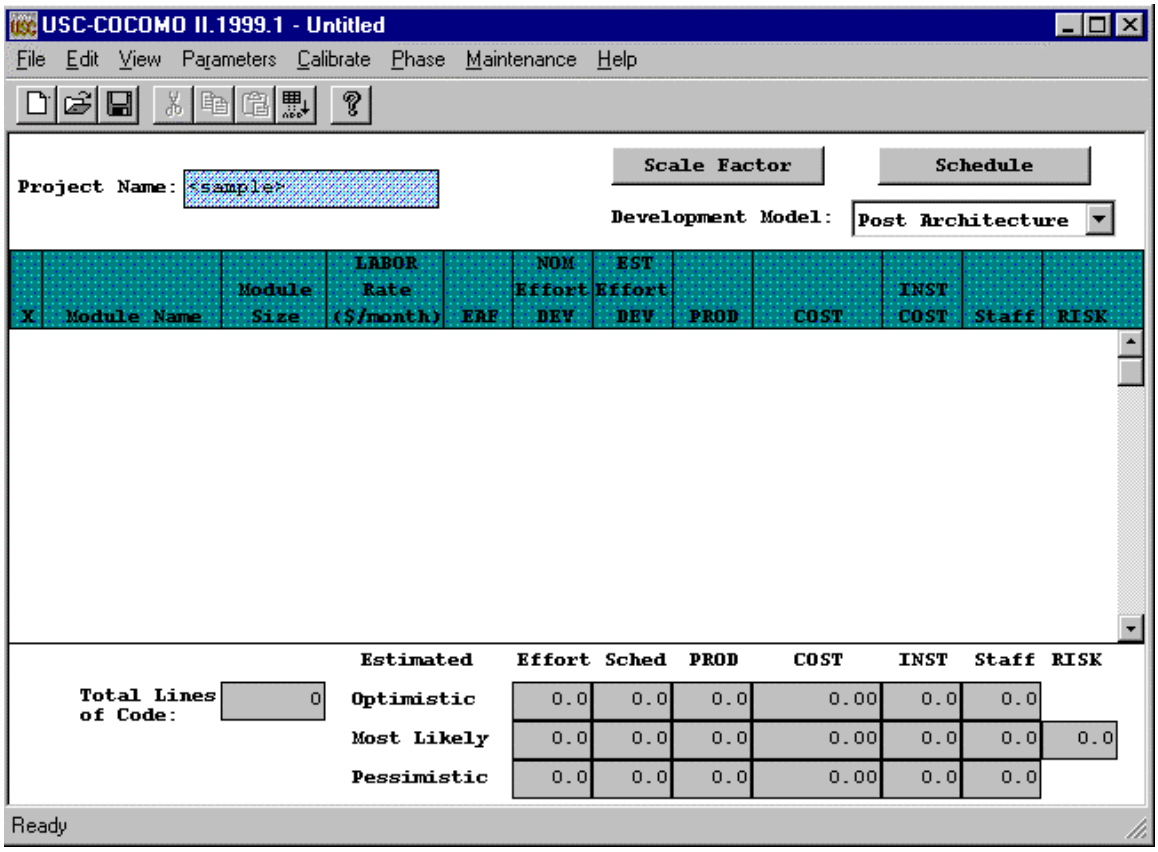
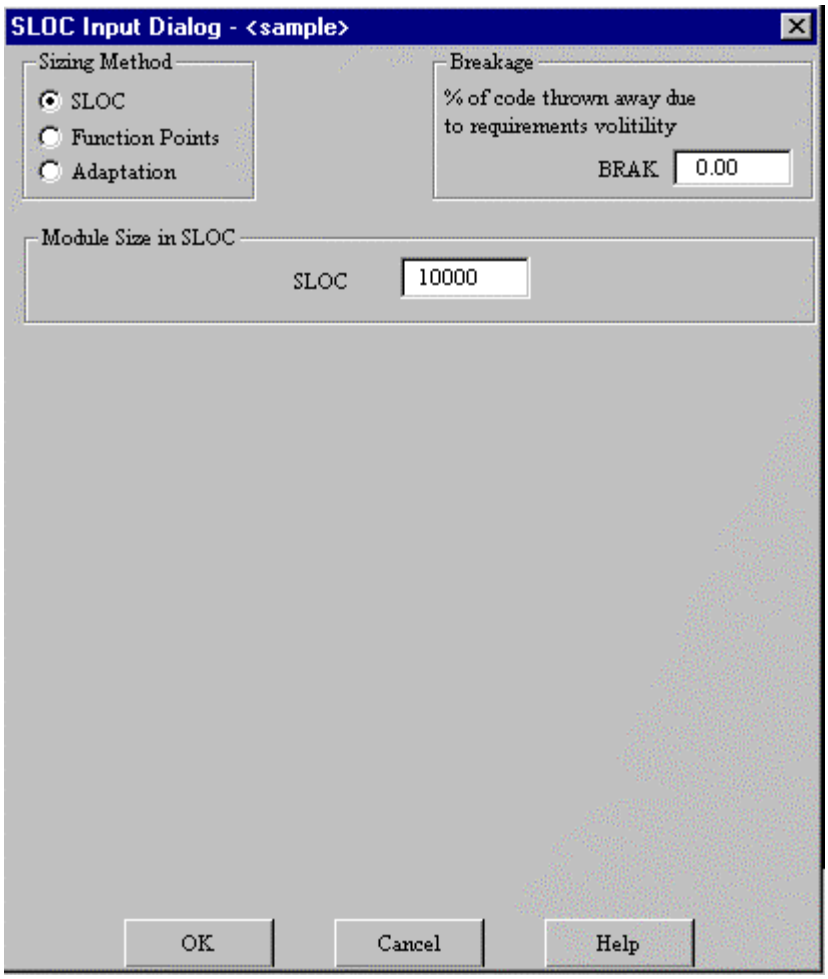
My first COCOMO

