1 Appendix - Hardware Test Checklist

Hardware

1. Electrical and Mechanical			Comments:
Power Supply Rails are within 10%: 12V, 5V, 3V:	Yes ____	No ____	
Power Cord is detachable:	Yes ____	No ____	
Speaker is able to achieve 90 dB:	Yes ____	No ____	
Motors are secure and operate without significant vibration:	Yes ____	No ____	
Rotational devices are secure and rotate freely without resistance:	Yes ____	No ____	
Noise levels are below 60 dB:	Yes ____	No ____	
Laser is secure and does not pose a threat to the user:	Yes ____	No ____	
VAM is able to pick up a single pill at a time:	Yes ____	No ____	
VAM is able to drop the pill precisely 99% of the time:	Yes ____	No ____	
Stepper Motor dispensing safety stopping mechanism is able to accurately discard or dispense the desired medication:	Yes ____	No ____	

	Laser Sensor is able to trigger on object sliding by:	Yes ____	No ____
	Power supply can supply sufficient current to run all the motors:	Yes ____	No ____
	Devices do not restart or fail when the vacuum motor starts and stop:	Yes ____	No ____
	VAM is able to have feedback about the relative position:	Yes ____	No ____
	VAM is able to detect when it touches objects when it is extending:	Yes ____	No ____
	Pills empty completely into our storage container:	Yes ____	No ____
	Each storage containers are uniquely and accurately identified by our Photo micro sensor:	Yes ____	No ____

2. Arduino Controls — Comments:

	Able to clearly display its current control state back to the Pi.	Yes ____	No ____
	Able to control stepper motor via the EasyDriver.	Yes ____	No ____
	Can accurately send commands to the stepper.	Yes ____	No ____
	Arduino have fast executing main loop code and interrupt code	Yes ____	No ____

	without missing external hardware interrupt signals.		
	Able to communicate with the fingerprint scanner and authenticate users.	Yes ____	No ____
	Can successfully control both servo motors and obtain accuracy and repeatability.	Yes ____	No ____

2 Appendix - Software Test Checklist

Software

3.	GUI			Comments:
	Taskbar shown in every menu:	Yes ____	No ____	
	Taskbar displays current date and time:	Yes ____	No ____	
	Taskbar displays username of current user:	Yes ____	No ____	
	Taskbar displays WiFi connectivity status:	Yes ____	No ____	
	All menus navigable aside from waiting/progress menus?	Yes ____	No ____	
	All editable fields such as text edits display on-screen virtual keyboard when pressed:	Yes ____	No ____	
	All editable fields can be modified by what the user types on the virtual keyboard:	Yes ____	No ____	
	Virtual keyboard maps buttons to text correctly:	Yes ____	No ____	
	Home menu displays next scheduled pill:	Yes ____	No ____	
	Home menu buttons have icons:	Yes ____	No ____	
	Ask for confirmation	Yes ____	No ____	

	before loading pills:		
	Ask for confirmation before dispensing pills:	Yes ____	No ____
	Show details of pill to dispense in dispensing confirmation:	Yes ____	No ____
	Waiting/progress menus displayed when Raspberry Pi is communicating with the Arduino:	Yes ____	No ____
	Displays the schedule in a monthly calendar:	Yes ____	No ____
	Able to view times and prescriptions in each time for a particular day chosen in the monthly calendar:	Yes ____	No ____
	Displays OCR results in editable fields:	Yes ____	No ____
	Allows user to edit OCR results:	Yes ____	No ____
	Displays nearby access points in WiFi settings:	Yes ____	No ____
	Displays prompts to enter passwords when and where applicable:	Yes ____	No ____
	Displays lists of users:	Yes ____	No ____
	Displays menus for user settings/control:	Yes ____	No ____
	Displays user's prescriptions as read-only:	Yes ____	No ____

	Displays menus for system settings:	Yes ____	No ____
	Displays "About" information:	Yes ____	No ____

4. Raspberry Pi to Arduino communication — Comments:

	Arduino can echo what Raspberry Pi sends:	Yes ____	No ____
	Raspberry Pi can signal Arduino to start loading pills:	Yes ____	No ____
	Raspberry Pi can signal Arduino to start dispensing pills:	Yes ____	No ____

5. User Settings — Comments:

	Can create a user:	Yes ____	No ____
	Cannot create a user with duplicate usernames:	Yes ____	No ____
	Can only edit signed-in user:	Yes ____	No ____
	Can only view prescriptions of signed-in user:	Yes ____	No ____
	Can sign into another user:	Yes ____	No ____
	Signing in requires authentication through fingerprint reader:	Yes ____	No ____
	Default user automatically signed in at system bootup:	Yes ____	No ____
	Can only delete signed-in user:	Yes ____	No ____

	Deleting default user automatically assigns another user as default arbitrarily:	Yes ____	No ____
	Raspberry Pi can signal Arduino to start dispensing pills:	Yes ____	No ____

6. Schedule — Comments:

	Software determines how many days to take the pill based on prescription date, dosage, number of pills, and how many to take per day (frequency):	Yes ____	No ____
	User able to specify pill times for each pill when loading:	Yes ____	No ____
	Pill times are modifiable after loading:	Yes ____	No ____
	Able to take multiple pills of multiple prescriptions on the same day and time:	Yes ____	No ____
	Cannot schedule duplicate prescriptions if date ranges overlap:	Yes ____	No ____
	Prescriptions removed from schedule once they are finished:	Yes ____	No ____

7. System Settings — Comments:

	Adjust brightness of screen:	Yes ____	No ____
	Adjust volume of Raspberry Pi OS:	Yes ____	No ____

	Connect to WiFi network:	Yes ____	No ____
	Change to different alarm types:	Yes ____	No ____
	Able to preview alarms:	Yes ____	No ____

8. Data Storage — Comments:

	User settings stored in XML file:	Yes ____	No ____
	System settings stored in XML file:	Yes ____	No ____
	Schedule stored in XML file:	Yes ____	No ____
	Able to save/load all user settings, system settings, and schedule from XML file:	Yes ____	No ____

9. Image Processing — Comments:

	Able to concatenate multiple images:	Yes ____	No ____
	Able to concatenate images at correct points:	Yes ____	No ____
	Concatenated image is clear and recognizable (no overlap or extra spaces):	Yes ____	No ____
	OCR able to translate image into text with 90% accuracy:	Yes ____	No ____

10. Scripts — Comments:

	Script to get all available wireless access points in range and their	Yes ____	No ____

	encryption settings:		
	Script to connect to wireless access point with password:	Yes ____	No ____
	Script to control touch screen brightness:	Yes ____	No ____
	Script to adjust Raspberry Pi OS volume:	Yes ____	No ____