**Lemonade – Deliverables / Time Table**

* ~~Define Rules based on features~~
* ~~Determine game flow based on rules~~
  + Welcome
  + Name
  + Start money
  + Etc…
* ~~Break down game into sections~~
  + Welcome window
  + Determine funds
  + Make decisions
  + Etc…
* Determine classes
* Determine functions
  + Place functions
* member variables needed
* algorithms

**Game Rules**

* Game will last for a total of 7 days
* Each player starts out with a random number based on Randomized number based on their difficultly level.
  + Easy
  + Medium
  + Hard
* Each player decides regarding how much inventory they want to purchase.
  + Lemons
  + Sugar
  + Ice
  + Cups
* Each player decides on their recipe used at the beginning of the day.
  + Lemons
  + Sugar
  + Ice
  + Cups
* Each player will decide at the beginning of the day regarding how much lemonade they will make.
  + Each pitcher contains 10 cups of lemonade
* Each player will sell lemonade based on the factors such as.
  + Weather
  + Customer Probability
  + Price Point
  + Thirst
* Each player will have a limit on the total items that can be purchased daily.
* Each player must maintain a bank account with a balance over $.01.
* Each player will have a daily inventory count.
  + Inventory will spoil????
* Revenue will be maintained daily and customers will be able to see Net Income sales numbers.
* Revenue will be maintained throughout the game and customers will be able to see Net Income and sales numbers.
* Weather will change daily.
* Each player will can go bankrupt to end the game and start over.

**Game Flow**

* Welcome Screen is Displayed.
* Rules will be displayed.
* Players will be given the option to input their name
* Player selects their level mode (Easy – Medium – Hard)
  + Random Dollar amount is generated and placed in their bank account.
* Player selects the total number of days they want to play
* Weather generates into a list – ***NEEDED FOR ALGORITHM TO DETERMINE PROBABLY OF PURCHASE***
* Customers generated on each day based on weather

Game Loop

* Players will be given the option to go to the store.
* Players will be given the option to buy items.
  + Lemons
    - List Created for each instance of the Objects
  + Cups
    - List Created for each instance of the Objects
  + Ice
    - List Created for each instance of the Objects
  + Sugar
    - List Created for each instance of the Objects
* Price for each item will be determined and players confirm purchase.
* Inventory will be displayed.
* Players determine number of pitchers to be made.
  + Players determine recipe using ice, sugar, lemonade. ***- NEEDED FOR ALGORITHM TO DETERMINE PROBABLY OF PURCHASE***
* Player Inventory is adjusted based on decisions
* Players determine price point for each cup.
* Players try to sell lemonade
* A Total number of Customers for the day randomly generates and the probability of purchase varies on multiple factors
  + Weather
  + Customer Probability
  + Price Point
  + Thirst
* Customers purchase lemonade
* Player Inventory (Cups) is adjusted based on purchases
* Sales numbers are calculated.
* Transaction numbers are generated and displayed for the day
  + Net Profit/Less
  + Total Sales
* Transaction numbers are generated and displayed for the entire life of the lemonade stand
  + Net Profit/Less
  + Total Sales
* Inventory numbers are calculated and displayed
* Players given option to continue playing
* Loop back to the store

**Game Sections**

**Options Menu– Fourth Completed Dec 8th**

* Welcome Screen
* Rules
* Player Selection/Name
* Level Mode
* Go to the Store
* Store Option Menu
* Continue to Play / Bankrupt option
* Game Loop

**Inventory Management– First Completed Dec 4th**

* Item Purchasing
* Calculation of inventory after store
* Display Inventory
* Calculation of daily inventory after making lemonade
* Calculation of inventory after selling lemonade/using cups

**Lemonade Stand Operation – Second Completed Dec 5th**

* Determine number of pitchers
* Price Point determination
* **Customer Generation**
  + Algorithm for probabilities
    - For Generating customers
    - For generating likely hood of purchase
* Lemonade purchase