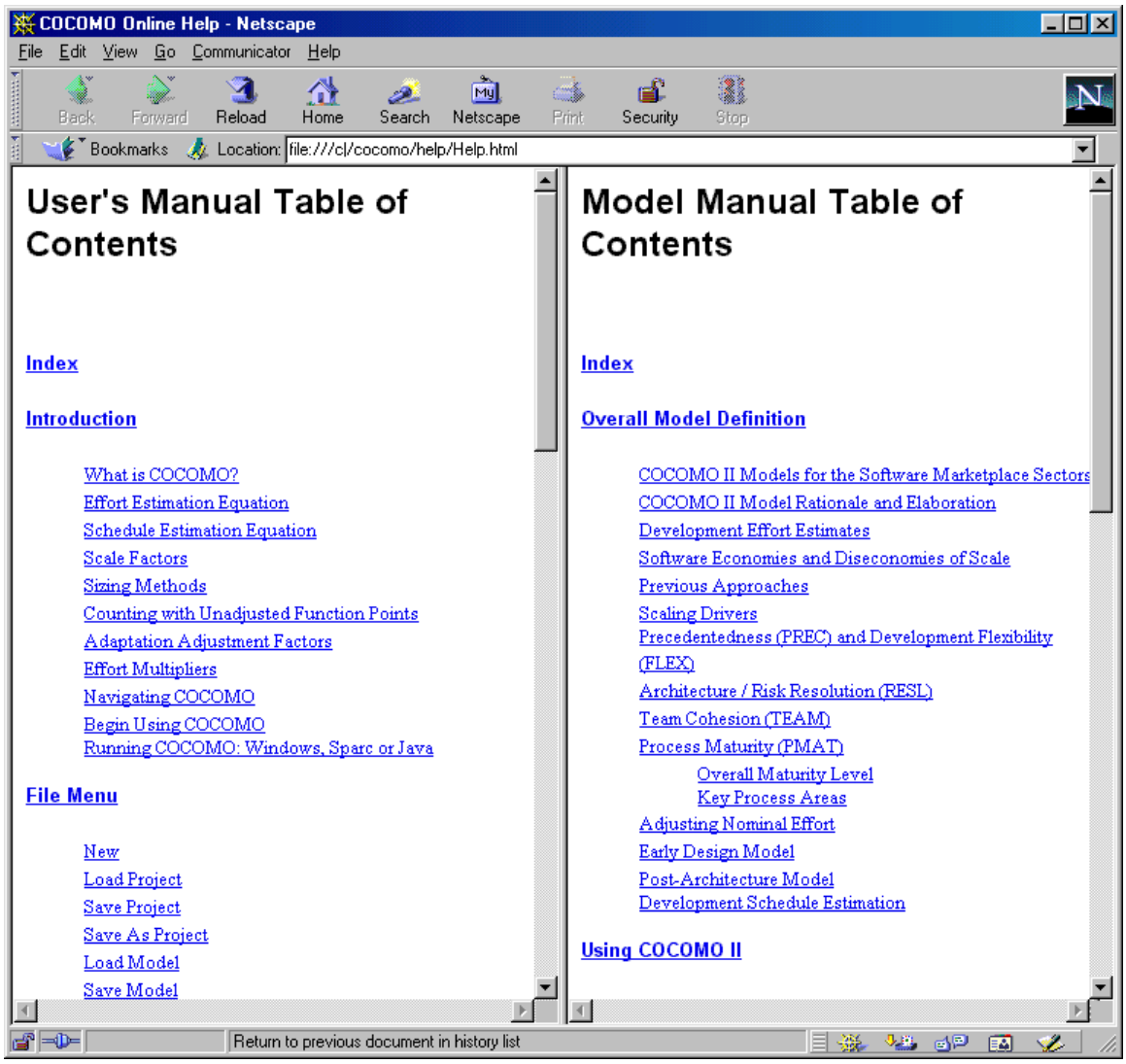
Tutorial:



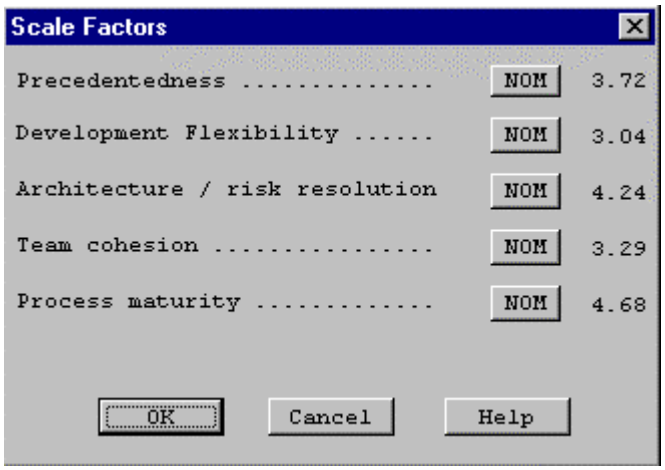
First, name the project. In the blue box next to **Project Name**, which now says **<sample>**, click on it and type **First COCOMO**. Now, we have to add a module. Go to the top menu and click on **Edit**, **add the module**. Then, change the name of the module created under **module name** from **<sample>** to **my first module**. To the right of this is a yellow box under **module size**; right now it is set as S:0. A yellow box means that data can be imputed.



