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SDEV 140

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Mortgage Calculator User Manual: Notes

As someone who's not mathematically minded, I could not have determined the complex mortgage calculations without the reference of this included source -

Citation: <https://www.wikihow.com/Calculate-Mortgage-Payments>

First data set: 150,000 cost, 15,000 down, 3.6% interest, starting 06-11-2023

(Showcased in this screenshot is what the user would see if they scrolled to the top with the data provided)

A screenshot of a computer

Description automatically generated with medium confidence

Second data set: 300000 cost, 45000 down, 6% interest, starting 11-14-2026

(Showcased in this screenshot is what the user would see if they scrolled down to the bottom with the data provided)

A screenshot of a computer

Description automatically generated with medium confidence

Mortgage Calculator User Manual: How to use

Purpose: The Mortgage calculator has been developed using Python in tandem with the native Tkinter, datetime, and timedelta modules. Additionally, this graphical user interface program utilizes an external module called pillow (or PIL). This program has been designed to produce a 30-year (or 360 month) Mortgage payment schedule. It completes this task in two ways: (1) within the GUI application and (2) by producing a CSV file which can be loaded into an excel spreadsheet.

This calculator achieves its gold by taking four user inputs:

1. The cost of the house
2. The down payment amounts
3. The annual interest rate
4. When the mortgage will be taking effect

In order to use this graphical user interface application, the user must ensure that they have Python (and its native libraries for Tkinter, CSV, and Datetime), And the Python module PIL’.

if the user does not have pillow, which is used for viewing images within a graphical user interface, it can be downloaded by accessing the computers’ PowerShell and typing in “pip install python-tk Pillow”.

If the user has met all of these criterium, the application can be accessed in one of multiple ways. primarily by opening the PowerShell window and typing “python WaltonPamelaFinalProject.py” or by opening the file in your preferred IDE. this program was designed in Visual Studio code, but there is no reason it should not work in any other IDE.

1. Once open, the user will be prompted to fill in a text box with the numerical value of the home being purchased. The user should Supply that number either in a string of characters or utilizing commas and periods where necessary. Then the user should select the submit button where they will be taken to the next screen.
2. On the next screen, the user will be prompted to fill in a text box with a numerical value of their supplied down payment. This number can either be entered as a string of characters or by utilizing commas and periods where necessary. Then the user should select the submit button where they will be taken to the next screen.
3. On The following screen, the user will be prompted to fill in a text box with the percentage value relating to annual interest rates. It is important that the user not use a percentage sign in their input. However, periods are welcome where necessary. Then the user should select the submit button where they will be taken to the next screen.
4. On the next screen, the user will be prompted to fill in a text box with the date value, utilizing the YYYY-MM-DD format, Of when the loan is likely to take effect. This will be used to help calculate the schedule of payments. Then the user should select the submit button where they will be taken to the next screen.
5. At this point, the program will produce a CSV file which includes the information that will be displayed within the window to the user. that information includes payment number, payment date, monthly payment amount, remaining balance, and total paid.
6. If the user so chooses, the CSV file can be loaded directly into an excel spreadsheet for more convenient analysis.

Note that at any point in the application procedures, the user can end the program by selecting the quit button at the bottom of the graphical user interface. Additionally, please note that this program only accounts for fixed mortgage rates. this is a specialized tool in a very specific field, it may not fit all needs and utility.