

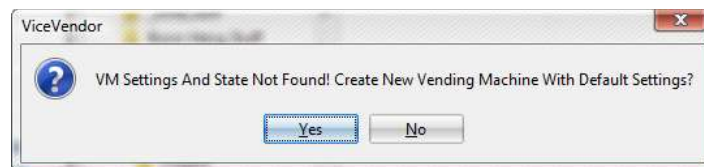
## Introduction

This software aims to be a simulation of a vending machine. It features the ability to create your own vending machine with the properties (number of shelves, etc.) you desire. In addition, you can do the following:

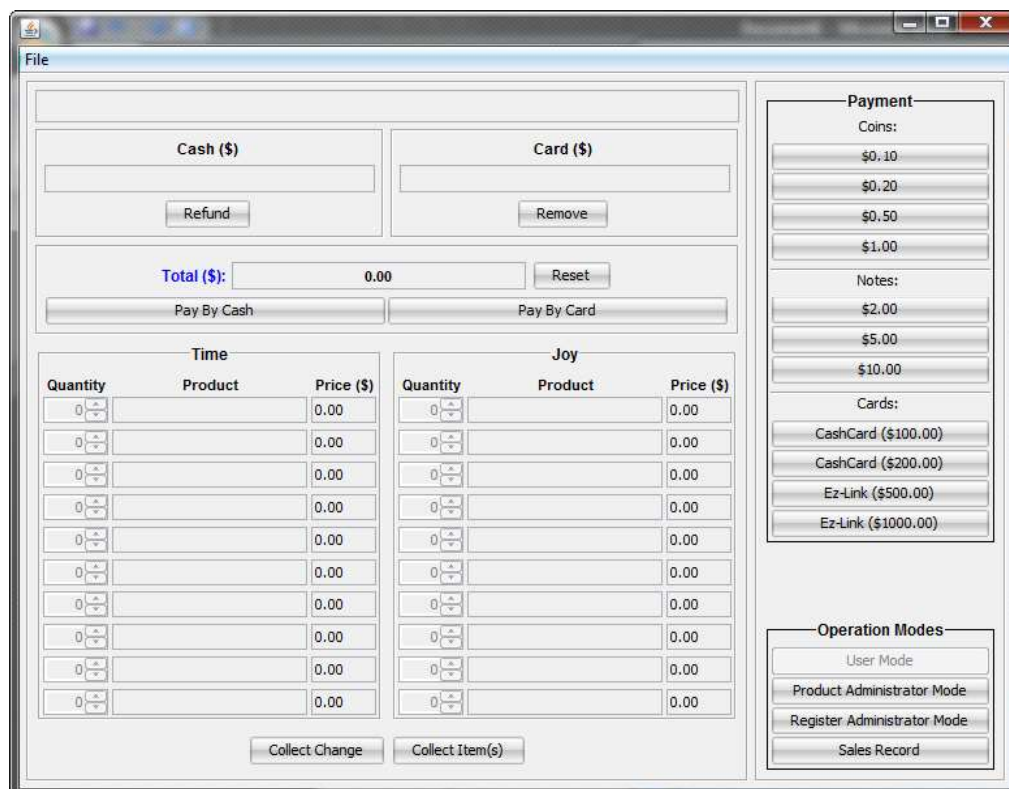
- Add/Remove product stock.
- Rename product name.
- Add/Remove money.
- Payment by card or cash.
- Collect your items/change.

## Getting Started

The very first time you start up the application, you will get the following prompt:



If you select “Yes”, the vending machine will start with the default settings, and you will see the following screen:



Notice that majority of the buttons are not enabled. This is because you currently have no products.

## Adding/Removing Products

To add a product, click on the “Product Administrator Mode” button you see on the bottom right. You will then be presented with the following screen:

The screenshot displays the 'Product Administrator Mode' window of the vending machine software. The interface is divided into several sections:

- Payment Section:** Includes input fields for 'Cash (\$)' and 'Card (\$)', a 'Refund' button, and a 'Remove' button. Below these is a 'Total (\$)' field showing '0.00' with a 'Reset' button. At the bottom of this section are 'Pay By Cash' and 'Pay By Card' buttons.
- Product Lists:** Two tables are shown side-by-side for 'Time' and 'Joy' products. Each table has columns for 'Quantity' (with a spinner), 'Product' (text input), and 'Price (\$)' (with a spinner). The 'Time' table has 10 rows, and the 'Joy' table has 10 rows. All quantities are set to 0 and prices to 0.00.
- Buttons:** At the bottom of the product lists are 'Collect Change' and 'Collect Item(s)' buttons.
- Payment Options:** A section on the right titled 'Payment' includes 'Coins' (\$0.10, \$0.20, \$0.50, \$1.00), 'Notes' (\$2.00, \$5.00, \$10.00), and 'Cards' (CashCard (\$100.00), CashCard (\$200.00), Ez-Link (\$500.00), Ez-Link (\$1000.00)).
- Operation Modes:** A section at the bottom right contains buttons for 'User Mode', 'Product Administrator Mode' (which is currently selected), 'Register Administrator Mode', and 'Sales Record'.

You may start typing in the product name, as well as set the quantity and price for the product. It is not possible to add a new row of product as this models a real vending machine. However, it is possible to leave the product name blank, as well as the price as \$0.00. As long as the product is not out of stock, it will be available for purchasing. Also, you may leave any number of shelves blank.

To remove a product, simply set its quantity to 0 and price to 0, and leave the product name blank.

Once done, you may either click on “User Mode” to buy products, or “Register Administrator Mode” to see how much money is currently in the machine.

## Adding/Removing Money

To see, as well as to change, the amount of money currently inside the machine, click on “Register Administrator Mode” at the bottom right of the application. Once done, you will be presented with the following:

Coins			Notes		
Quantity	Value (\$)	Total (\$)	Quantity	Value (\$)	Total (\$)
100	0.10	10.00	100	2.00	200.00
100	0.20	20.00	100	5.00	500.00
100	0.50	50.00	100	10.00	1000.00
100	1.00	100.00			

The types of coins and notes (values) cannot be changed (once a vending machine) has been created. However, you can change the quantity of each type. The total amount for each value and the overall total amount that is seen will be updated as you add or remove money. Once done, you may click on any of the operation modes to continue.

## Viewing Sales Record

Clicking on the “Sales Record” button will present you with the following screen:

The screenshot displays the Vending Machine Software Interface. The window has a title bar with standard Windows controls. The main area is divided into several sections:

- File**: A menu bar at the top left.
- Cash (\$)**: A section with a text input field and a **Refund** button.
- Card (\$)**: A section with a text input field and a **Remove** button.
- Total (\$)**: A section showing **0.00** with a **Reset** button.
- Pay By Cash** and **Pay By Card**: Two buttons for payment selection.
- Sales Record**: A section containing **Print Sales Record** and **Reset Sales Record** buttons, and a large empty rectangular area for the record.
- Payment**: A sidebar on the right with sections for **Coins** (\$0.10, \$0.20, \$0.50, \$1.00), **Notes** (\$2.00, \$5.00, \$10.00), and **Cards** (CashCard (\$100.00), CashCard (\$200.00), Ez-Link (\$500.00), Ez-Link (\$1000.00)).
- Operation Modes**: A sidebar on the right with buttons for **User Mode**, **Product Administrator Mode**, **Register Administrator Mode**, and **Sales Record**.
- Collect Change** and **Collect Item(s)**: Two buttons at the bottom center.

You may then print your sales record to paper, or reset the sales record. The above sales record is blank as nothing has been purchased yet.

## Buying Products

### Selecting Products & Making Payment

Assuming that you have already added in your products (please refer to Getting Started if you need help), you may now purchase products by going to “User Mode”. Simply key in or increase the amount of the products that you wish to purchase. You may also insert your money or cash card first. Take note that you can only select up to the number of available stock for each product.

You might notice that once you insert a card, the rest of the cards are disabled. To insert another card, please first remove the existing card. Also, after each successful purchase using a card, the value of the card will be reflected and updated.