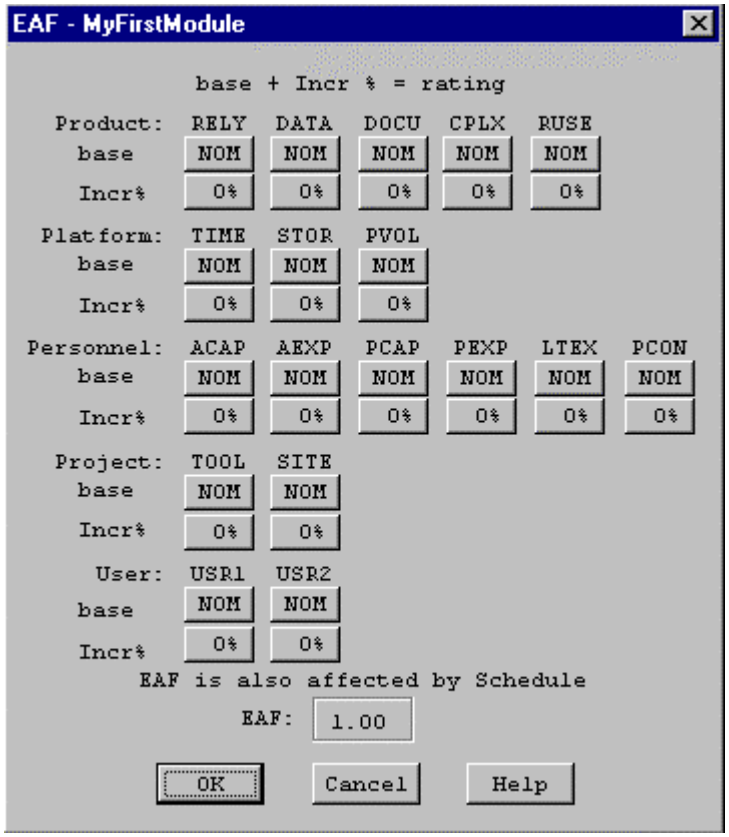
Click on this box and it will open a window entitled **SLOC Input Dialog – my first module**. Here we are given three ways to enter the module size, **SLOC**, **Function Points**, and **Adaptation**, whichever we choose depends on what parameters we are given. However, for our project we are only told that it will be a project with 10,000 lines of code. Let's assume that we don't know for sure which parameter our data falls under. This will give us a chance to use the **Help** function in the top menu. Click on that, and then **COCOMO II Manual**.



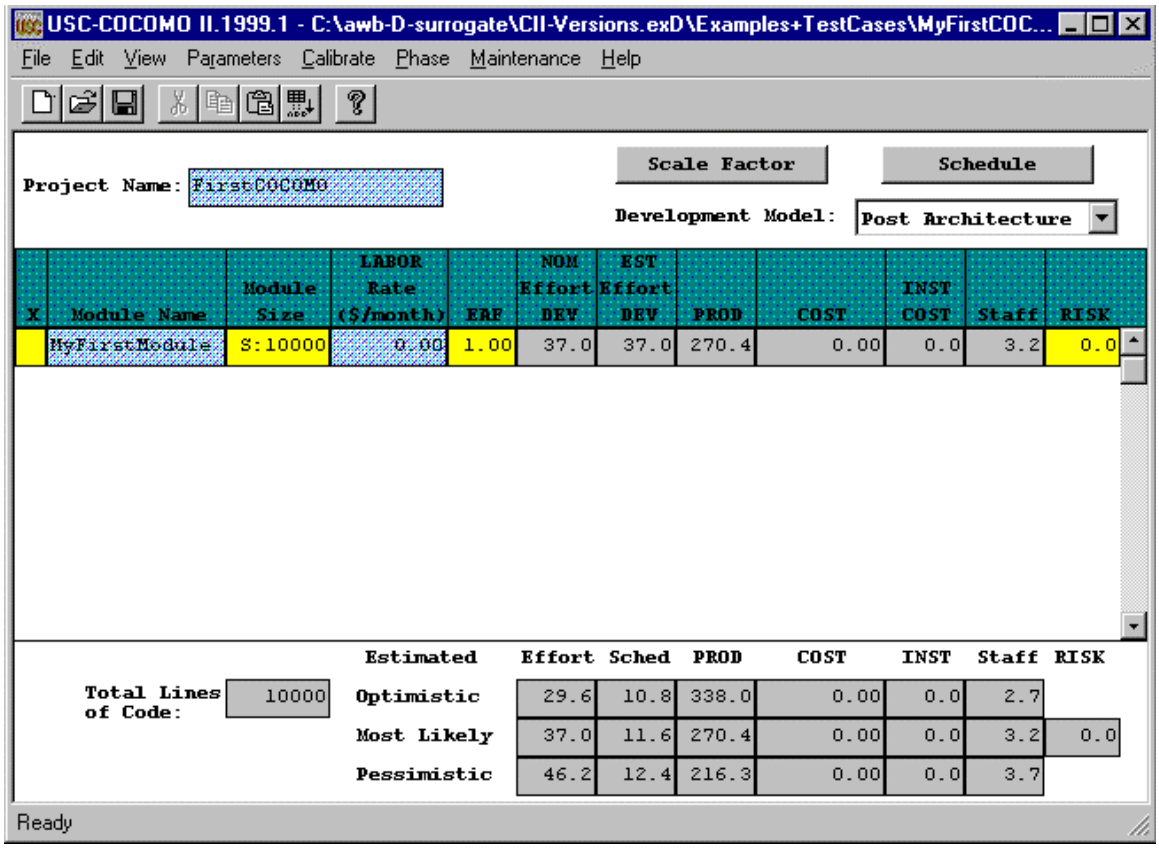
The COCOMO Manual will be opened with whatever is set as the default browser. Since the window is entitled **SLOC Input Dialog**, we should search for "SLOC" in the document. In Netscape, this is done by first clicking in the frame we are looking in, in this case, the left one, and going to **Edit**, **Find in Frame**. Do this now; you will see that "SLOC" was not found in the **User's Manual Table of Contents**. We should now look in the index, click on the first link on the left called **Index**. Do another search. Now we have more success, and quickly find out that SLOC stands for "source lines of code." Go back to **SLOC Input Dialog – my first module**, and select **SLOC** as **Sizing Method**. Now, put **10000** in the field next to **SLOC** and click **OK**. Note, we could also have had success by looking under **Model Manual Table of Contents**, **Using COCOMO II**, **Determining Size**—a slightly more intuitive approach.



