



Milestone 6

CST-135

Gary Davis

Nathaniel Kumar

Jesse Gardner

Alondra Dominguez Ramirez

Deliverables

CSV Files

- Create a CSV file with the contents of the inventory of the vending machine

GUI for a Manager

- Design a user interface that handles multiple vending machines.

Global Inventory Management

- Read all the CSV files into an array of objects, where each object is an instance of the product class
- Recursively sort the object array by item name and quantity.
- Recursively search for an item by name. When found return its location and quantity.
- Generate a text document that shows the call stack for the recursive search.

Restock class

- Read the data for each vending machine.
- Generate a purchase order for each vending machine, including: the name of the machine, the name of the item, the quantity to order, and the total cost.

Integration of updated classes with existing project components

Create ReadMe file

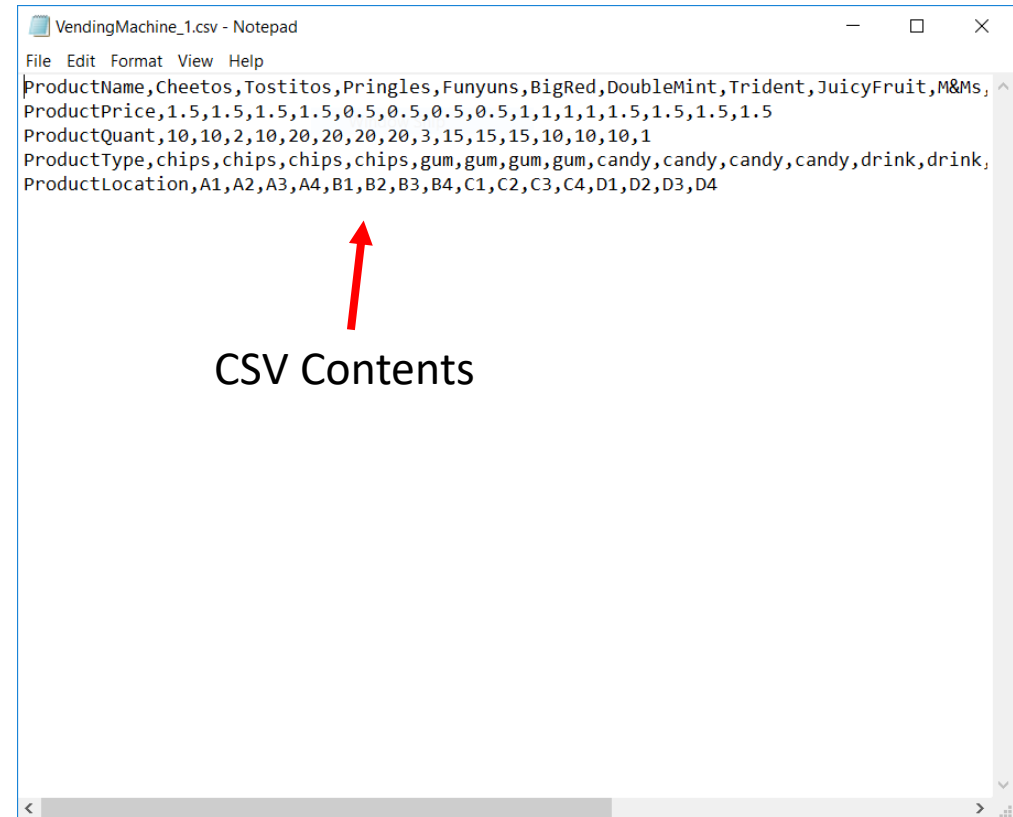
Welcome Screen with Category buttons

- This Screen appears every time the application is launched, or the Home/ Welcome button is clicked.



Create CSV Files

- Create csv files that will contain all the information needed to populate multiple vending machines.
- 3 CSV files were created for 3 different vending machines
- CSV contents
 - Product Name
 - Product Price
 - Product Quantity
 - Product Type
 - Product Location

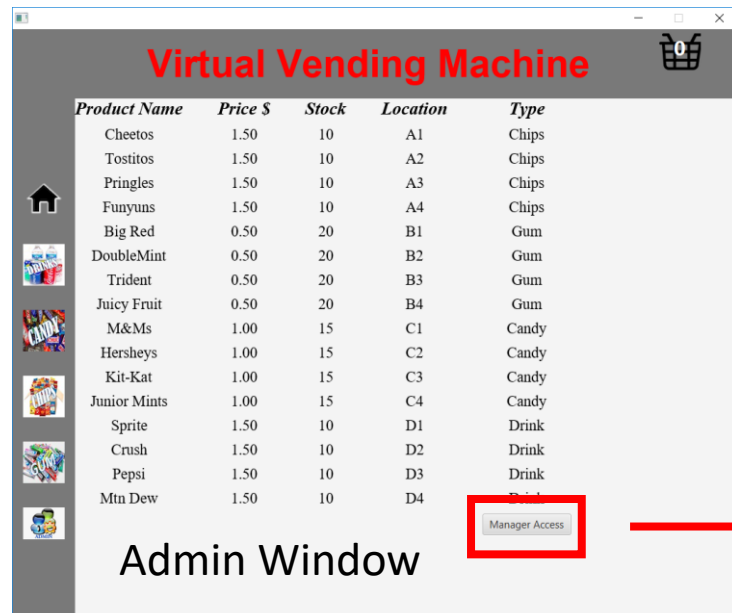


```
File Edit Format View Help
ProductName,Cheetos,Tostitos,Pringles,Funyun,BigRed,DoubleMint,Trident,JuicyFruit,M&Ms,
ProductPrice,1.5,1.5,1.5,1.5,0.5,0.5,0.5,0.5,1,1,1,1,1.5,1.5,1.5
ProductQuant,10,10,2,10,20,20,20,20,3,15,15,15,10,10,10,1
ProductType,chips,chips,chips,chips,gum,gum,gum,gum,candy,candy,candy,candy,drink,drink,
ProductLocation,A1,A2,A3,A4,B1,B2,B3,B4,C1,C2,C3,C4,D1,D2,D3,D4
```