If you have sufficient cash or card value, you will get the following:

The screenshot displays the Vending Machine Software Interface. It features a 'File' menu at the top left. The main area is divided into several sections:

- Cash (\$)**: A text box showing '90.00' and a 'Refund' button below it.
- Card (\$)**: A text box showing '100.00' and a 'Remove' button below it.
- Total (\$)**: A text box showing '70.70' and a 'Reset' button to its right.
- Payment Method**: Two buttons, 'Pay By Cash' and 'Pay By Card'.
- Beer**: A table with columns 'Quantity', 'Product', and 'Price (\$)'. It lists various beer products like Carlsberg, Tiger Beer, Amsterdam, Heineken, Baron, Guinness Stout, Hoegaarden, San Miguel, and Erdinger.
- Cigarettes**: A table with columns 'Quantity', 'Product', and 'Price (\$)'. It lists various cigarette products like Marlboro Reds, Marlboro Lights, Marlboro Menthol, Marlboro Menthol Lights, Lucky Strike, Viceroy Reds, Viceroy Lights, Viceroy Menthol, and Viceroy Menthol Lights.
- Payment Section**:
  - Coins**: Buttons for \$0.10, \$0.20, \$0.50, and \$1.00.
  - Notes**: Buttons for \$2.00, \$5.00, and \$10.00.
  - Cards**: Buttons for CashCard (\$100.00), CashCard (\$200.00), Ez-Link (\$500.00), and Ez-Link (\$1000.00).
- Operation Modes**: Buttons for 'User Mode', 'Product Administrator Mode', 'Register Administrator Mode', and 'Sales Record'.

At the bottom, there are two buttons: 'Collect Change' and 'Collect Item(s)'.

If you have insufficient cash or card value, the one that is insufficient will be highlighted in red, and attempting to purchase it will result in an error message, as shown below:

**THERE IS INSUFFICIENT CASH TO DEDUCT FROM**

Cash (\$)	Card (\$)
19.00	100.00

Refund Remove

Total (\$): 70.70 Reset

Pay By Cash Pay By Card

Beer			Cigarettes		
Quantity	Product	Price (\$)	Quantity	Product	Price (\$)
4	Carlsberg	6.00	0	Marlboro Reds	12.00
0	Tiger Beer	4.00	0	Marlboro Lights	12.50
0	Amsterdam	8.90	1	Marlboro Menthol	12.30
0	Heineken	6.20	0	Marlboro Menthol Lights	12.40
0	Baron	8.50	0	Lucky Strike	12.80
0	Guinness Stout	9.80	0	Viceroy Reds	13.00
0	Hoegaarden	13.30	2	Viceroy Lights	11.00
0	San Miguel	11.80	1	Viceroy Menthol	12.40
0	Erdinger	12.50	0	Viceroy Menthol Lights	11.85
0		0.00	0		0.00

Collect Change Collect Item(s)

**Payment**

Coins:

- \$0.10
- \$0.20
- \$0.50
- \$1.00

Notes:

- \$2.00
- \$5.00
- \$10.00

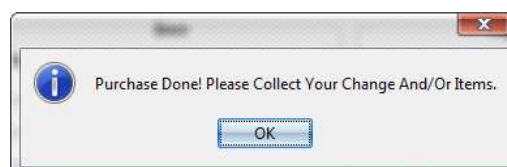
Cards:

- CashCard (\$100.00)
- CashCard (\$200.00)
- Ez-Link (\$500.00)
- Ez-Link (\$1000.00)

**Operation Modes**

- User Mode
- Product Administrator Mode
- Register Administrator Mode
- Sales Record

Once you are done with your selection, simply make your choice whether to “Pay By Cash” or “Pay By Card”. Assuming that we select “Pay By Cash” after inserting \$80, we will get the following:

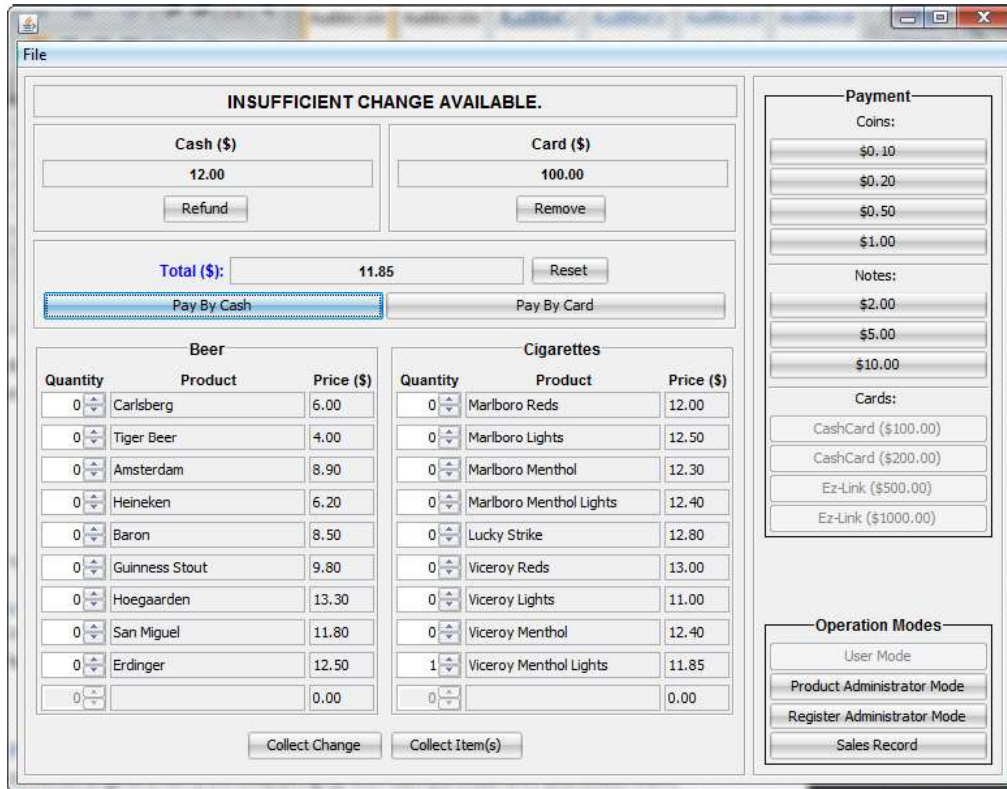


Upon clicking “Ok”, you may proceed to purchase more items, or to collect your change and items.



## Special Cases

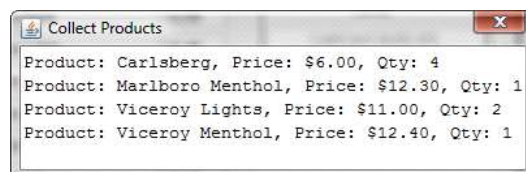
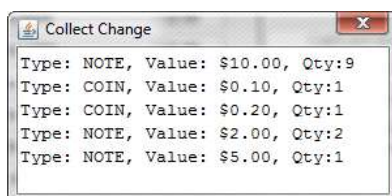
Assuming that the machine is unable to return any change, either due to not having enough change, or due to the fact that there is no such coin type available, you will get the following:



In the above example, we have chosen to buy 1 Viceroy Methol Lights, which costs \$11.85. However, the register for the vending machine does not know, or have any \$0.05 change. Thus, you will get the “Insufficient Change Available”. In such a case, you may opt to pay by card instead.

