OMSE 510 Software Estimating

Assignment 3: Software Estimating Task

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Your assignment this week is to use the project characterization data that your Discussion III group produced and apply it to develop a comprehensive software estimate for the Columbia Project. Your estimate is to be an individual/independent effort. However, you are free to continue discussions with members of your group to clarify inputs and assumptions (only) - you may use Discussion III threads, email or other communications to clarify and coordinate such inputs.

The provided OMSE estimating spreadsheet is to be used to develop your estimate. You are free to modify, adapt or otherwise enhance this spreadsheet to meet your needs – but you must stick to the submission requirements outlined below which require both .pdf and .xls files to be submitted.

Minimum Estimating Task Outputs

Your task is to document and deliver a range of estimates, namely "optimistic", "most likely", and "pessimistic". Each estimate is to include total product size, project schedule and project duration. Your output is to also include an estimated cost of labor assuming a nominal $10,000 per staff-month (a.k.a. person-month). Furthermore, you are required to document the gaps (differences) between Columbia's target budget of $3.6M and your labor estimate; also the gap between Columbia's target schedule of 18 months and your duration estimate. Finally, assuming your estimates will exceed Columbia's targets, you are to propose what you believe to be the most feasible alternative(s) for de-scoping the project to meet these targets [see sensitivity / flexibility analysis guidance below].

Required Estimating Process

You are to use at least one of the COCOMO estimating techniques provided (Intermediate COCOMO or COCOMO II); and you are to use at least two of: function points, analogy-based, proxy-based, or rule-of-thumb estimating techniques. You are to provide enough support comments and rationale in your submission to convince yourself that your estimates will withstand some scrutiny (remember, we will be conducting a Delphi estimating exercise).

Historical Database

The spreadsheet has a limited number of application analogies and component proxies that have synthesized for this assignment. These should be enough to produce rough analogy-based and proxy-based estimates. However, you are free to augment this data by adding or changing existing entries that are representative of some of your past projects. If you do so, please paste note(s) into the spreadsheet to draw the reader's attention to your enhancements.

Sensitivity/Flexibility Analysis Guidance

You should be able to develop de-scoping alternatives by varying influence factors and size estimates. For example, you could propose to invest in personnel competencies (hiring, contracting, training); upgrade software development tools (buy big blue) to reduce effort and schedule; relax performance (e.g. response time) goals; relax scalability, availability and usability requirements; remove all of a major application deferring it to a future project; buy and adapt an open source software component to reduce how many new LOC need to be developed; implement only the essential functions and features of an important service to significantly reduce the estimated number of LOC that will be delivered (deferring the remainder to a subsequent project). You should be able to study the impacts of such alternatives on estimates by "tweating" influence factors and scaling back size estimates accordingly.

Important Submission Instructions:
- You are to create and submit a single PDF of all the pages of this Excel workbook once you are done
  - hint: select print entire workbook option and print as PDF
  - Make sure each worksheet prints out on a single page
- Attach completed EXCEL workbook with your submission
- Submission file names format is: **Assignment3LastnameFirstname.ext**
  - No spaces please! Follow this naming format for both the .pdf and .xls submissions