

Math 336 Project
Write a consulting report on mortgage payment for a bank using the current market data you can find on internet

Due: November 20, 2019/Friday 11.59pm

The format of the report is as follows, which has imbedded the DAESI procedures.

1. Title page (3%): This includes the title of the report, author's name, affiliation (you may use your fictional consulting company's name and your home address), contact information (email, phone, and website), and date. This is a single page.
2. Executive summary (or called Abstract) (7%): Limited to one page about the main results and conclusion of your report. This is another single page.
3. Introduction section (15%): This is the first two steps (P: problem identification, i.e., a statement of the problem; and A: abstraction of the problem, i.e., selection of a math modeling method) of the 5-step DAESI math modeling approach. The purpose of your consulting is to provide your client, the bank, a clearly written mortgage loan document which can be easily used by a potential borrower, and hence help the bank to attract more customers. You need to cite at least one reference (e.g., your data source). This section is about 1-2 pages.
4. Data and method section (25%): This section is basically Step 3 (M: model formulation) and part of Step 4 (M: model solution) of the 5-step approach: formulate the mathematics equations for the problem, and describe the mathematical formulas including the mathematical solution of the modeling equations. The section should include the data, at least one diagram and a set of formulas, including the derivation of mathematics results.
5. Results section (35%): This section includes Steps 4 (M: model solution) and 5 (I: interpretation of the model and its results) of the 5-step approach and should have mathematical and numerical results from the solution of the math equations. The emphasis is on numerical results, calculated by R based on formulas. Imbed the R code in your report. You should attempt to interpret the numerical results using words for your client. Please make a comprehensive sensitivity analysis. The sensitivity analysis may be the most valuable information to your client. This section should include at least one table. He often presents this section when one reports to his client. This is the most important section for your client because he wants to know the results first.
6. Conclusion section and discussion (10%): Summarize your work and discuss other alternatives to the problem. Discuss pros and cons of your method.
7. References section (5%): List at least one reference.

Total: 100%

You should use double space and 12-point font size. The total number of pages should be at least 8, including a title page, an abstract page, and six or more report body pages. It is usually a good idea to include more figures and tables.