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CS Project Proposal

For our final project, we would like to expand upon a differential equations problem involving purchasing a home, where a homebuyer borrows a sum of money that contains interest, which is compounded continuously. The problem asks us to determine the monthly payment required to pay off the loan in a certain amount of years. What we would like to do to alter this problem is to ensure that the user does not have to do perform the calculations we did; instead, the user can just input the sum of money they wish to borrow and the number of years in which they would like to have their home paid off. We will give users the option of choosing a house from a number of cities. Different cities have various housing markets, so to make our project more realistic, we will try to reflect the various housing markets in different cities by assigning various interest rates to each city. For example, interest rates in Los Angeles are going to be higher than interest rates in Spokane.

In order to incorporate concepts from Computer Science II, we will organize this problem into classes; we will create a City class and name the cities under this class. In addition, we will use templates in order to be flexible with our variables. To use the input/output files, we will allow the user to enter data from their research into the text file, which will store information such as city names, interest rates, and monthly payments required to pay off the loans. From viewing this text file, the user will have a better idea of places they can afford to live at based on their wealth.

A challenge we anticipate is organization. Because there are many parts to this problem, it will be easy to lose track of different parts of our program. To overcome this, we will write out a detailed outline of our program beforehand and comment our code well. Another challenge we anticipate is implementing the input/output file effectively, since we have not had much practice with this concept.