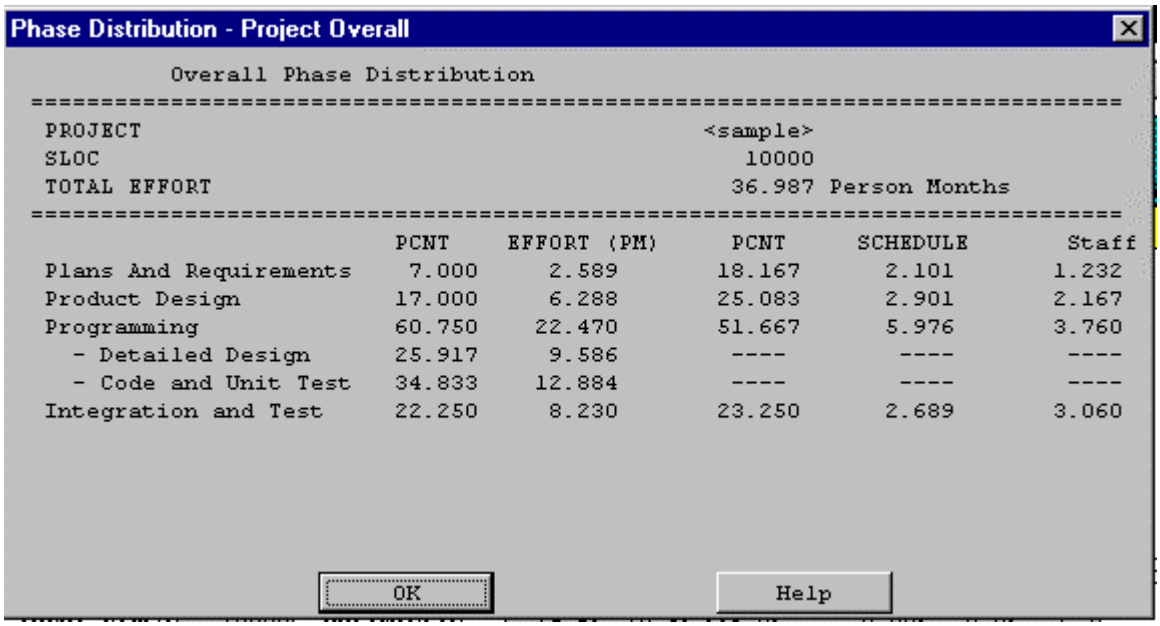
Next, we have to adjust our model for scale factors. Click the gray tab near the top called **Scale Factor**. This will open the menu **Scale Factors**, listing the factors and their ratings, which range from "very low" to "extra high." Scale factors are a significant source of exponential variation on a project's effort or productivity variation. The default, nominal, is put here as **NOM**; clicking on this button will cause the rating to toggle. However, for our project, our boss didn't tell us to do otherwise, so we will leave the scale factors as **NOM**. Click **OK**.



Now, we need to input the EAF, or Effort Adjustment Factors. There is another yellow box below **EAF**, which if we click on, will open a window for us to change the ratings for the effort adjustment factors. However, again, our boss has not told us to change any of these settings, so we will leave them as nominal. If we needed to, though, we could always click on the box that says **NOM** under the adjustment factor to toggle it to the setting we need. Click **OK**.