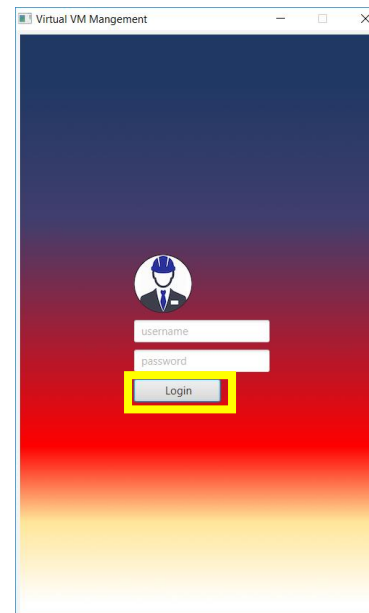
CSV Contents

Manager GUI

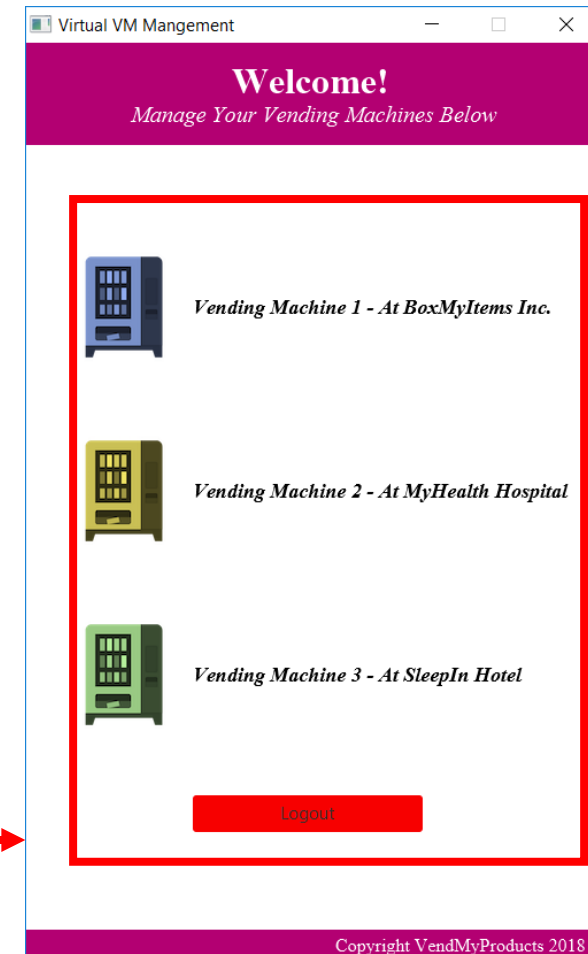
- The Manager GUI can be access by going to Admin and clicking the “Manager Access” Button.
- Enter the username and password (not set), click “Login”.
- Welcome window, select vending machine or Logout



Manager Login



Welcome Window

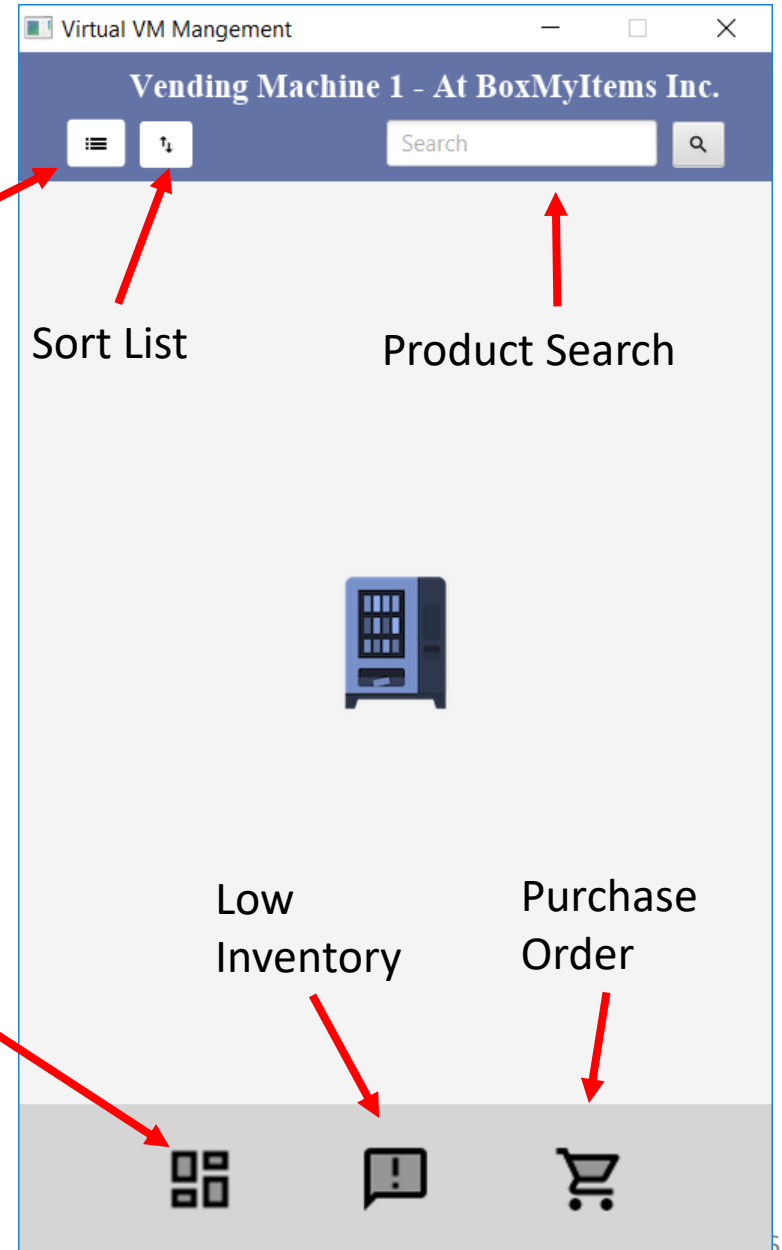


Manager GUI Continued

- **Vending Machine Options**

- **Populate Item List Button**
 - Adds the csv contents to the window
- **Sort List Button**
 - Sorts the populated list alphabetically
- **Search textbox and button**
 - Searches all the vending machines for product and displays the item details if found.
- **Back to Vending Machine Menu Button**
 - Returns the users to the list of vending machines/ logoff
- **Low Inventory Button**
 - Displays items with a quantity of less than or equal to 3
- **Auto generated Purchase Order Button**
 - Populated list with items that need to be ordered (less than max quantity).

