

CS 120: Object-Oriented Software Development(Spring 2022)

Project Feature: Merchants

Due Date: **Wednesday, April 27, 2022**

A Merchant is a Non-Player Character from whom the player can buy things. In order to support commerce, you need some way to manage the player having money. This feature assumes that you have already solved that problem, either through the CountableItem feature or some other technique.

1 Design

For each Merchant in your game, you need to make a list of the items sold by that merchant and their prices. This document assumes that a shop will not have multiple copies of an item – once you buy something, it will no longer be in stock. If that is not what you want, you will need to talk to us about it.

You also need to add GWTs for a new command: SHOP. This command expects the name of a Merchant that is in the current room, displays a menu of their stock, and allows the player to choose an item to buy. If the player does choose an item, and can afford to pay for it, the item moves from the merchant's stock to the player's inventory (or room if it would be too heavy), and the player pays its cost. Think about any other scenarios that can occur as well.

2 Implementation

1. Create a `Merchant` class that extends `Character`, with the following fields:
 - (a) A map of items the merchant has in stock to their prices.
2. Add the following methods to the `Merchant` class:
 - (a) One that adds a new item to the merchant's stock.
 - (b) One that gets the price of an item, by name.
 - (c) One that returns a `String` containing the names and prices of all items the merchant has in stock.
 - (d) One that removes an item, by name, from the merchant's stock and returns it.
3. Implement and test the SHOP command. Make sure that it includes the option for the player to decide to not buy anything.