DEPLOYMENT DOCUMENT

For the

Vending Machine Controller

(VMC)

Prepared for

CS361 – Software Engineering I

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Prepared by

Keith Bittner

David Hippe

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1 Purpose

This prototype was designed to simulate the software behind a Vending Machine Control System that communicates with the various hardware included inside a Vending Machine. It simulates both customers and service technician operations.

Customer operations include the following:

- Inserting currency (U.S. coins and/or U.S. bills)
- Selecting a product
- Retrieving a dispensed product
- Retrieving change
- Cancelling a transaction

Service Technician operations include the following:

- Putting a Vending Machine into service
- Taking a Vending Machine out of service
- Refilling the Vending Machine inventory
- Resetting the U.S. coin/bill acceptors
- Emptying the coin overflow bin
- Changing a product's price

2 Hardware Requirements

There are no additional hardware requirements specified for the use of this prototype.

3 Software Requirements

This prototype was built for the Windows OS. The prototype will run on any Windows OS versions newer than the XP version. Additional software is required to build the source code for the prototype into an executable file.

4 Third-Party Software Requirements

Third-Party Software required to build the source code for this prototype are the latest version of Python for Windows and pyinstaller. See the Installation section for how to install the Third-Party Software.

5 Installation

5.1 Python for Windows

To start, download the latest version of Python from http://python.org/downloads/windows/. There are various versions that are available for download. Choose the right installation package for the current Windows OS version being used.

- Run the installer.
- Click the 'Add Python [version] to PATH' check box.
- Click 'Install Now'.

5.2 pyinstaller

To start, ensure that Python installed on the Windows OS version being used. This can be accomplished by going to Add/Remove Programs and checking to see if it is on the list.

- Open a Command Prompt on Windows. This can be accomplished by typing 'cmd' into the search bar.
- Type 'pip install pyinstaller' into the Command Prompt and press enter.
- Wait for installation to complete.

5.3 Building the Executable

To start, extract the source code for the prototype into a destination (most common is 'Extract Here').

- Open a Command Prompt on Windows.
- Navigate to the folder the source code is located (eg. **cd** C:\Users\<username>\Documents).
- Type in **pyinstaller –onefile Controller.py** and press enter.
- Wait for pyinstaller to build the executable.
- Once complete, close the Command Prompt.
- Open the folder where the source code for the prototype is located.
- Open the folder named 'dist'.
- Double-click the Controller.exe to run.

6 Starting the Prototype

The following are instructions to starting the prototype:

- Double-click the Controller.exe to run.
- Once running all buttons will be disabled.
- To enable the buttons, click the 'Service' button.
- A new window will open with several disabled buttons.
- Click the 'Enter Pin' button
- A keypad window will open.
- Enter the following pin '#0000' and press enter.
- Click the 'Enter Pin' button again.
- All buttons should now be active.
- Click the 'Start Machine' button.
- The window will close, and all buttons should now be active on the controller.
- The prototype is now started and running.

7 Running the Prototype

7.1 Customer Operations

In order to test the Customer Use Cases described in the Software Requirements Specification document, ensure the prototype has been started (to start the prototype see Section 6 Starting the Prototype)

7.1.1 Purchase

- When there is no currency inserted into the prototype, selecting a product will display its current price.
- To insert currency, click the 'Insert Coins' and/or 'Insert Bills' button.
- Click the appropriate denomination buttons, max allowed is $3.00 unless using a $5 bill.
- Selecting a product after currency has been inserted will initiate a purchase.
- Purchased product will then be dispensed into the product dispenser.
- Any change from a completed transaction will be dispensed into the coin return tray.
- Click the 'Collect' button to retrieve dispensed product and/or dispensed change.

7.1.2 Cancel Transaction

- After inserting currency into the prototype, if the 'Change Return' button is pressed, the transaction will be cancelled.
- Change from cancelled transactions will be dispensed into the coin return tray.
- Click the 'Collect' button to retrieve the change dispensed from clicking the 'Change Return' button.

7.2 Service Technician Operations

In order to test the Service Technician Use Cases described in the Software Requirements Specification document, ensure the prototype has been started (to start the prototype see Section 6 Starting the Prototype)

7.2.1 Restocking Inventory

- If a product is sold out, click the 'Service' button.
- Click the 'Restock' button to refill the inventory
- Prototype's product inventory is refilled.

7.2.2 Full Servicing

- If the prototype requires full servicing, click the 'Service' button.
- Click the 'Enter Pin' button.
- Enter the following pin '#0000' and press enter.
- Click the 'Enter Pin' button.
- Prototype is now in-service mode.
- Click the 'Start Machine' button to simulate refilling the coin repository, empty the bill collector, and empty the coin overflow bin.

7.2.3 Changing Product Price

- To change a product's price, click the 'Service' button.
- Click the 'Enter Pin' button
- Enter the following pin '#0000' and press enter
- Click the 'Enter Pin' button.
- Click the 'Select Product' button.

- Press a button from 1-8 and hit enter.
- Click the ‘Select Product’ button.
- Click the ‘Select Price’ button.
- Press the new price and press enter (use the ‘.’ If needed).
- Press the ‘Select Price’ button.
- Press the ‘Change Price’ button.
- Products price is now changed, and the service panel can be exited by clicking the ‘X’ in the corner.

8 Stopping the Prototype

The following are instructions to stopping the prototype:

- To stop the prototype, click the ‘Service’ button.
- A new window will open with several disabled buttons.
- Click the ‘Enter Pin’ button
- A keypad window will open.
- Enter the following pin ‘#0000’ and press enter.
- Click the ‘Enter Pin’ button again.
- All buttons should now be active.
- Click the ‘Stop Machine’ button.
- The window will close, and all buttons should now be disabled on the controller.
- The prototype is now stopped and can be closed using the ‘X’ in the corner