Item List



Sort List

Product Search

Vending
Machine
Menu

Low
Inventory

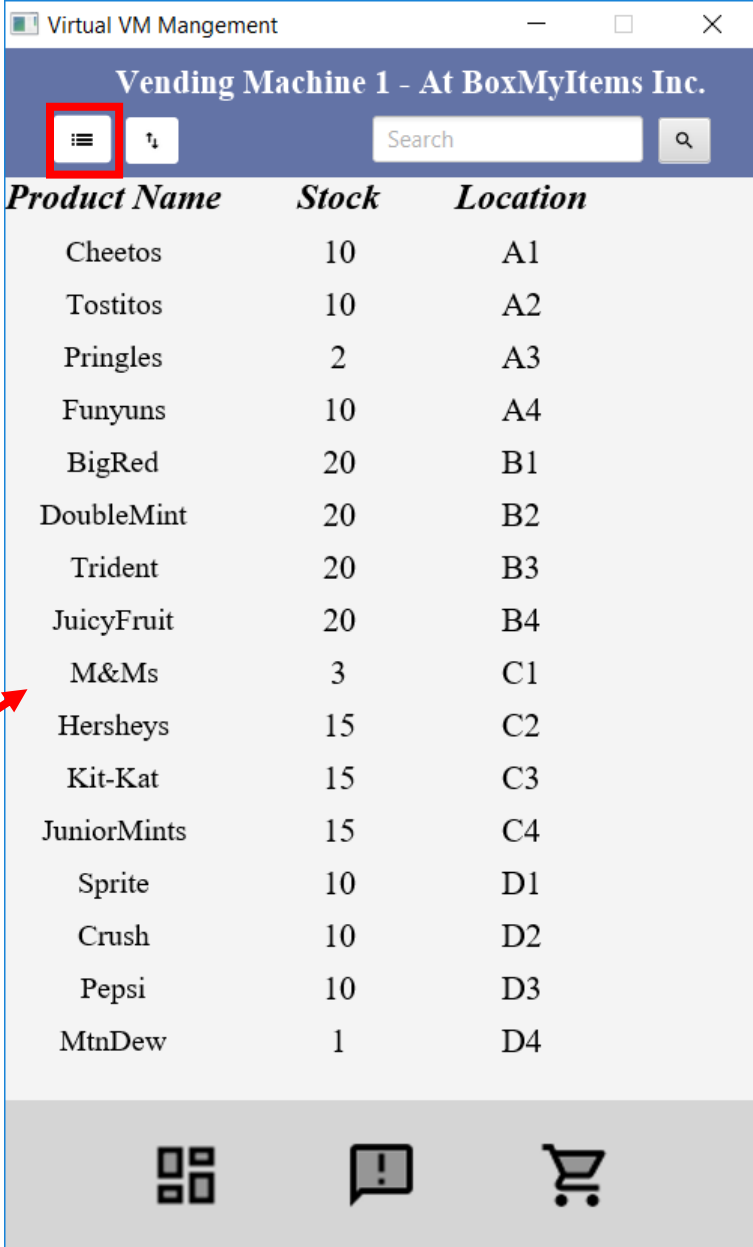
Purchase
Order

Manager GUI Item List

- **Item List Button**

- All the csv contents for the vending machine will be populated in the order it was added to the CSV file.
- The list will display the “Product Name”, “Stock” and “Location”.

Vending Machine
items created
from the CSV file

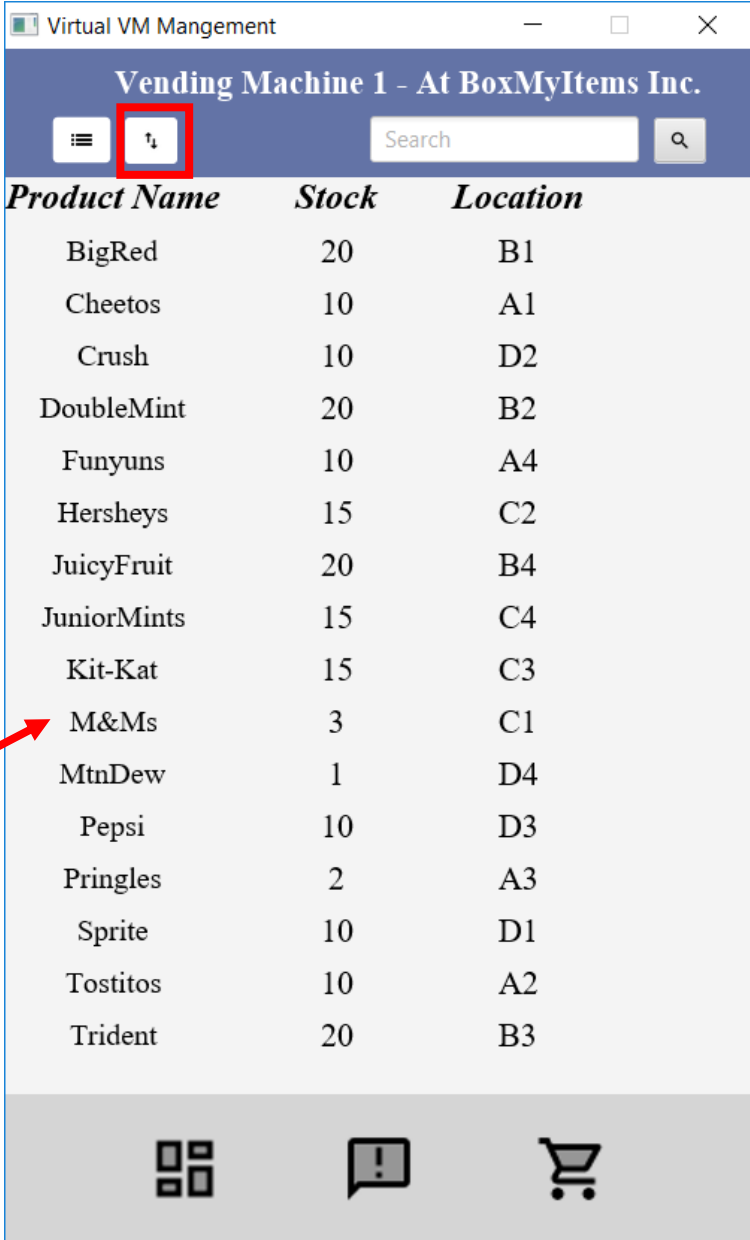


Product Name	Stock	Location
Cheetos	10	A1
Tostitos	10	A2
Pringles	2	A3
Funyuns	10	A4
BigRed	20	B1
DoubleMint	20	B2
Trident	20	B3
JuicyFruit	20	B4
M&Ms	3	C1
Hersheys	15	C2
Kit-Kat	15	C3
JuniorMints	15	C4
Sprite	10	D1
Crush	10	D2
Pepsi	10	D3
MtnDew	1	D4

Manager GUI Item Sort

- **Item Sort Button**
 - Sorts the items in alphabetical order
 - The list will display the “Product Name”, “Stock” and “Location”.