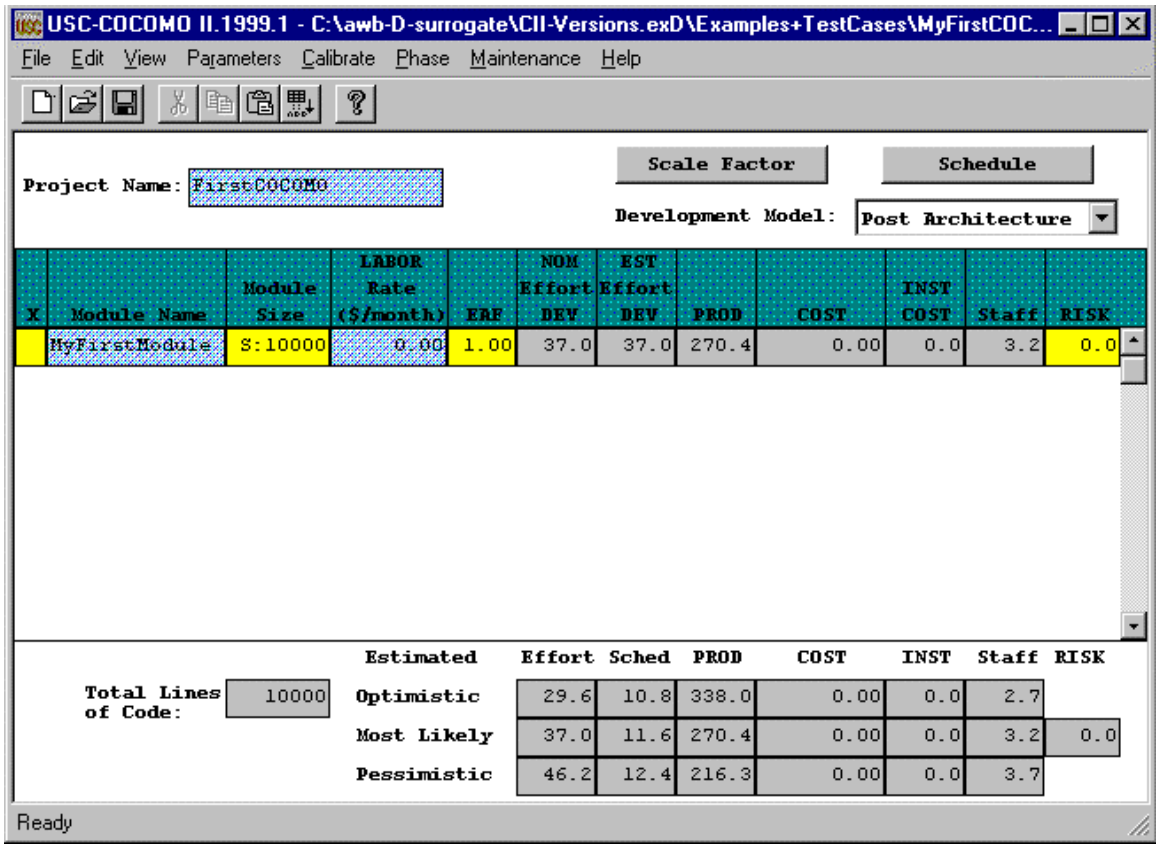


Well, we now look at the bottom table for the results of our module. Look at the vertical axis **Estimated** to **Most Likely** and across at the value under **Effort**. This says for a module with 10,000 lines of code that the estimated effort will most likely be 37.0. 37 is the number of Person Months needed to complete the project. Note, the project is not just the writing of the program, but all the product design (analysis), all the detailed design, all the unit test and integration and test, and all the documentation for the program as well.

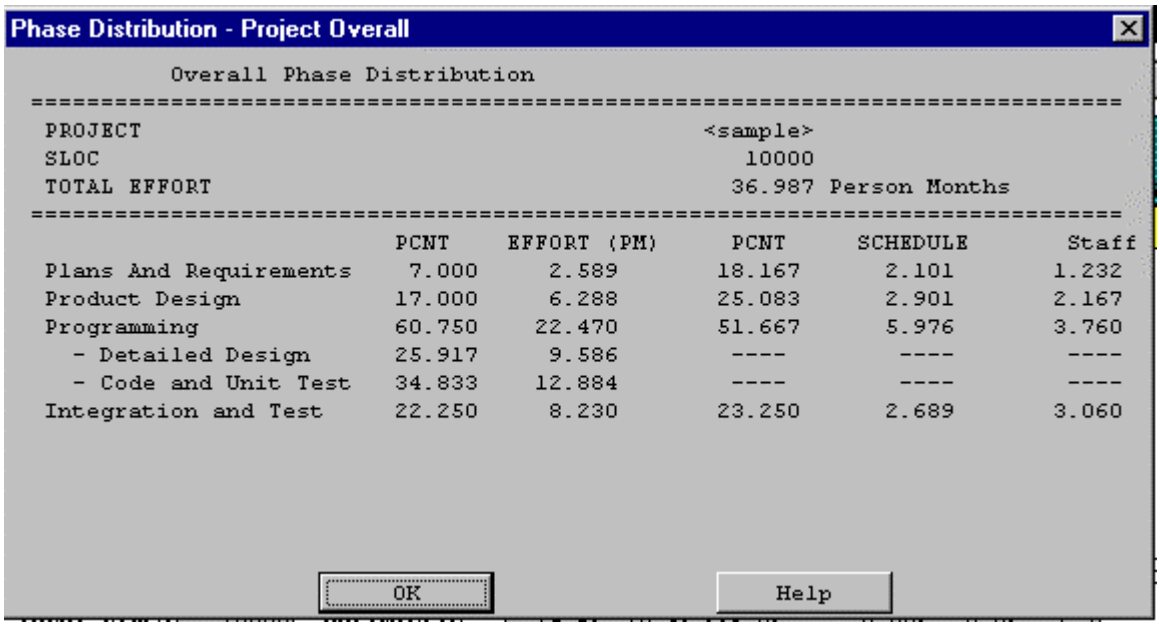


Now, the nice thing about COCOMO II is that we can see how the effort is laid out over these different phases of the project. To do this, go to the top menu and click **Phase**, then select **Project**, **Overall Project**. This opens the window **Phase Distribution – Project Overall**. From the two left most columns we can see that the **Plans and Requirements** phase, which is 7% of the effort of the overall project (**PCNT**), will take 2.589 Person Months (**Effort PM**). (36.987 x .07 = 2.589). The other three columns relate to schedule and staff, which we will get to.

