User's Manual - VM001 Simulator

This is the User's Manual for the Water World Vending Machine simulator - model VM001.

In this document you will find instructions on how to use the simulator, how to write input for filling the machine, how to write input for commands the machine will process, and how to interpret the various outputs.

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The Water World Vending Machine company is a subsidiary of the Moorpark College's Computer Science course, CS M20, Object Oriented Data Structure and Algorithm Detection, and is a completely fictional business.

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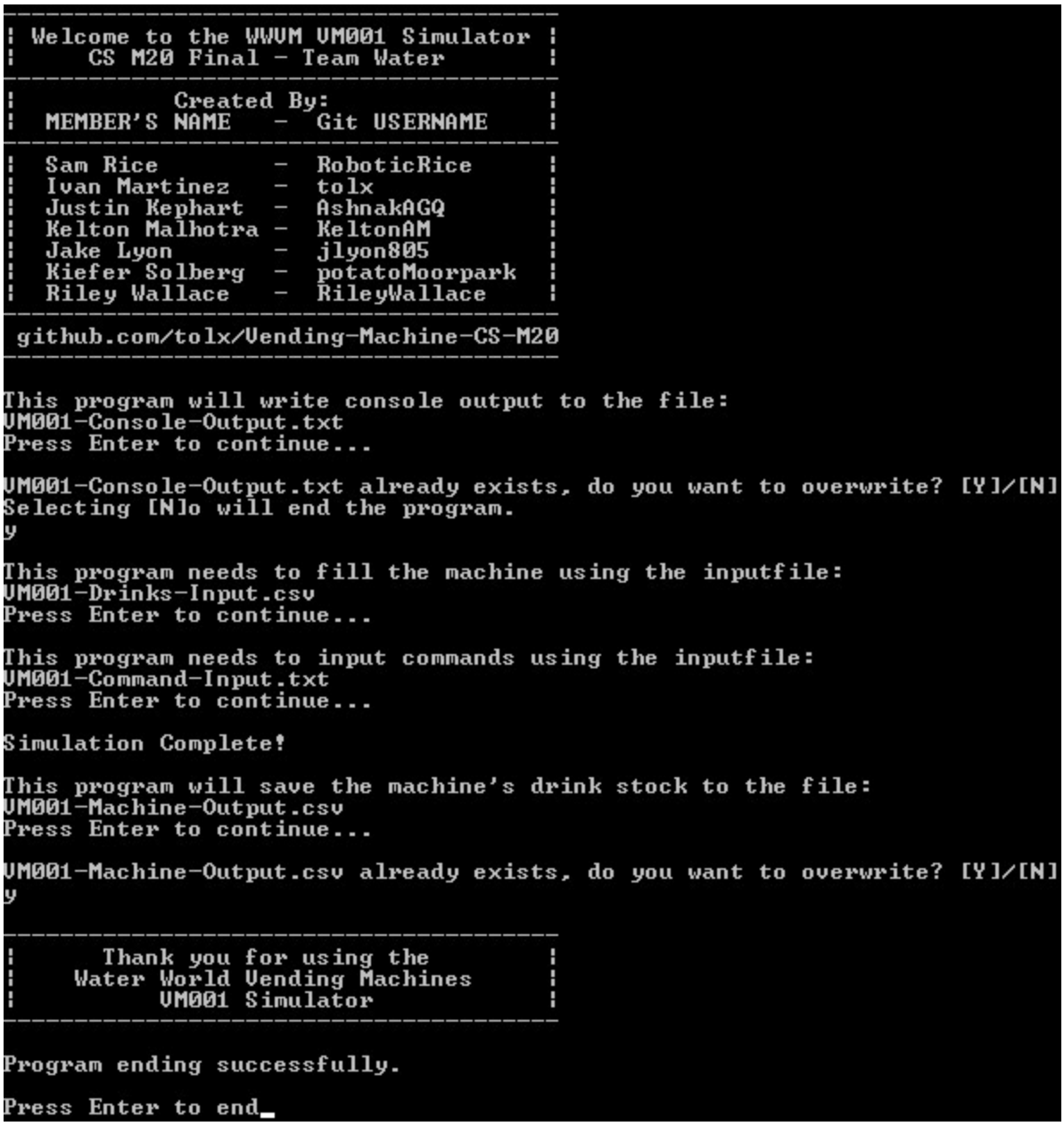
How to use the Console



NOTICE: *This program will attempt to use two input files and two output files. If the program can not find either of the input files, and you do not provide the program with an alternative input file, the program will not be able to continue. Also, if the program already has an output file for the commands, and you do not allow the program to overwrite that file, the program will not be able to continue.*

Before Running for the First Time - Ensure that the two input files are in the same directory as the FinalProject.cpp file. You need *VM001-Command-Input.txt* and *VM001-Drinks-Input.csv*, or files that have similar content that will function with the program.