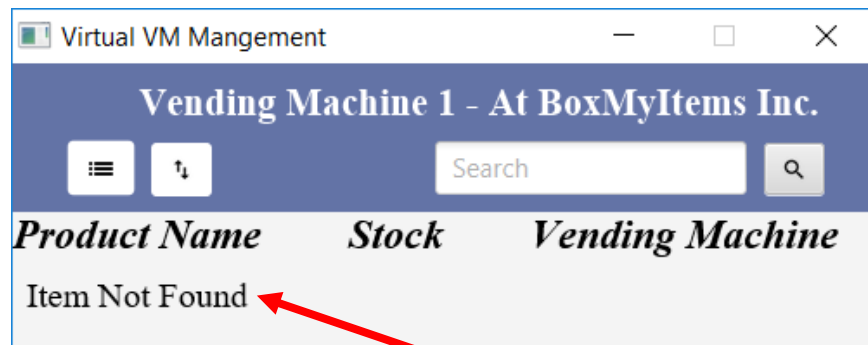
Vending Machine
items sorted



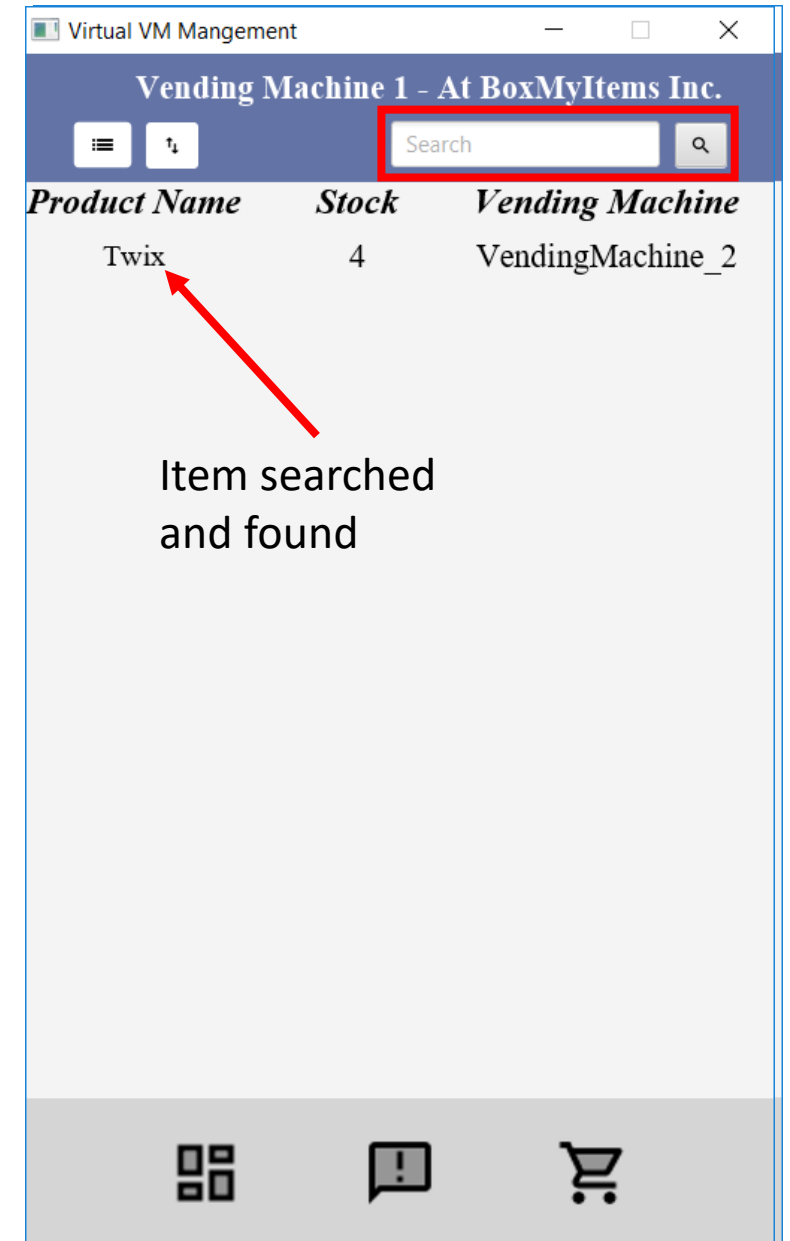
<i>Product Name</i>	<i>Stock</i>	<i>Location</i>
BigRed	20	B1
Cheetos	10	A1
Crush	10	D2
DoubleMint	20	B2
Funyuns	10	A4
Hersheys	15	C2
JuicyFruit	20	B4
JuniorMints	15	C4
Kit-Kat	15	C3
M&Ms	3	C1
MtnDew	1	D4
Pepsi	10	D3
Pringles	2	A3
Sprite	10	D1
Tostitos	10	A2
Trident	20	B3

Manager GUI Item Search

- **Item Search Button**
 - Searches all the vending machines for the user requested product name.
 - The list will display the “Product Name”, “Stock” and “Vending Machine”.
 - The results will be displayed in any vending machine window (Example: search completed in vending machine 1 but found in vending machine 2)
 - If the item is not found, the window will display “Item Not Found”