**Sales Tracking – Third Completed Dec 6th**

* Sales number calculation
* Transaction numbers are generated and displayed (Daily)
* Transaction numbers are generated and displayed (Lifetime)

**Debug/Testing – Last**

**Classes**

**Cups Of Lemonade – [[1]](#endnote-1)**

* Class Responsibilities
  + **Function:** Create **Sale Price** will be associated
  + **Function:** **Sale Price** added to **player bank**

**Customers –[[2]](#endnote-2)**

* Class Responsibilities
  + **Function:** Generated Customer based on weather list
  + **Function:** Generated ***Probability*** for purchase

**Day –[[3]](#endnote-3)**

* Class Responsibilities
  + **Function:** Provides player with a choice for days played.

**Game –**

* Class Responsibilities
  + **Function:** Run the Game Loop

**Inventory –**

* Class Responsibilities
  + **Function:** Calculation of Inventory (Daily)
    - Uses the **List of Lemons**
    - Uses the **List** of Cups
    - Uses the **List of Ice**
    - Uses the **List of Sugar**
  + **Function:** Calculation of Inventory (Lifetime)
  + **Function:** Display Inventory (Daily)
  + **Function:** Display Inventory (Lifetime)

**Lemonade Pitcher –**

* Class Responsibilities
  + **Function:** Create **List of Cups which have 10 per** Lemonade Pitcher
  + **Function:** Select Item for Recipe
    - Lemons
    - Cups
    - Ice
    - Sugar
  + **Function:** Calculation of Inventory used for Recipe

**Player – (Parent Abstract Class)**

* Class Responsibilities
  + **Function:** **Name** the Players

**Human Player – Child Class**

* Class Responsibilities
  + **From Parent Class - Function:** **Name** the Players
  + **Function:** Add to **player bank**
  + **Function:** Display **player bank**

**Program –**

* Class Responsibilities

**Recipe –**

* Class Responsibilities
  + **Function:** Selection of “Item” for Purchase
    - Above “Item” would be for the following. Should be able to use one function to select each item because it shouldn’t matter what the function is purchasing.
  + **Function:** Selection of “Item” for Purchase

**Lemonade Sales–**

* Class Responsibilities
  + **Function:** Selection of “Item” for Purchase
  + **Function:** Calculate Sales (Daily)
  + **Function:** Calculate “Sales List” (Daily)
  + **Function:** Display “Sales List” (Daily)
  + **Function:** Display “Sales List” (Lifetime)

**Store –**

* Class Responsibilities
  + **Function:** Selection of “Item” for Purchase
    - Above “Item” would be for the following. Should be able to use one function to select each item because it shouldn’t matter what the function is purchasing.
    - **Function:** Selection of Lemons for Purchase
    - **Function:** Selection of Cups for Purchase
    - **Function:** Selection of Ice for Purchase
    - **Function:** Selection of Sugar
  + **Function:** Confirm Purchase
    - Should be able to use one function to purchase each item because it shouldn’t matter what the function is purchasing.

**User Interface –**

* Class Responsibilities
  + **Function:** Given Option to Go to Store
  + **Function:** Display Welcome Screen
  + **Function:** Display the Rules
  + **Function:** Welcome Screen
  + **Function:** Select Game Level
  + **Function:** Restart Game Choice
  + **Function:** Restart Game

**Weather –**

* Class Responsibilities
  + **Function:** Generate list of weather for the days played

**Lemon –**

* Class Responsibilities
  + **Function:** Create **List** of Lemons purchased

**Cups –**

* Class Responsibilities
  + **Function:** Create **List** of Lemons purchased

**Ice –**

* Class Responsibilities
  + **Function:** Create **List** of Ice purchased

**Sugar –**

* Class Responsibilities
  + **Function:** Create **List** of Sugar purchased

1. Class Added by Game Designer [↑](#endnote-ref-1)
2. Class Determined Accurately Per Recommendations [↑](#endnote-ref-2)
3. Class Not Accurately Determined Per Recommendations [↑](#endnote-ref-3)