

CECS 543      Iteration 2 Add SMI to your project.

Due Mar 17, Start of lab

An easy bit (we hope). We're going to add a panel for tracking the Software Maturity Index. It's pretty straight forward. Use a table to hold the data from the SMI. You recall that that is Total Modules, Added Modules, Deleted Modules and Changed Modules in a simple ratio:  $SMI = (Total - (Added + Changed + Deleted)) / Total$ .

The SMI panel (there can be only one per project) as newly created looks like this:

The screenshot shows a window titled "CECS 543 Metrics Suite - Test SMI". It has a menu bar with "File", "Edit", "Preferences", "Metrics", "Project code", and "Help". Below the menu bar is a tab labeled "SMI". The main area is titled "Software Maturity Index" and contains a table with the following headers: "SMI", "Modules Added", "Modules Changed", "Modules Deleted", and "Total Modules". The table is currently empty. At the bottom of the window, there are two buttons: "Add Row" and "Compute Index".

SMI	Modules Added	Modules Changed	Modules Deleted	Total Modules
-----	---------------	-----------------	-----------------	---------------

Clearly this metrics would begin to be tracked at the project's (our company's project, CECS 543 Metrics Suite) release. The first row to be added should be only "Added Modules". So, dead simple, add a row to the table by pressing the Add Row button to get this

CECS 543 Metrics Suite - Test SMI

File Edit Preferences Metrics Project code Help

SMI

### Software Maturity Index

SMI	Modules Added	Modules Changed	Modules Deleted	Total Modules
-----	---------------	-----------------	-----------------	---------------

Add Row Compute Index

Enter some value in Modules Added, zero in Modules Changed and Modules Deleted.  
Press Compute index. You get this:

CECS 543 Metrics Suite - Test SMI

File Edit Preferences Metrics Project code Help

SMI

### Software Maturity Index

SMI	Modules Added	Modules Changed	Modules Deleted	Total Modules
0.0	45	0	0	45

Add Row Compute Index

The "Total Modules" text box must be computed by your program. On all subsequent rows, the previous row's total must be accessed. Adding a second row looks like this:

The screenshot shows a window titled "CECS 543 Metrics Suite - Test SMI". Inside the window, there is a tab labeled "SMI" and a section titled "Software Maturity Index". Below this title is a table with the following data:

SMI	Modules Added	Modules Changed	Modules Deleted	Total Modules
0.0	45	0	0	45
0.717391304347826	2	10	1	46

Below the table, there are two buttons: "Add Row" and "Compute Index".

Clearly, 2 modules added, 10 changed, 1 deleted, total is  $45+2-1=46$ .

The SMI must be saved along with all other "project" data and restored upon opening the project if the window was open the project was saved, or just read if the window was closed. (We haven't defined it yet, but we're going to need a mechanism for determining what windows were open and closed upon saving, and we need a means of closing and then reopening a closed window while the project is active.)

Don't allow edits to table entries except the current (bottom) row.

Also, don't allow the user to quit if they haven't saved. Do a "Save / Discard Changes" dialog and make the program act accordingly.