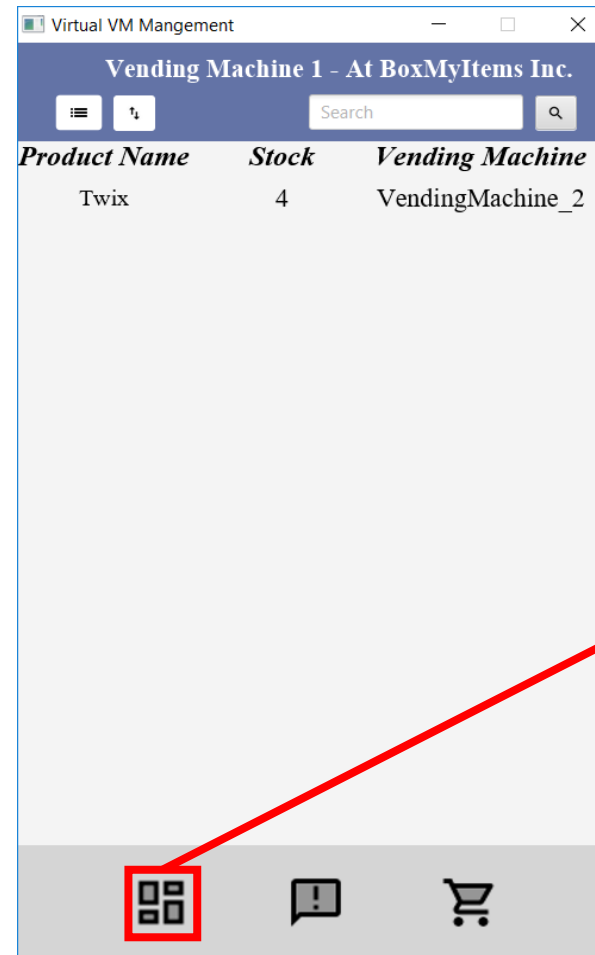
Item Not Found



Item searched
and found

Manager GUI Return VM Menu

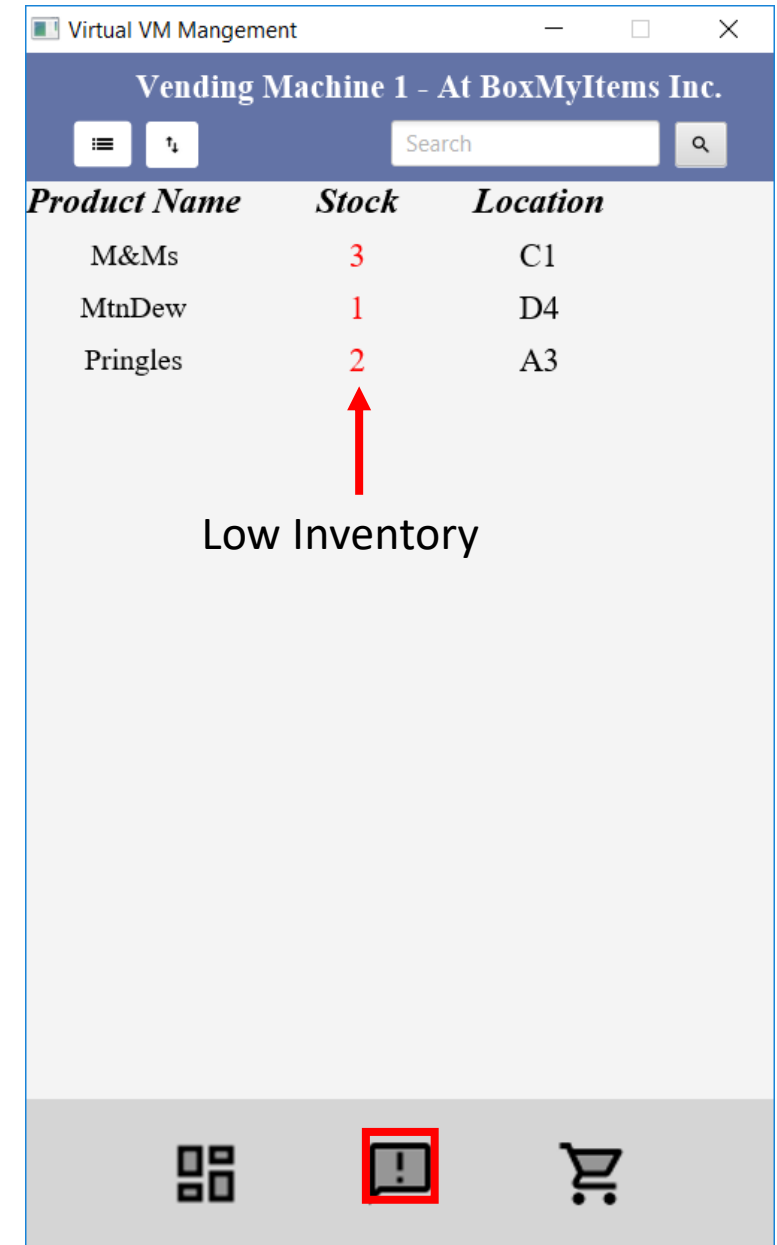
- **Return to Vending Machine List**
 - This will take you back to the list of vending machines where you can select a new vending machine or logoff



Manager GUI Low Inventory

- **Low Inventory Button**

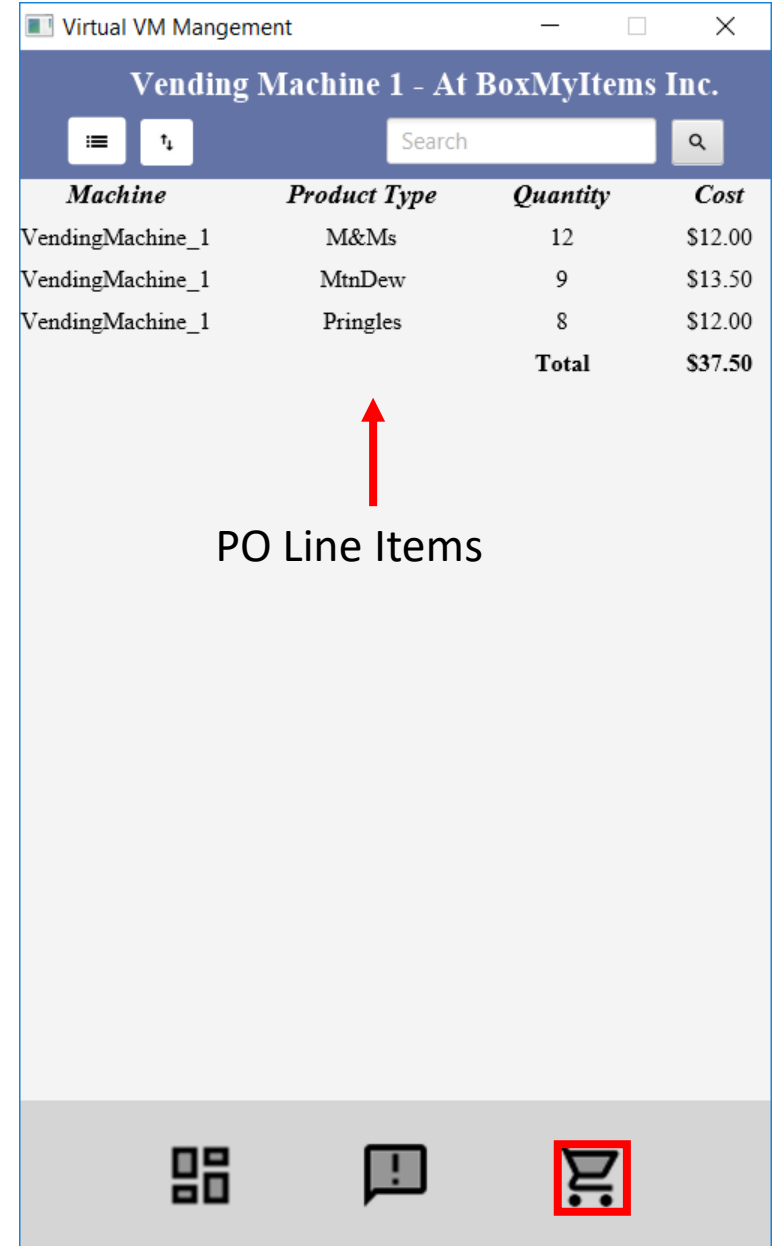
- Displays the items that have a quantity equal to or less than 3.
- The low quantity will be displayed in red font.
- The list will display the “Product Name”, “Stock” and “Location”.



Manager GUI Purchase Order

- **Purchase Order Button**

- A list will be populated with items that have less than a maximum quantity.
- The line item total will be displayed.
- The subtotal will be displayed for the cost of all items in the PO.
- The list will display the “Machine”, “Product”, “Quantity” and “Cost”.



Virtual VM Management

Vending Machine 1 - At BoxMyItems Inc.

Search

Machine	Product Type	Quantity	Cost
VendingMachine_1	M&Ms	12	\$12.00
VendingMachine_1	MtnDew	9	\$13.50
VendingMachine_1	Pringles	8	\$12.00
Total			\$37.50

PO Line Items

Shopping Cart Icon

ReadMe

- The purpose of this application is to be used as virtual vending machine. This week there was user interface created for a manager of multiple vending machines. This is why a couple of CSV files were created that could be used in different places such as a hotel, any companies, and a hospital depending on the items that were listed.
- There was also two more classes added on to the program. One of the classes was `Global_Inventory_Management`, this class is what helps the user search an item by name and reads the files into the specific arrays. The other class is called `Restock` and the purpose for this class is a way that vending machine lets you know when the inventory is running low on certain items and needs to be filled again. This is also a great way to manage the sells and to know what product sells the most.