When the application is run, a DOS Console will appear, and display the splash screen with the name of the program and who created it. It will then notify you that it will be writing output to the file

VM001-Console-Output.txt by default. Once you have acknowledged that, it will check to see if the file already exists. If the file does not, it will be created, if it does, you will be asked if you wish to overwrite the file - if you choose no, the program will be canceled. At this time, you do not have the option to save to a different filename or location.

Assuming the program did not end there, it will then notify you that it will use the file *VM001-Drinks-Input.csv* to fill the machine with drinks. Once you acknowledge that, the program will check to see if the file exists, if it does not, it will ask you to type the filename of the file you would like to input or Cancel to cancel the program. If the original file exists, or the file you typed exists, then the program will continue.

The next thing the program will do is notify you that it will use the file *VM001-Command-Input.txt* for inputting commands into the machine. Once you acknowledge that, the program will check to see if the file exists, if it does not, it will ask you to type the filename of the file you would like to input, or Cancel to cancel to program. If the original file exists, or the file you typed exists, then the program will continue.

Now, the program will attempt to simulate the vending machine with the drinks you filled it with and the commands you provided. If there is an error, the next line will read *Program ending unexpectedly due to error(s)!*, otherwise, it will read *Simulation Complete!*. If you receive the error, please contact customer support.

Finally, since the simulation is complete, you will be notified that the program will save the current inventory of the vending machine to the file *VM001-Machine-Output.csv*. Once you have acknowledged that, it will check to see if the file already exists. If the file does not, it will be created, if it does, you will be asked if you wish to overwrite the file - if you chose no, the inventory would *not* be saved, and the program will continue. At this time, you do not have the option to save to a different filename or location.

Lastly, the program will display a short thank you and inform you that it is ending successfully, meaning that there is nothing left for the program to do but exit. If you press enter one more time, the console window will close, and the program will be over.

Default Input

Please be aware, that the default input for the program is to have drink slots from A->D, 0->9, and the commands test almost every possible combination of things to test. The command input file also includes comments, which the machine ignores as if it was invalid input. Please refer to the VM001-Drinks-Input.csv file for more information on what quantities of drinks are available.

How to write Input Commands

There must be two, and only two, arguments to a single command at one time: The Action, and the Event. The action is what your doing, such as “Swipe”, “InsertCash”, or “PressButton”, and the Event is the details about such action - such as for “InsertCash”, the event could be any valid form of cash, such as “0.25”, “0.1”, or “1”. **The action and event should be on the same line and separated by a space.** If an invalid command is entered, such as an action without an event, or an incorrect event, the machine will simply not do anything at all.This is based off the actual vending machines on Campus.

Swipe	• Credit Card number, which must be any whole number. In this simulation, odd numbers are approved, even are declined.
InsertCash	• 0.01 • 0.05 • 0.10 • 0.25 • 0.50 • 1.00 • 5.00
PressButton	• “Cancel” - Cancels any credit in the machine. This only works if a card has been swiped and approved, and does not return any cash, only credit. • “CoinReturn” - Returns any cash in the machine. If there is credit in the machine, it will not be refunded. • Valid Position, which is any two digit combination of a letter followed by a number. Any letter A through Z, followed by any number 0 through 9. Example: “D4”. If the position does not exist, such as the machine only has D rows, but you typed E2, then an “Invalid Position” message will appear. Otherwise, if you have enough cash and credit in the machine to purchase the drink, it will dispense the drink, or if you don’t have enough cash and credit, it will display the price.

Examples:

GOOD	**BAD**
PressButton D4 PressButton A1 InsertCash 1 InsertCash .50 Swipe 12345	PressButton ZDD34 Press Button A 1 InsertCash 1,000 InsertCash 1.00, 0.50 Swipe Visa

How to write Input for the Drink Inventory

Costco Water	**1**	**5**	**Crystal Geyser**	**1.25**	**0**	**Aquafina**	**1.5**	**4**	**Aquafina**	**1.25**	**4**	**Costco Water**	**1**	**1**	**Costco Water**	**1**	**6**	**Costco Water**	**1**	**0**
Costco Water	1	5	Crystal Geyser	1.25	2	Aquafina	1.5	6	Aquafina	1.5	5	Costco Water	1	2	Aquafina	1.5	5	Aquafina	1.5	5
Costco Water	1	5	Crystal Geyser	1.25	1	Aquafina	1.5	8	Costco Water	1	6	Crystal Geyser	1.25	3	Crystal Geyser	1.25	5	Crystal Geyser	1.25	3
Costco Water	1	3	Crystal Geyser	1.25	0	Empty	1.5	0	Crystal Geyser	1.3	0	Empty	1.5	0	Empty	1.5	0	Empty	1.5	0

