Ira A. Fulton Schools of Engineering
Arizona State University

CSE 566: Software Project, Process and Quality Management

Illustrating the Use of the Model Project

Purpose

Software cost estimation is essential to the success of a project, whether it is being developed internally or outsourced. Numerous cost estimation models exist. All models require inputs corresponding to project size as well as parameters that impact development time and effort. In this project, you will gain experience with one of the most well-known cost estimation models. What you learn from COCOMO is largely transferable to whatever model you might utilize in the future.

Objectives

Learners will be able to:

- Identify the types of inputs needed for cost estimation models like COCOMO.
- Select appropriate values for COCOMO cost drivers based on a project.
- Execute and interpret results from the COCOMO model.

Technology Requirements

- Ability to access the COCOMO Calculation by visiting NASA's Space Telecommunications Radio System (STRS): COCOMO Calculation webpage
- Word processor
- PDF option to convert the typed document

Project Description

To start, access the COCOMO Calculation by visiting NASA'S Space Telecommunications Radio System (STRS): COCOMO Calculation webpage.

Illustrate the use of the model by creating a sample project for an embedded system. You will generate and turn in the estimation report from the tool for your sample project.

Using the *Your Name_CSE 566_Illustrating the Use of the Model_Template* compose a four-part paper:

Part 1: Model Description (250-500 words or ½ - 1 page)

Write a description where you justify the choice of inputs used in the model:

- Describe the type of project you are estimating.
- Identify its mode.
- Identify its size.
- Explain the project factors which dictate your choice of attributes.
- Execute the model with chosen input values to generate an estimation report.

Part 2: Worst Case Scenario (250-500 words or ½ - 1 page)

- Keeping the project mode and size the same, adjust all of the cost drivers to produce a worst case scenario with maximum time and effort.
- Execute the model with the chosen values to generate an estimation report.
- Discuss how the estimate changes.

Part 3: Ideal Conditions Scenario (250-500 words or ½ - 1 page)

- Keeping the project mode and size the same, adjust all of the cost drivers to produce an ideal scenario with minimum time and effort.
- Execute the model with the chosen values to generate an estimation report.
- Discuss how the estimate changes.

Part 4: References (3-5 research-based references)

- Using IEEE or ACM style, list the references you used in your project paper.

Formatting Specifications

The *Your Name_CSE 566_Illustrating the Use of the Model Project_Template* has the established formatting with a header for your identification information (Your Name) and the session you are taking this course (e.g., Spring B 2022), headings, subheadings, line spacing, font sizes, margins, and a sans serif font. These specifications were set up to support the use of assistive technologies, such as screen readers.

In-text citations and paraphrased references within the body of your paper should be in IEEE or ACM style. Whichever style you choose, your References page must be in the same style.

Submission Directions for Project Deliverables

You are given a limited number of attempts to submit your best work. The number of attempts is given to anticipate any submission errors you may have in regards to properly submitting your best work within the deadline (e.g., accidentally submitting the wrong paper). It is not meant for you to receive multiple rounds of feedback and then one (1) final submission. Only your most recent submission will be assessed.

You must submit your Illustrating the Use of the Model Project deliverable in the appropriate submission space in the course. Learners may **not** email or use other means to submit any project for review, including feedback, and grading.

The Illustrating the Use of the Model Project includes **one (1)** deliverable:

1. **Written Final Project Paper:** Your Illustrating the Use of the Model Project must be a single PDF with the correct naming convention: *Your Name_CSE 566_Illustrating the Use of the Model Project*. You are required to use the provided *Your Name_CSE 566_Illustrating the Use of the Model Project_Template*.

Evaluation

Please review the rubric for how this project will be graded. The rubric can be viewed directly in your course, through the submission space for this project. Project papers will be evaluated based on each criterion and will receive a total score.

Prior to starting any graded coursework, learners are expected to read through the rubric so they know how they will be assessed. You are encouraged to self-assess your responses and make informed revisions before submitting your final work. Engaging in this learning practice will support you in developing your best work.

Project papers missing any part of the project will be graded based on what was submitted against the rubric criteria. Missing parts submitted after the deadline will not be graded.

Review the course syllabus for details regarding late penalties.

Scoring Criteria
The learner provides a narrative describing the embedded system they are estimating, the project's mode, size, and project factors that dictate their choice of attributes.
The learner's narrative justifies the choice of attributes used in the model.
The learner generates and includes the estimation report from the tool for the sample project.

The learner re-estimates their project for the worst-case scenario and discusses how the estimate changes.
The learner re-estimates their project for ideal conditions and discusses how the estimate changes.