Individual Project 100%

You need to develop a python script(s) to solve the business problem given in the following case.

A startup wishes to design a new smartphone app to help customers search for the property based on given criteria and provide basic mortgage information. You are contracted to develop the backend of this App using Python. Three data sources have been provided for the development. Hisotry.xlsx contains information about previously sold properties. Property.xlsx contains information about currently listed properties on the market. Credit.xlsx contains information about risk assessment from the mortgage providers.

Along with your scripts, you should also submit a reflective report that summarize your experience in developing the program for this project.

You script(s) should have the following functionalities:

1. Analyze the historical data and generate a scientific model to evaluate a given property.
2. Use case 1: customer finds the property first then requests the mortgage information.
   2.1. Find the properties based on the customers' chosen criteria, including size, location, type, and price. An estimated price, calculated based on the previous model, should also be provided with the search results.
   2.2. For the property selected by the customer, calculate the credit approval probability and monthly payment based on customers' financial information, including annual income, deposit, and mortgage length.
3. Use case 2: customer looks for affordable properties.
   3.1. Calculate customer's affordability based on financial information, including annual income, deposit, and mortgage length.
   3.2. Find the properties based on the customer's affordability, and other chosen criteria, including size, location, type.
4. Option to save the results (property information and mortgage information).

Requirements:

1. All codes must be implemented using Python.
2. Packages possibly involved are: CSV, math, etc.
3. You need to specify the functionalities you try to accomplish in your script.
4. Codes must be well documented, such as comments at the beginning or a separate readme.txt file describing what each file (script, data file, etc.) does, how to run all codes, and how to organize your files.
5. You may search online or discuss it with other students, but you must work independently to write your code.

Notes:

- Additional Python packages (not covered in class) are welcomed to use. But they should be well documented.

- Do not overcomplicate the problem. Your primary goal is to demonstrate your understanding of python programming (this is not a data analytics project).
- Be creative.