Supplemental Slides Below

Item Selection with Animation

- The user will increase or decrease the quantity of the desired product.
- They will click “Add to Cart” button to add the item to the cart. The cart icon will increase by one (line item) and an animated box will drop into the cart.
- If they change their mind and change the quantity back to zero, the item will be removed from the cart.
- Once the user is ready to review their order, they will click the “Go to Cart” button.

Line Item Count and Box Dropping Animation

The screenshot shows a web application titled "Virtual Vending Machine". It features a table with columns: Product Name, Price \$, Stock, Location, and Quantity. The table lists four products: Crush, Mtn Dew, Pepsi, and Sprite. Each product has a corresponding "Add to Cart" button. A red arrow points to the "Add to Cart" button for Sprite, which is highlighted in blue. Another red arrow points to the "Go to Cart" button. A third red arrow points to the cart icon in the top right corner. A fourth red arrow points to the "Stock" column header. A fifth red arrow points to the "Quantity" column header. A sixth red arrow points to the "Add to Cart" button for Sprite. A seventh red arrow points to the "Go to Cart" button. A label "Items Added to Cart" is positioned next to the "Add to Cart" button for Sprite.

Product Name	Price \$	Stock	Location	Quantity	
Crush	1.50	10	D2	0	Add to Cart
Mtn Dew	1.50	10	D4	0	Add to Cart
Pepsi	1.50	10	D3	0	Add to Cart
Sprite	1.50	8	D1	2	Add to Cart

Stock Increases or Decreases based on Quantity

Quantity can Increase or Decrease

Items Added to Cart

Go to Cart

Inventory: Stock Decrease

- Upon increasing the product quantity, the stock decreases.

Product Name	Price \$	Stock	Location	Quantity
Crush	1.50	10	D2	0
Mtn Dew	1.50	10	D4	0
Pepsi	1.50	10	D3	0
Sprite	1.50	10	D1	0

Pre Selection
Stock = Max
Quantity = 0



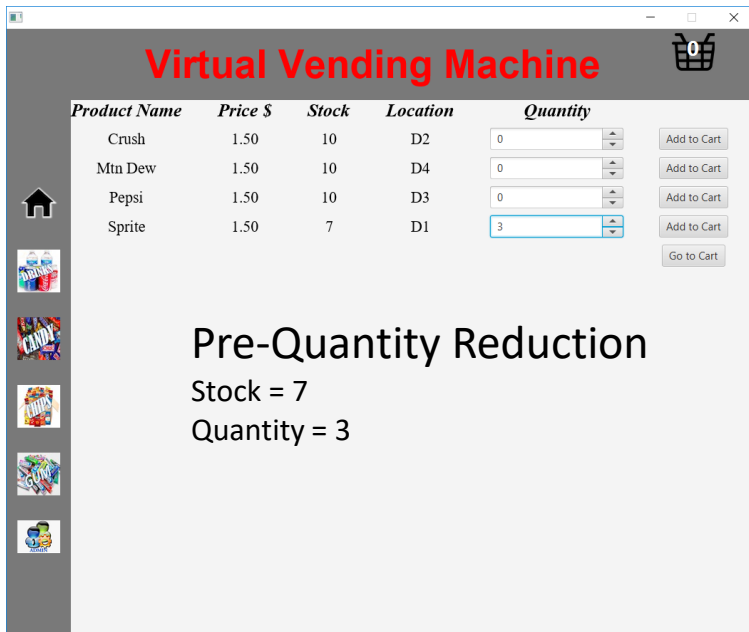
Product Name	Price \$	Stock	Location	Quantity
Crush	1.50	10	D2	0
Mtn Dew	1.50	10	D4	0
Pepsi	1.50	10	D3	0
Sprite	1.50	7	D1	3

Stock Decreased

Quantity Increased

Inventory: Stock Increase

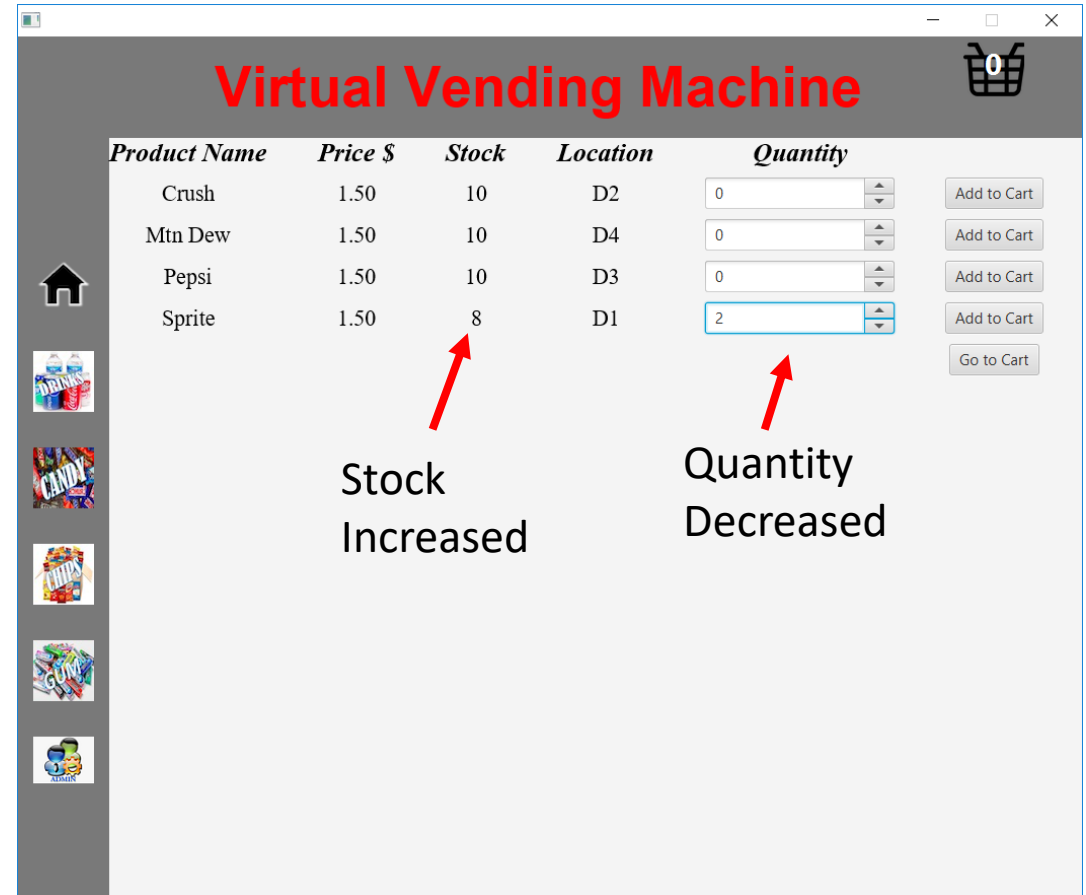
- Upon decreasing the product quantity, the stock increases.