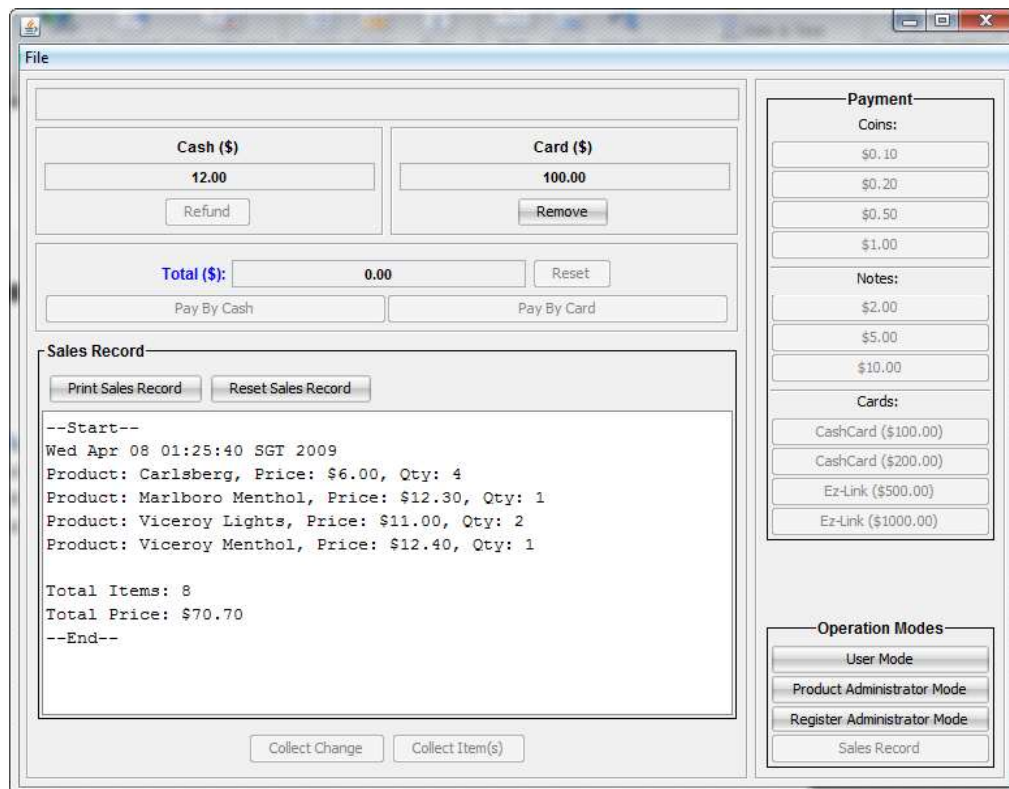
## Collecting Product(s) And Change

The collection boxes (change and item) will keep piling up with each purchase until you collect them. Once you collect them, they are cleared. The following are what is in the change and item collection box after the previous purchase:



## Machine Auto-Updates

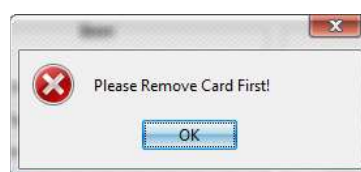
After each successful purchase, the amount of each value of money will be auto-updated to reflect the changes. Also, the quantity of each product will be updated, as well as the sales record. The following is a screenshot of the “Sales Record” after the previous purchase:



## Closing And Auto-Saving

The system auto-saves whenever you change from one operation mode to another. It also auto-saves when you exit it. To force a save, simply click “File -> Save”. To close the vending machine, click on the X button at the top-right.

## Special Cases



You might get the above error when attempting to close the vending machine. In such a case, please remove your card, and try again. The machine should now close successfully.

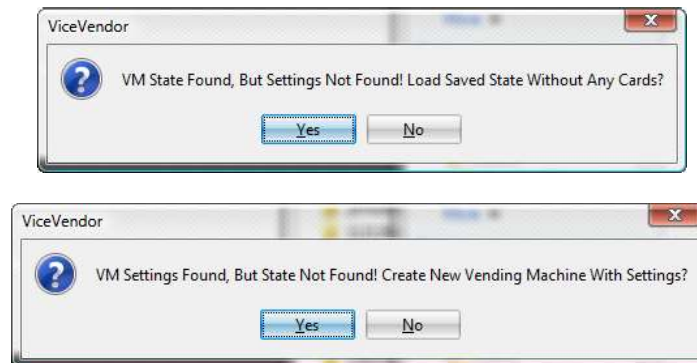
## Resuming A Machine State

To resume your machine after it is closed, simply launch the application again. It will ask if you wish to resume the machine.



## Special Cases

You may get either one of the following, when attempting to resume a machine:



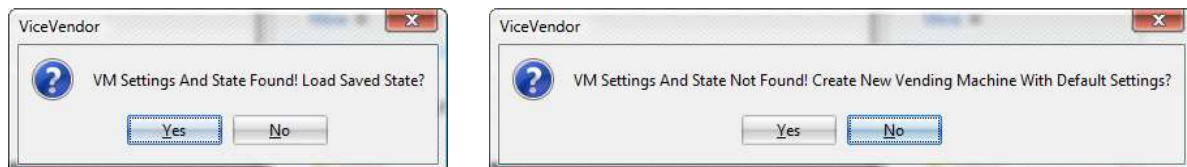
Both cases are exceptions that happen should one of the 2 settings file get deleted. Clicking on “No” will allow you to create a custom vending machine, which is detailed in the next section.