You might notice that the percents listed in the second column don't add up to a hundred, even when you consider that **Detail and Design** and **Code and Unit Test** are both sub-parts of **Programming**. This is because the **Plans and Requirements** phase isn't included in the overall effort, just **Product Design**, **Programming**, and **Integration and Test**, as evident in the summation of percentage. (6.288 + 22.470 + 8.230 = 100). We're done with this for right now. Click **OK**.



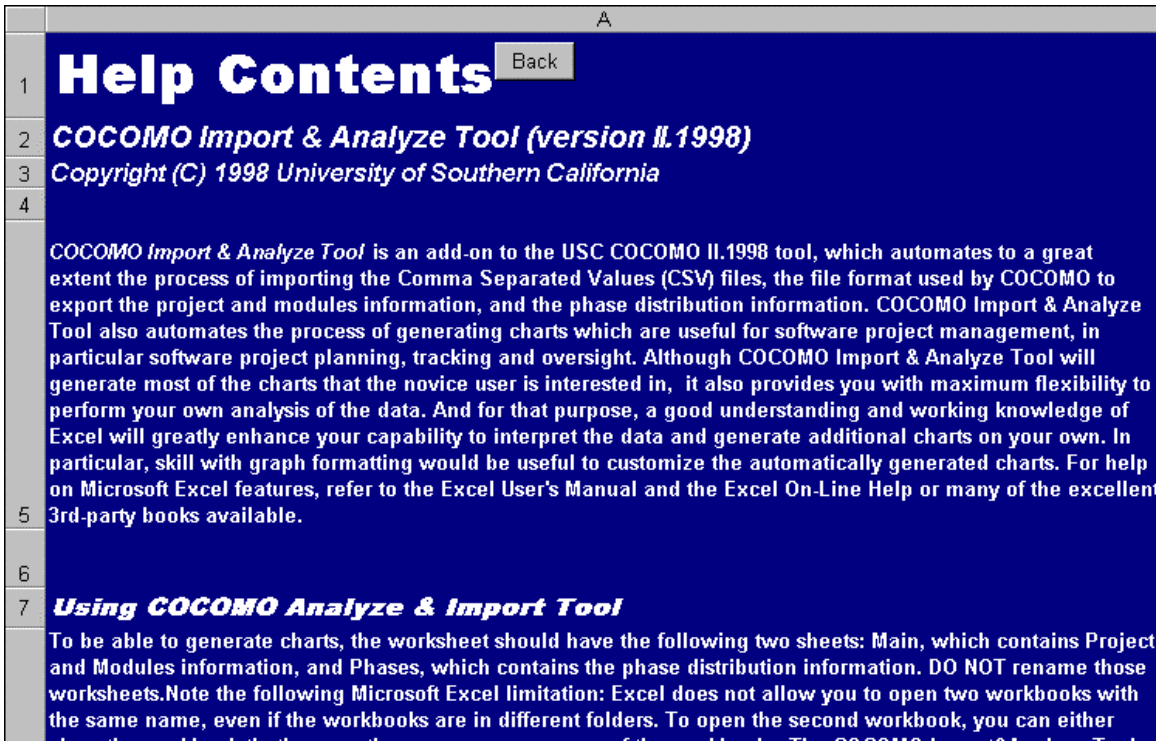
We're back at the main page. Look again at the bottom table at the **Estimated**, **Most Likely** row. There is a column labeled **Sched** which has the value 11.6 estimated as most likely. **Sched** stands for Schedule; this says that 11.6 months is, most likely, the best time to plan for the project's completion. Further, there is also the column **Staff**, which gives the value of 3.2 as the most likely estimate. This says that 3.2 people are the optimum number of people for a project, most likely. You can see now how the effort was computed, as months X people = person months, or, rather, Staff multiplied by Schedule equals Effort. (3.2 X 11.6 = 37.0; accounting for rounding error).



That said, go back to **Phase Distribution – Project Overall** (which we got to through **Phase**, **Project**, **Overall Project**). Notice the third and fourth columns **PCNT** and **Schedule**, this time **PCNT** relates to percentage of Schedule, not Effort. Note again that the **Plans and Requirements** phase is not computed into the overall Schedule, as evident in the summation of percentage. (25.083 + 51.667 + 23.250 = 100) Finally, the right most column, **Staff**, describes staff, and how many people should be assigned to each task. Again, click **OK**.

Now that we have found out all we need to know for our project, we are almost ready to exit COCOMO II. However, we will need the values of this project later, so we'll need to save. Go to **File** on the top menu, click on it, and then click **Save Project**. A **Save As** window will appear. Now, navigate to your **COCOMO** directory (most likely in C:) then click on the **Create New Folder** icon. Change the name of the new folder the **First COCOMO** and double click on it. Then, type in the **First COCOMO** as the file name and click **Save**. We are now ready to go to the COCOMO spreadsheet.