Virtual Vending Machine

Product Name	Price \$	Stock	Location	Quantity
Crush	1.50	10	D2	0
Mtn Dew	1.50	10	D4	0
Pepsi	1.50	10	D3	0
Sprite	1.50	7	D1	3

Pre-Quantity Reduction
Stock = 7
Quantity = 3



Virtual Vending Machine

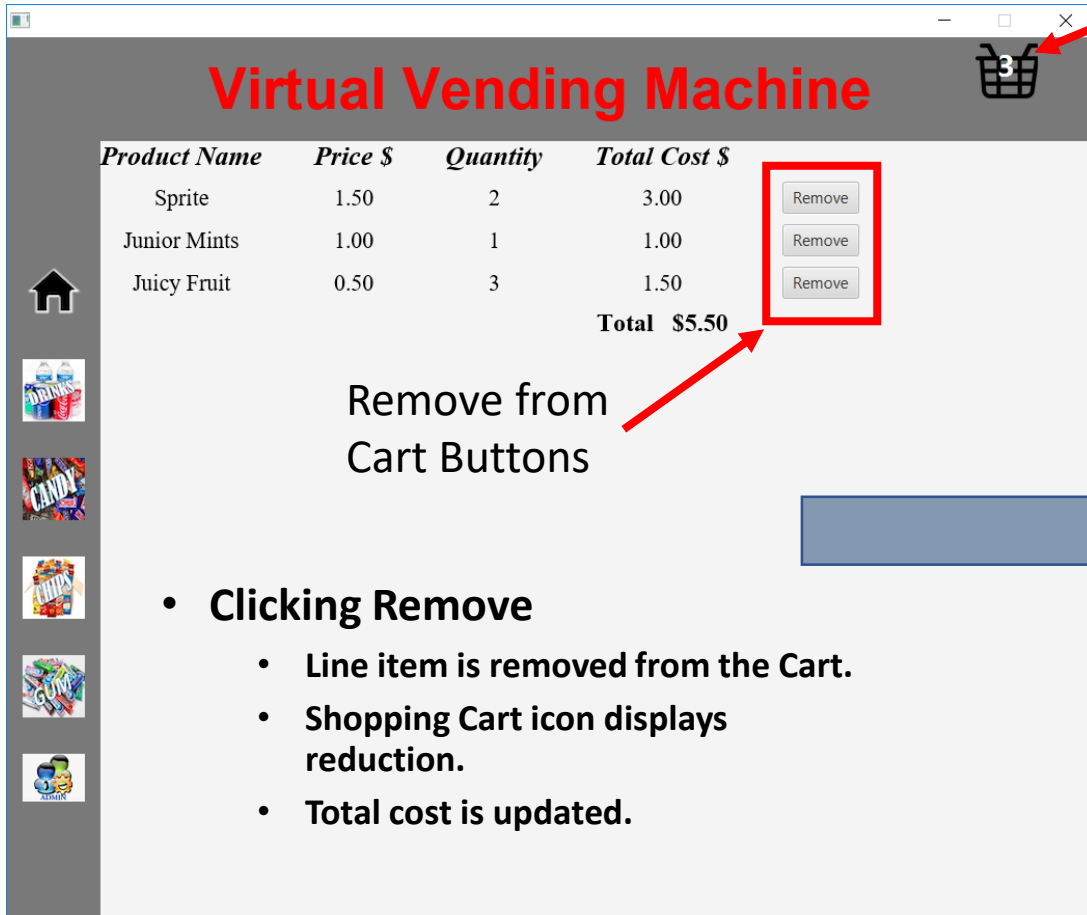
Product Name	Price \$	Stock	Location	Quantity
Crush	1.50	10	D2	0
Mtn Dew	1.50	10	D4	0
Pepsi	1.50	10	D3	0
Sprite	1.50	8	D1	2

Stock Increased

Quantity Decreased

Additional Event (Remove from Cart)

Cart Line Items Change

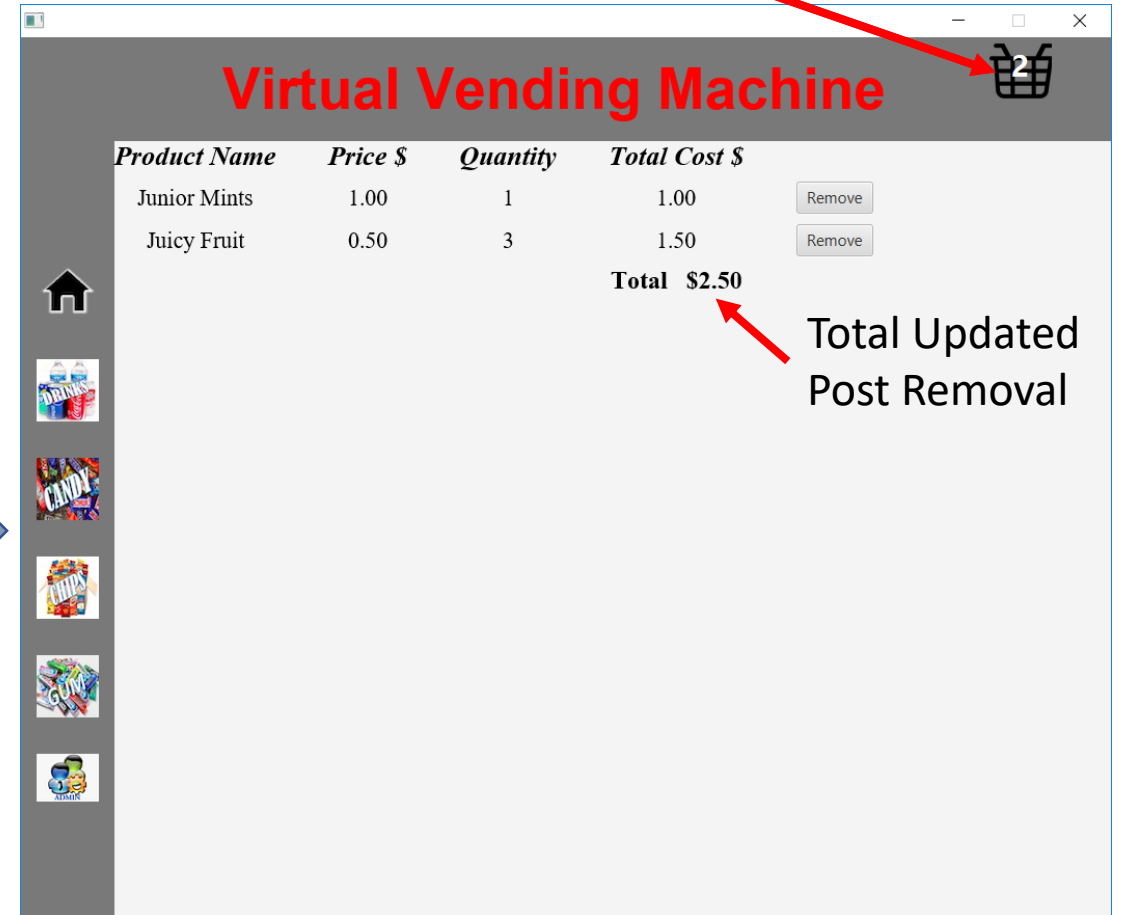


Virtual Vending Machine

Product Name	Price \$	Quantity	Total Cost \$
Sprite	1.50	2	3.00
Junior Mints	1.00	1	1.00
Juicy Fruit	0.50	3	1.50
Total			\$5.50