**Important: Selecting “No” for any of the above, and proceeding to load the new vending machine will result in deletion of the previous state.**

## Creating A Custom Machine

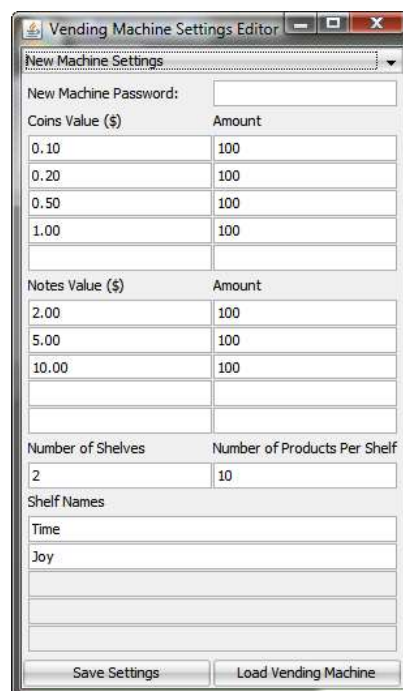
So far, we have seen how to use the machine with its default settings. This section details how you can go about creating your custom machines.

There are many ways to do so. The simplest way is as follows. When starting the application, you will get one of the following prompts, depending on whether you have a saved state or not already:



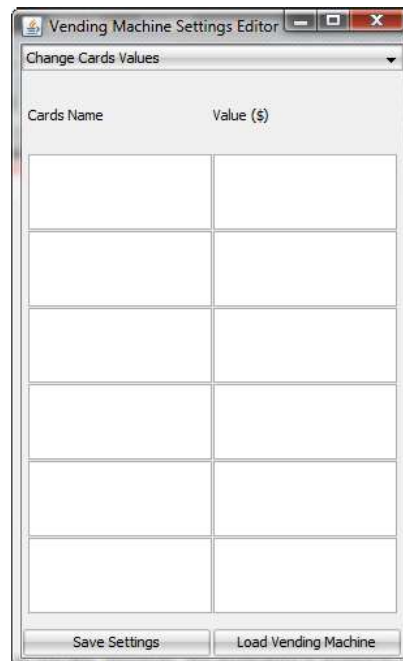
Selecting “No” for any of them will present you with the following Settings Editor. By default, it will fill up with the settings from your previous machine state:

**Important: Selecting “No” for any of the above, and proceeding to load the new vending machine will result in deletion of the previous state.**