To be continued…


Help Contents
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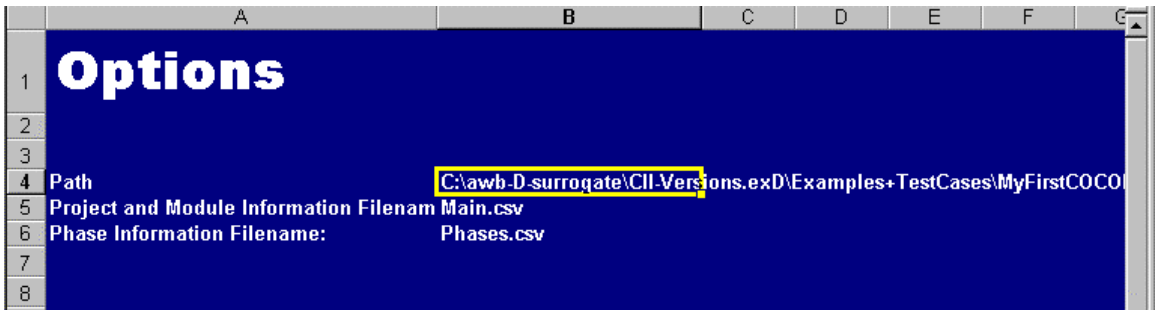
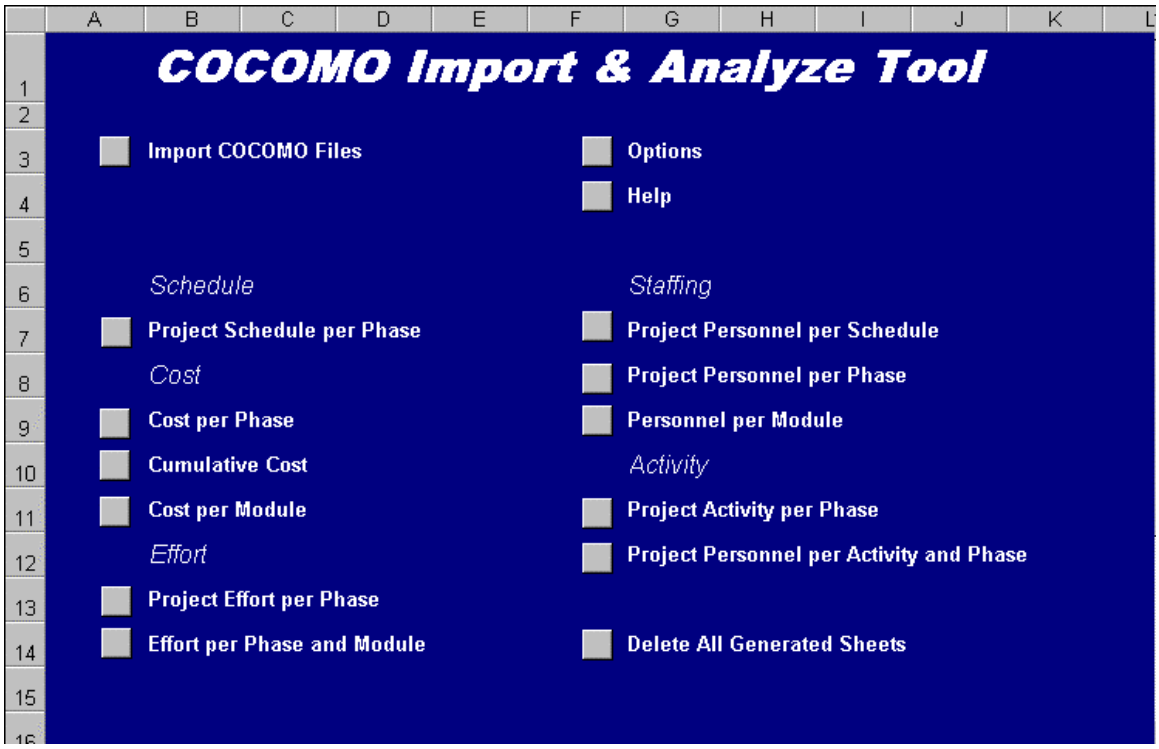
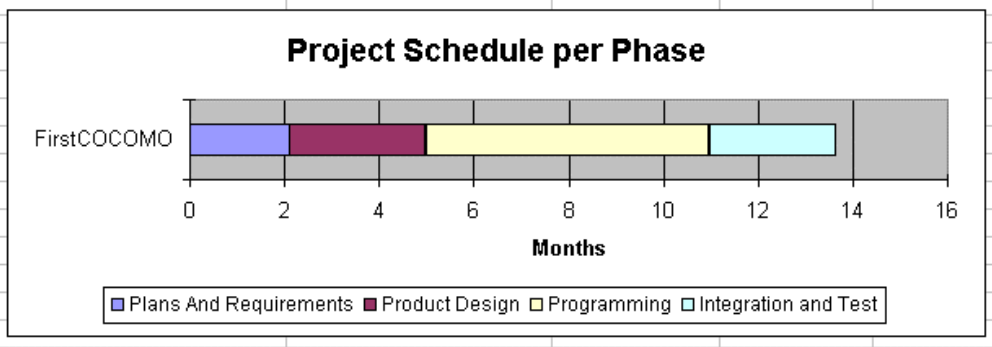
COCOMO Import & Analyze Tool (version II.1998)
Copyright (C) 1998 University of Southern California
COCOMO Import & Analyze Tool is an add-on to the USC COCOMO II.1998 tool, which automates to a great extent the process of importing the Comma Separated Values (CSV) files, the file format used by COCOMO to export the project and modules information, and the phase distribution information. COCOMO Import & Analyze Tool also automates the process of generating charts which are useful for software project management, in particular software project planning, tracking and oversight. Although COCOMO Import & Analyze Tool will generate most of the charts that the novice user is interested in, it also provides you with maximum flexibility to perform your own analysis of the data. And for that purpose, a good understanding and working knowledge of Excel will greatly enhance your capability to interpret the data and generate additional charts on your own. In particular, skill with graph formatting would be useful to customize the automatically generated charts. For help on Microsoft Excel features, refer to the Excel User's Manual and the Excel On-Line Help or many of the excellent 3rd-party books available.
Using COCOMO Analyze & Import Tool
To be able to generate charts, the worksheet should have the following two sheets: Main, which contains Project and Modules information, and Phases, which contains the phase distribution information. DO NOT rename those worksheets.Note the following Microsoft Excel limitation: Excel does not allow you to open two workbooks with the same name, even if the workbooks are in different folders. To open the second workbook, you can either