Remove from Cart Buttons

- Clicking Remove
 - Line item is removed from the Cart.
 - Shopping Cart icon displays reduction.
 - Total cost is updated.



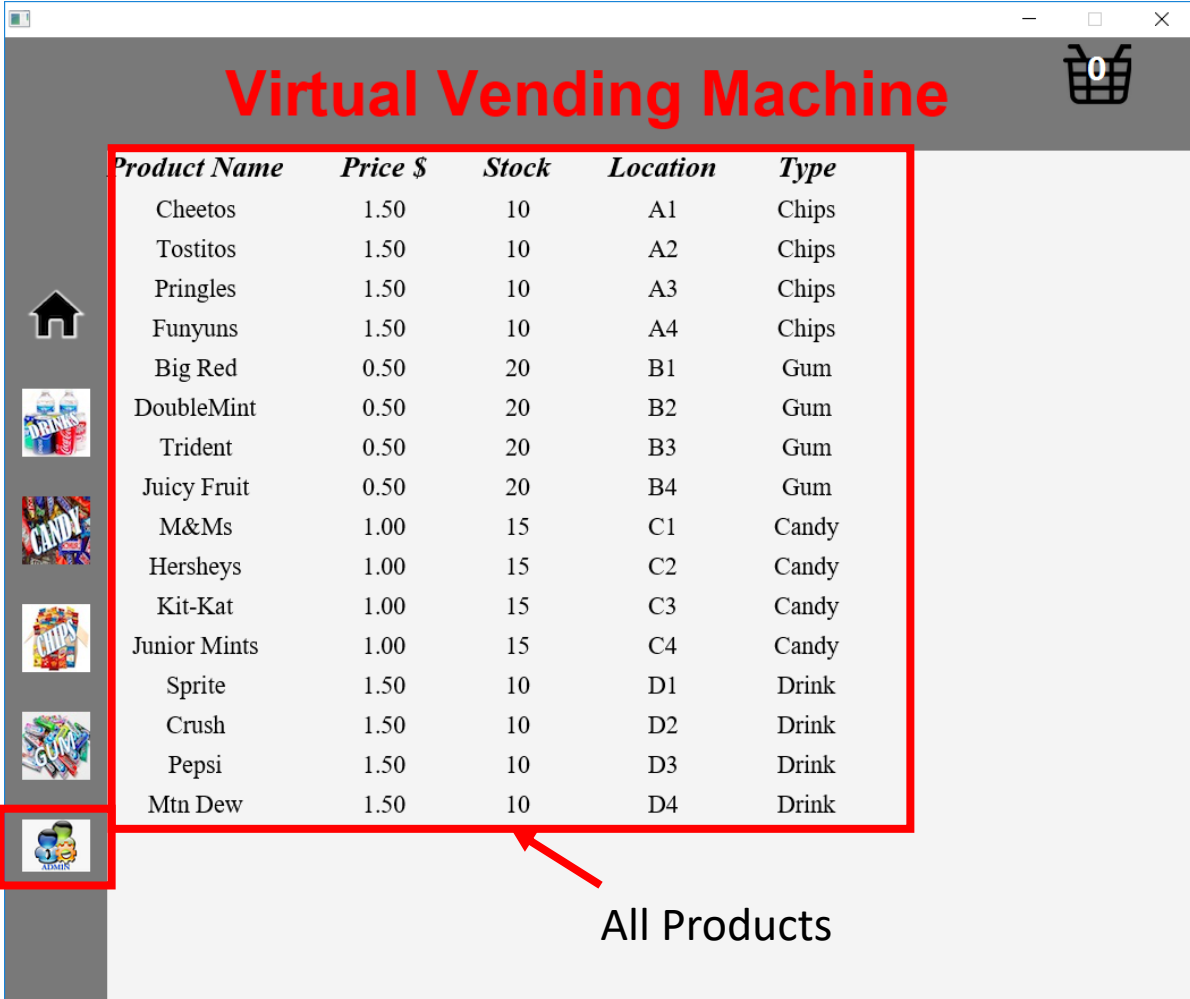
Virtual Vending Machine

Junior Mints	1.00	1	1.00
Juicy Fruit	0.50	3	1.50
Total			\$2.50

Total Updated Post Removal

Admin / Service Display

- **Admin/Service Button**
 - Upon clicking, the entire inventory will be displayed.



The screenshot shows a web application titled "Virtual Vending Machine". On the left is a sidebar with icons for Home, Drinks, Candy, and a button labeled "Admin/Service" which is highlighted with a red box and an arrow. The main area displays a table of products. A red box highlights the entire table, with an arrow pointing to it from the label "All Products".

Product Name	Price \$	Stock	Location	Type
Cheetos	1.50	10	A1	Chips
Tostitos	1.50	10	A2	Chips
Pringles	1.50	10	A3	Chips
Funyuns	1.50	10	A4	Chips
Big Red	0.50	20	B1	Gum
DoubleMint	0.50	20	B2	Gum
Trident	0.50	20	B3	Gum
Juicy Fruit	0.50	20	B4	Gum
M&Ms	1.00	15	C1	Candy
Hersheys	1.00	15	C2	Candy
Kit-Kat	1.00	15	C3	Candy
Junior Mints	1.00	15	C4	Candy
Sprite	1.50	10	D1	Drink
Crush	1.50	10	D2	Drink
Pepsi	1.50	10	D3	Drink
Mtn Dew	1.50	10	D4	Drink

Order Review

- Each line item will have a total cost.
 - $\text{Item Price} * \text{Item Quantity} = \text{Item Total Cost}$
- The total purchase cost will also be displayed.
 - Sum of all line items.
- Items can be removed by going back to the category and setting the item to zero or clicking the remove button.

Remove Item Button

Virtual Vending Machine

Product Name	Price \$	Quantity	Total Cost \$
Junior Mints	1.00	1	1.00
Juicy Fruit	0.50	3	1.50
Total			\$2.50

Total Cost of Line item.

Total Cost of all Line items.