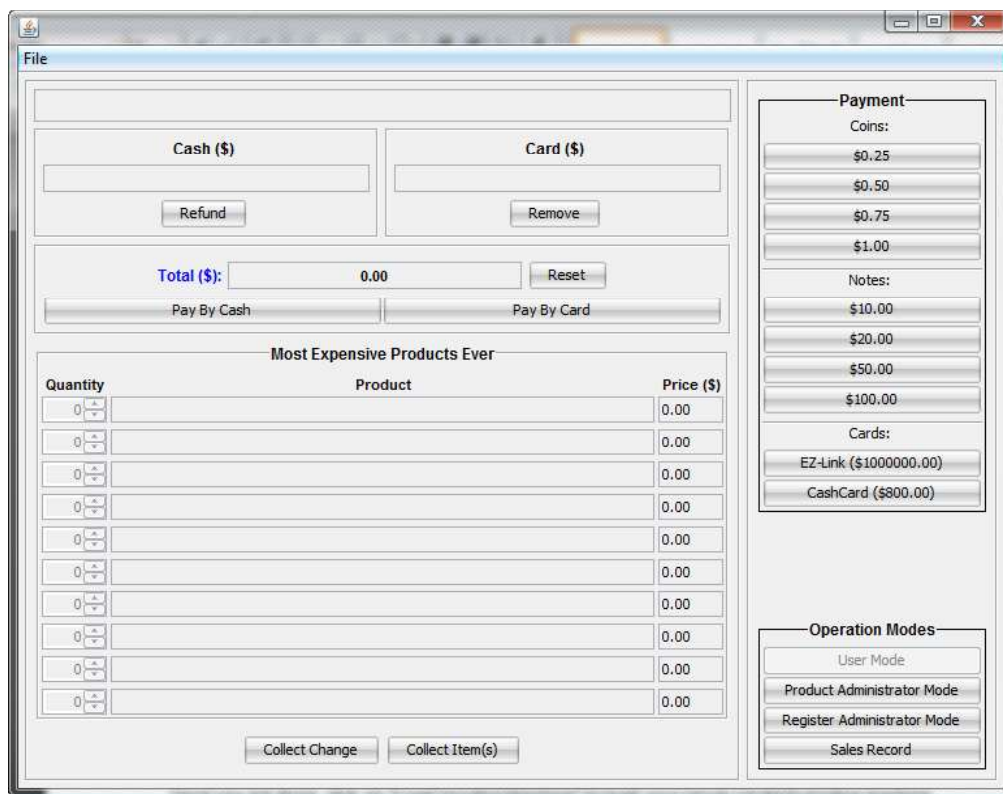


New Machine Settings	
New Machine Password: <input type="text"/>	
Coins Value (\$)	Amount
0.10	100
0.20	100
0.50	100
1.00	100
Notes Value (\$)	Amount
2.00	100
5.00	100
10.00	100
Number of Shelves	Number of Products Per Shelf
2	10
Shelf Names	
Time	
Joy	
Save Settings      Load Vending Machine	

You may then enter the values as you like. You may also set a machine password for the new vending machine. However, the application is limited to 5 types of coins, 5 types of notes, and 5 shelves at most. To change the card values, click the arrow at the top-right corner, and you should get the following:



Once you are done, click on "Load Vending Machine" to load your newly created vending machine. You may also "Save Settings" should you choose to. Upon clicking on "Load Vending Machine", you will see your new vending machine. The screenshot below is an example:



You may then proceed to add products and use your vending machine as detailed in the “Getting Started” section.

## Creating New Settings Without Loading Vending Machine

In the case that you want to create a new vending machine, but do not want to load it yet, you may do the following.

**Note: For a new vending machine to be created in this manner, “VMState.dat” must first be deleted.**

From command prompt, navigate to the directory containing the vending machine application. Then type one of the following:

```
java -jar VendingMachine.jar e
```

```
java -jar VendingMachine.jar -e
```

```
java -jar VendingMachine.jar editor
```

```
java -jar VendingMachine.jar -editor
```

Where “VendingMachine.jar” is the application name. If you have renamed it, please change the command accordingly. Once done, you will get the following. You may then proceed to “Save Settings” and exit the application. The next time you decide to run the vending machine, it will be created with the new settings.

Vending Machine Settings Editor

New Machine Settings

New Machine Password:

Coins Value (\$)

Amount

0.10

100

0.20

100

0.50

100

1.00

100

Notes Value (\$)

Amount

2.00

100

5.00

100

10.00

100

Number of Shelves

Number of Products Per Shelf

2

10

Shelf Names

Time

Joy

Save Settings

Load Vending Machine

## Topping-Up/Changing Value Of Cards For Existing Machine

You may have noticed by now that the vending machine application does not allow you to change the values of the cards. This is done intentionally as a real vending machine does not have the ability to do so as well. For this function, we make use of the Settings Editor application which was described in the previous section.

**Note: For the cards to be updated without the creation of a new vending machine, “VMState.dat” MUST NOT be deleted, unlike the previous section.**

To start it, go to command prompt and navigate to directory containing the application. Once done, do the following:

```
java -jar VendingMachine.jar c
```

```
java -jar VendingMachine.jar -c
```

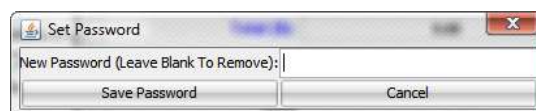
```
java -jar VendingMachine.jar card
```

```
java -jar VendingMachine.jar -card
```

Where “VendingMachine.jar” is the application name. If you have renamed it, please change the command accordingly. You will be able to change the values of the cards as well as rename them from here. Once done, you may proceed to “Save Settings” and launch your vending machine. Take note that as long as “VMState.dat” is not deleted, the vending machine will not be affected except for the updated card values.

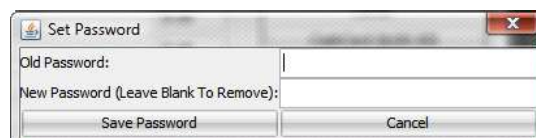
## Setting/Changing A Password For Existing Machine

To set a password, start the vending machine application. Once done, click on “File -> Set/Change Machine Password”. If there was no password previously, you should see the following:



Key in a password of your choice, and click “Save Password”. From now on, whenever you change from “User Mode” to any other mode, a password would be required.

If there was a previous password, you should get the following:



You will have to key in your old password in order to change to the new one.

## Removing Password From Machine

To remove a password, simply leave the new password blank, and key in your old password.