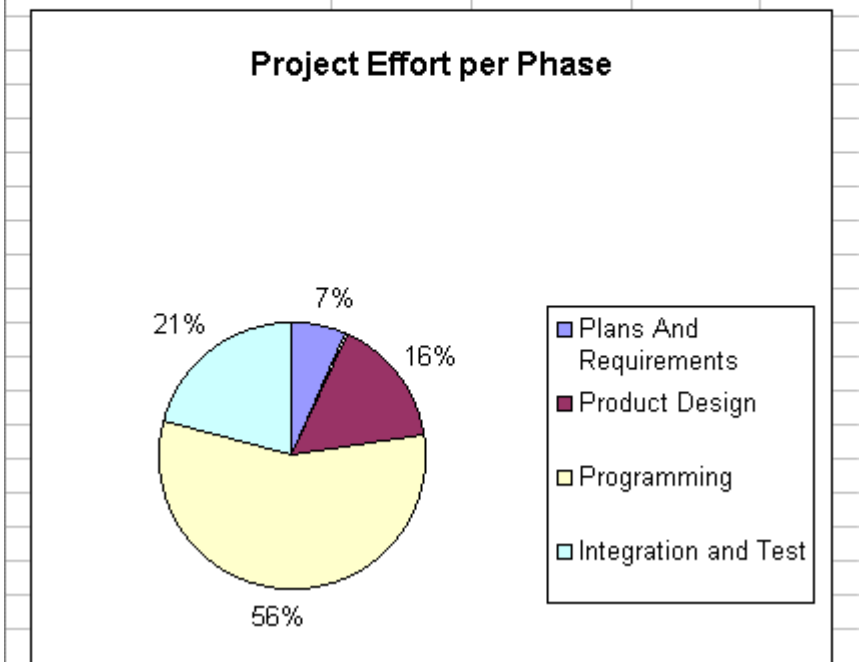

Options
Path
C:\awb-D-surrogate\CII-Versions.exD\Examples+TestCases\MyFirstCOCO
Project and Module Information Filenam Main.csv
Phase Information Filename:
Phases.csv



	A	B	C	D	E
1	**Project Schedule per Phase**				
2		**Plans And Requirements**	**Product Design**	**Programming**	**Integration and Test**
3	**FirstCOCOMO**	2.101291	2.901324	5.97615	2.689267



Project Effort per Phase		
	Effort	Percentage
Plans And Requirements	2.589079	7.00%
Product Design	6.287764	17.00%
Programming	22.469511	60.75%
Integration and Test	8.229574	22.25%



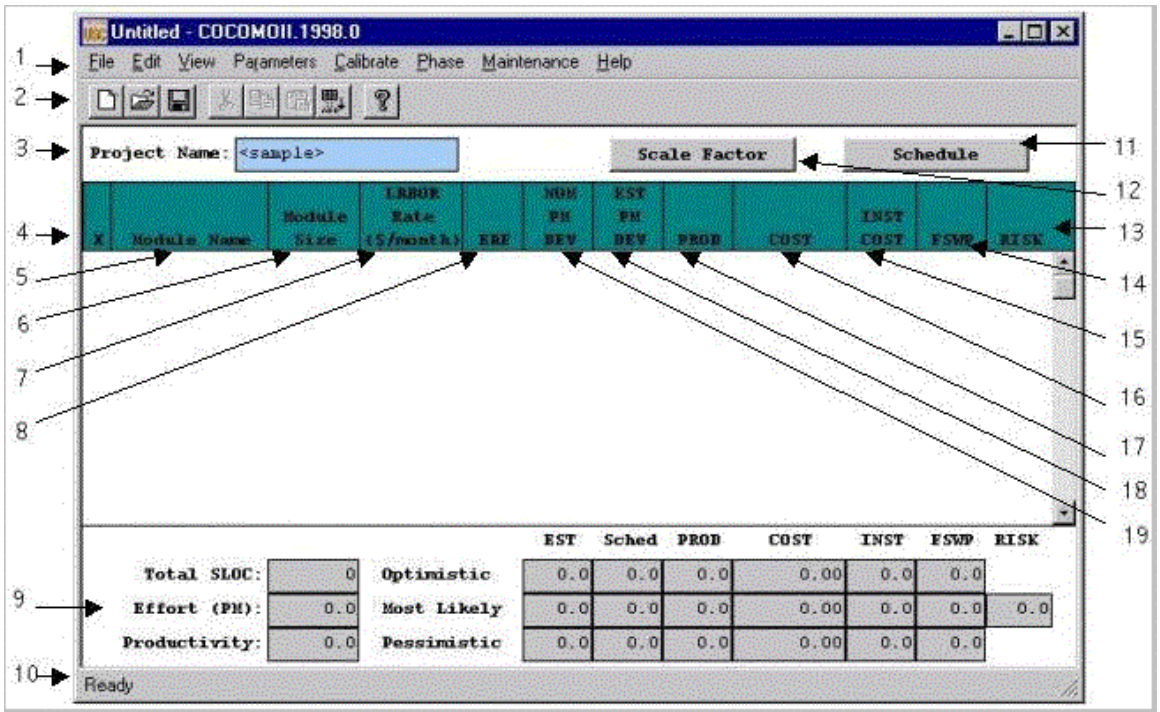


FIGURE 1-3 COCOMO CLEF