There csv file that is used for inputting drinks into the machine is already formatted in an excel spreadsheet style, which can be opened with almost any spreadsheet editor. In order to correctly input a drink slot, you must provide the first cell with the name of the drink, the second cell (which is the one immediately to the right of the first) with the price of the item, and the third cell (right next to the second) with a whole number representing the quantity. If the quantity is 0, it does not matter what you put for the name, as long as there is something. The name that you type will be displayed on the machine screen when the machine dispenses that drink. In the example below, drink slot A1 will be Crystal Geyser that has 2 drinks in it currently. Be aware, that in the csv file you input, the top row and left column of this example are not included, and if you do include them, the program will fail to load properly.

	0 (Name)	0 (Price)	0 (Quantity)	1 (Name)	1(Price)	1 (Quantity)
A	Costco Water	1	5	Crystal Geyser	1.25	2
B	Aquafina	1.5	6	Empty	0	0

How to read the Output for the Drink Inventory

The Output file serves the consumer in visually tracking all dispensed drinks. Here you will be able to track what has been left empty, and see if anything needs to be replenished. You may utilize this output file as your next input file by simply renaming it to “VM001-Drinks-Input.csv”, this output file works the same way as the input file described above. Same consumer restrictions still apply and must be used accordingly.

In this example the drink in A0 “Costco Water” has been sold out, based on a simulation where A0 has been successfully dispensed 5 times.

The Output file will be named “VM001-Machine-Output.csv”

	0 (Name)	0 (Price)	0 (Quantity)	1 (Name)	1(Price)	1 (Quantity)
A	Costco Water	1	0	Crystal Geyser	1.25	2
B	Aquafina	1.5	6	Empty	0	0

How to read the Console Output File

The Output file serves as a log file and possible future input file. We have constructed this file to serve as an input/output file if needed. The file will show in the simulations and commands that have been inputted by the user. The user should adhere to the commands it can give the machine, but we have ensured that bad input is ignored. We have included comments in our output file as well, but the user may choose to keep or eliminate these comments at will. For every command we have inputted a block comment to specify how the command affected the machine, and what choices were made by the user.

Example:

```
InsertCash .1

**************************************************************************
* Current amount: $0.10                                                  *
**************************************************************************
* Please type an Action, followed by an Entry, separated by a space *
*  ACTION          ENTRY                                                 *
*  Swipe           Card Number                                           *
*  InsertCash      0.01, 0.05, 0.10, 0.25, 0.50, 1.00, or 5.00           *
*  PressButton     Cancel                                                *
*  PressButton     CoinReturn                                            *
*  PressButton     A->Z, 0->9 (Example: "D4")                            *
**************************************************************************
InsertCash .5

**************************************************************************
* Current amount: $0.60                                                  *
**************************************************************************
* Please type an Action, followed by an Entry, separated by a space *
*  ACTION          ENTRY                                                 *
*  Swipe           Card Number                                           *
*  InsertCash      0.01, 0.05, 0.10, 0.25, 0.50, 1.00, or 5.00           *
*  PressButton     Cancel                                                *
*  PressButton     CoinReturn                                            *
*  PressButton     A->Z, 0->9 (Example: "D4")                            *
**************************************************************************
InsertCash 1.00

**************************************************************************
* Current amount: $1.60                                                  *
**************************************************************************
* Please type an Action, followed by an Entry, separated by a space *
*  ACTION          ENTRY                                                 *
*  Swipe           Card Number                                           *
```

```
*  InsertCash          0.01, 0.05, 0.10, 0.25, 0.50, 1.00, or 5.00      *
*  PressButton         Cancel                                           *
*  PressButton         CoinReturn                                       *
*  PressButton         A->Z, 0->9 (Example: "D4")                       *
**************************************************************************
PressButton A0

**************************************************************************
* Dispensing Cosco Water                                                 *
**************************************************************************
* Returning change: $0.60                                                *
**************************************************************************
* Welcome to the Water World vending Machine!                            *
**************************************************************************
* Please type an Action, followed by an Entry, separated by a space *
*  ACTION              ENTRY                                            *
*  Swipe               Card Number                                      *
*  InsertCash          0.01, 0.05, 0.10, 0.25, 0.50, 1.00, or 5.00      *
*  PressButton         Cancel                                           *
*  PressButton         CoinReturn                                       *
*  PressButton         A->Z, 0->9 (Example: "D4")                       *
**************************************************************************
```