FIT0136 PYTHON ASSIGNMENT 3

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INVESTOR APPLICATION

When main.py runs it internally first reads the given csv file and displays the menu as follows:

WELCOME TO INVESTOR APPLICATION

Investor Application Menu:

1.Suburb Property Summary

2.Average Land Size

3.Property Value Distribution

4.Sales Trend

5.Locate Property by Price

6.Exit

What would you like to know / get information about ?

Please Enter your choice (1-6) :

- When the user selects option **1** : a list of different suburbs available in the dataset is shown. The user is then asked to input the name of a suburb from the displayed list or type 'all' if they want information for all suburbs. Based on the chosen suburb and if its valid, the program provides a suburb property summary, which includes statistics like the mean, median, standard deviation, minimum value, maximum value, and count for the selected suburb. Additionally, it also displays property summaries for each property type within the chosen suburb, offering the same statistical information for each property type.

- When the user selects option **2** : a list of available suburbs within the dataset is presented. The user is prompted to input the name of a specific suburb from the displayed list or enter 'all' if they desire information for all suburbs. After choosing a valid suburb, the program calculates and displays the average land size for the selected suburb, expressed in square meters. It's worth noting that all land size units in the dataset are internally converted to square meters for consistency.

- When the user selects option **3:** a list of available suburbs within the dataset and the currency available in our program is presented. The user is prompted to input the name of a specific suburb from the displayed list or enter 'all' if they desire information for all suburbs.Then the user is prompted to enter the currency eg AUD (austrialian dollars),INR(Indian rupee) . After choosing a valid suburb and target currency ,the program then converts property values to the chosen currency using exchange rates. Subsequently, it creates a histogram for either a specific suburb or all suburbs, saving the image locally. If issues arise with data or exchange rates, the user is promptly notified. This option provides a graphical representation of property value distributions, enhancing user insights into the dataset.

- When the user selects option **4:** the program calculates the number of properties sold in each year within the dataset. It then visualizes these sales trends as a line chart, making it easy to observe the changing sales patterns over time. The resulting line chart is saved as an image file locally. This option provides users with a clear and graphical representation of property sales trends, helping them better understand the historical sales performance over different years within the dataset. The method does not return a value but directly generates and saves the line chart for user reference.

- When the user selects option **5:** offers users the capability to find a property with a specific price within a chosen suburb. Initially, a list of available suburbs from the dataset is displayed for selection. Users are prompted to input the name of their chosen suburb and the numeric target price they want to locate within that suburb.Upon validation, the program filters the dataset to retrieve a list of property prices in the specified suburb. It then sorts this list in descending order using a reverse insertion sort. Next, a recursive binary search is performed to determine if the target price is present in the sorted list. The method returns a boolean value, True if the target price is found and False if it isn't. The user is notified about the search result, informing them whether the target price exists in the selected suburb's property prices or not. In cases of invalid input, the program guides the user to provide valid input. This option assists users in locating properties by their desired price range within a specific suburb, enhancing their search and analysis capabilities.

- When the user selects option **6 :** It exits the main program**.**

The program runs until the user wants to exit the program.