

CS 101 – House Prices

Fall 2022

Algorithm Due: **November 20, 2022**

Program Due: **November 20, 2022**

All work submitted must be your own.

Deliverables: You must use functions to modularize your work.

50 points off for programs that crash on expected input.

Classes

You will have to implement a simple class for this assignment with adding some methods and attributes to the class.

Class Requirements:

- You will need to define class House that will include below instance attributes:
 - o Year house was built.
 - o Price of the House when it was purchased.
 - o Location of House
 - o Current value of the House.
- Class House will also include below methods:
 - o Constructor with default values for instance attributes (Year house was built, price of the house and current value to 0, and location to “none”).
 - o Calculate `current_value()`: this method will calculate the current value of the house with appreciation rate of 8%. Formula to get current value:
$$\text{current value} = \text{price of house when it was purchased} \times (1 + \text{Appreciation rate})^{\text{house_age}}$$
 - o `__str__()`: this method will return house information details (Year house was built, location of house, price purchased and the current value)
 - o `Money_earned()`: That will return total money earned over years.

Main () Requirements:

- You will need to ask user for all house details (year built, price, current year, location) and save all information in an instance.
- You will also need to validate all user inputs (Year built, price of house, and current year). Note: Make sure that current year is not less than house-built year.
- After user input all information, you will need to display house info including the current value of the house.
- You will also need to display the profit of the house over years.

- Once done, ask the user if he/she wants to have another turn.

Output Sample:

```
Welcome to our house calculation app
Enter House model year: -1
Enter a valid Year
Enter House model year: 2020
Price of the house: 0
Enter a valid price
Price of the house: 350000
Current Year: 2000
Enter the correct current year
Current Year: 2022
Enter Your house Location:KS
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House Information:
  Year Built: 2020
  Purchase Price: 350000
  Current Value Of House: 408240
  Location: KS
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Total value you will earn :
58240
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Do you want to check price of another house?Y/N
```