Lemonade Stand

**Game Algorithm**

Game starts – rules appear – press enter to continue

(Select # of users)

Select length of play (at least 7 days) [Q: how to simulate the passing of time?]

Display Starting inventory = 0 cups, 0 sugar, 0 lemons, 0 ice; $20 (or whatever)

Display weather forecast (weather API for bonus)

Display day#

\*Purchase inventory (offer choices for how much to purchase, with different prices – set random prices within a range)

Set recipe (per pitcher) {16 8-ounce glasses per pitcher}

Set price (per glass)

Start game

(Customers walk by, some purchase lemonade, supplies dwindle, money accumulates)

Day ends

(either supplies run out or time runs out)

Supplies and $$ tallied for day (display inventory losses)\*\*

Purchase supplies again

Set recipe again

Set price again

Day 2 begins

(cycle through actions again)

Rinse and repeat

End: Display total income less expenses less remaining inventory to get final profit or loss

Play again or quit

**Classes**

Game (instantiates User Interface, Day, Player)

Variables

Methods

RunGame

User Interface

Variables

Methods

Day (instantiates weather, customers)

Variables

Number of days stand is open

Number of customers who pass by

Methods

DayBegins

Time elapses

DayEnds

Weather (instantiated by Day)

Variables

Temperature

precipitation

Methods

DisplayForecast

DisplayActualWeather

Customer (instantiated by Day)

Variables

price threshold

temperature threshold

(each customer will need a different combination of thresholds – how to code this?)

Methods

BuysLemonade

Player (human vs. human AND human vs. computer – bonus: inheritance) (instantiates recipe, money, inventory?)

Variables

Type

Methods

Buy supplies

Set price

Set recipe

Recipe (instantiated by Player)

Variables

Lemons per pitcher

Sugar per pitcher

Ice per pitcher

Cups per pitcher

Methods

Change recipe (or set recipe?)?

Money/cashbox/wallet (instantiated by Player)

Variables

Starting funds

Money spent

Price per cup

Cost per cup

Income

Profit/loss

Running tally

Methods

Calculate (Income – Cost of goods)

Store (where supplies come from)

Variables

Methods

Inventory (Use inheritance)

Variables

Lemons – count

Sugar – amount in cups

Ice cubes – count

Cups – count

Lemons – cost

Sugar – cost

Ice cubes – cost

Cups - cost

Methods

PurchaseLemons

PurchaseSugar

PurchaseIce

PurchaseCups

Use supplies

More