ITEC 120 Lab 10
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You will need to turn in a lab report for this lab.

Problem 1: Point of sale system

Crazy Sales Inc. has hired you to write some software to run their cash register. The store gets its name because each item has a 20% chance of being sold 30% lower than the retail price. The reduction is given at checkout.

Part 1: Creating an Item

Each item that is sold has two specific properties: a name and a price. Write a class that stores these values and contains a constructor that initializes their values. Test it by creating at least two items in a driver class (the class that has a static void main) and printing out the description and price for each item.

Part 2: Selling an item by passing it as a parameter

Write a function that takes an Item created in the previous problem as a parameter and prints out its price after determining whether it is on sale or not.   You will need to use the random number generator to do this.

Part 3: Getting the Item's price with a function

Write a method in the Item class that returns the price of the item. Make sure that this function takes care of the 20% chance of being sold 30% lower than the retail price. Call this method on the items you created in part 1.

Problem 2: Fighting warriors

A warrior has a specific number of hit points (HP), and any value over 0 indicates they are alive. A warrior also deals a certain amount of damage, which reduces an enemies hit points by the same amount. Lastly, a warrior has armor, which reduces damage done to the warrior by a certain percentage. Write a class that represents a warrior with HP and damage stored as integers and armor stored as a double. Create at least two warriors in your main program to ensure that your class works.

Part 1: Battling warriors

Write a function that takes two warrior objects as parameters.   When warriors battle they each hit each other once (thus reducing the warrior's HP by the other warrior's damage, minus the amount of damage prevented by the armor they are wearing). For example, a warrior with 10 HP with armor of .5 that gets hit with 6 points of damage ends up having 3 damage taken away from their HP.

In the battle function, have the warriors hit each other until one or both of them die. Next, print out the warrior who lives, the warrior who dies, or if they both died.

Part 2: Gauging warriors

Write a function in the warrior class that takes a warrior as a parameter. It returns true if the warrior passed in will lose a battle between warriors, or false if the warrior on who the function was called will lose the battle or it is a draw.

Challenge Problem: Revisiting employees

Revisit the non-photo lab on 2D arrays and the employee problem. Create an object that represents an employee (i.e. a class that has an array of 7 doubles). Use this to store the data for the problem instead of a 2D array. Lastly, modify your code so that it uses the object when making calculations instead of the 2D array.