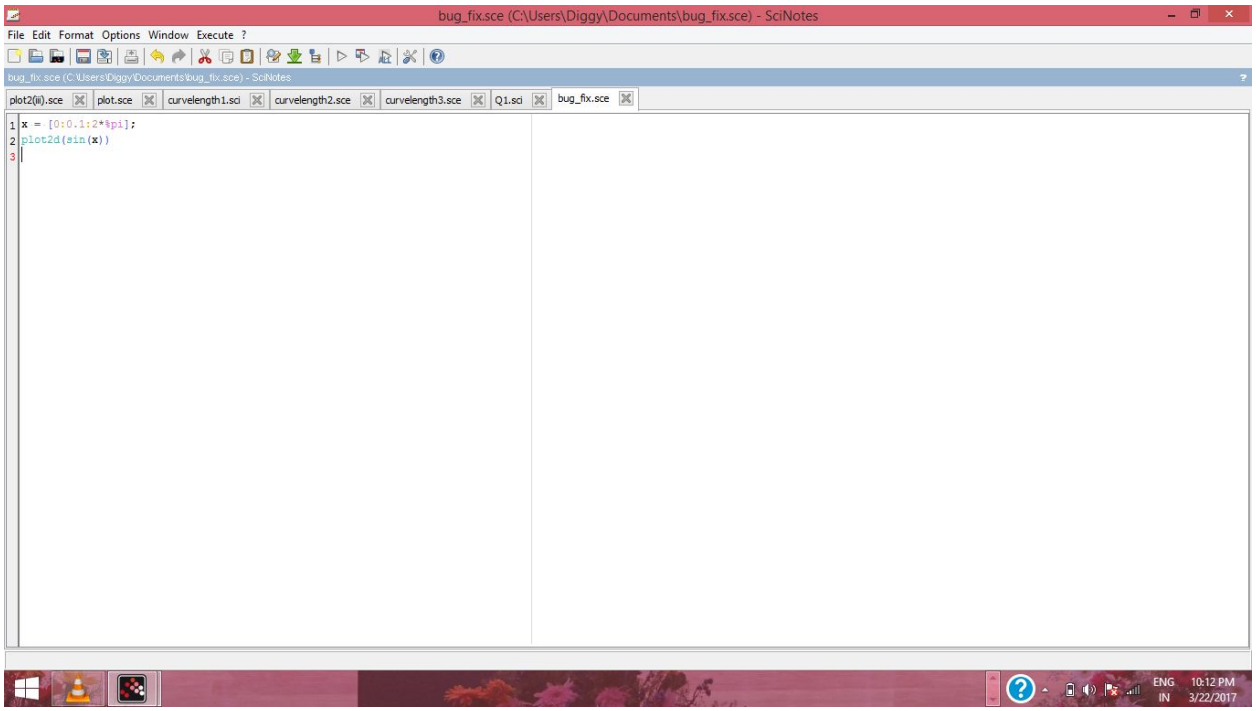
Example 2:



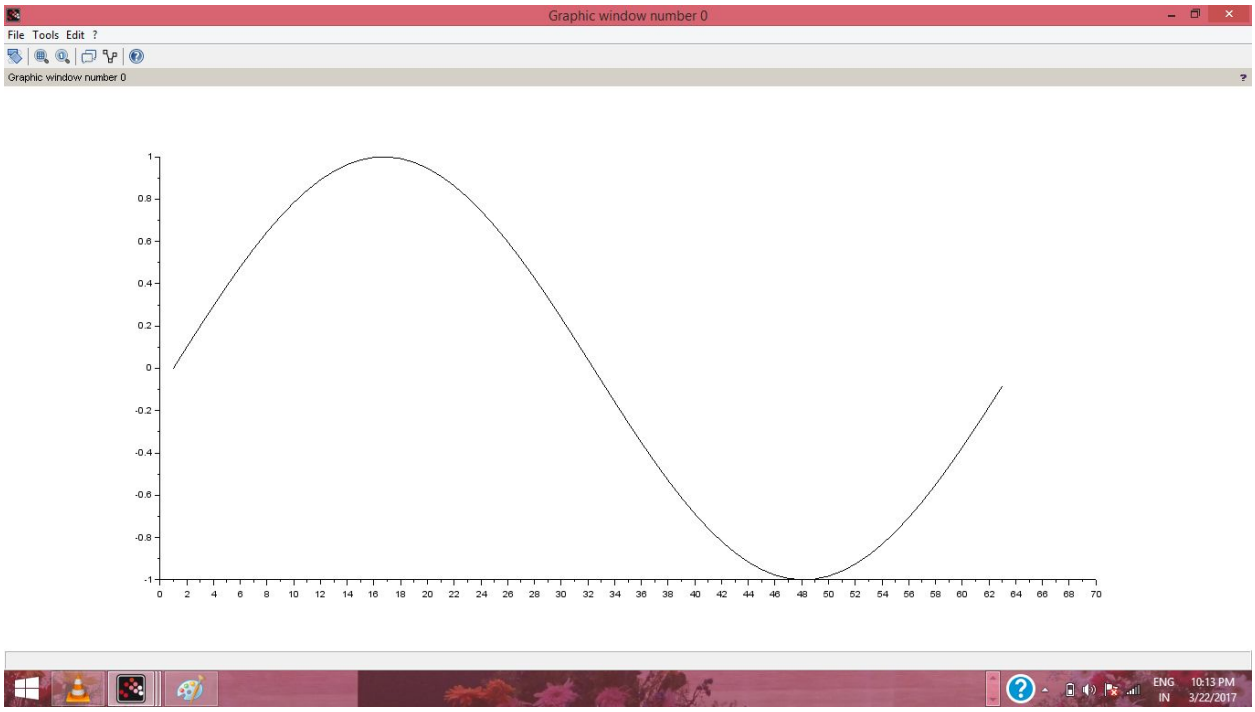
Result:



Bug Code:



Bug Fix Result:



Bug Link: http://bugzilla.scilab.org/show_bug.cgi?id=8599

AVAILABILITY:-I will be able to dedicate around 8-10 hours per day to the proposed project despite of the usual college hours. Even if I get into some important college project or internship, I will intimidate the organisation prior to the start and will also compensate by working over-time to meet the goals.

NOTE: I have given proposals to 3 project ideas as these were under the same column in the Ideas page. Since, I can work on all these 3 topics, therefore I have kept my options open. I will also have no problem if I am assigned to more than one topic to work on. I will give my best and reach my goals.

THANK YOU!