Nau-Mai Visitor System

PROJECT DOCUMENTATION

Kathleen Livingstone | Applied Software Practice | May 1, 2022

Executive Summary

Nau-Mai is a visitor management system tool for locations with a warehouse/ distribution center on the property. Unlike traditional visitor management systems, the Nau-Mai captures the additional required information drivers must provide to pick up or drop off a shipment at the facility. Using a digital visitor log system that stores the data in a database eliminates the need to keep paper logbooks and allows site leadership to quickly list who is currently onsite in the case of an emergency. When an emergency requires everyone on site to either seek shelter or go to a regress point, the site leadership must physically transport the logbook. In the case of a fire emergency, would you want a member of your staff to retrieve the visitor book when you can use a tablet or cellphone to access the data? Nau-Mai performs the book-keeping, allowing leadership on site to remain focused on getting people to a safe location.

Nau-Mai is written in Java Swing. The data acquired from the visitor management system is stored in TK file format, while the order data pulled from the WMS and the staffing directory are stored in CSV file format. Therefore, we can protect the central WMS database from misuse, damage, and intrusion by pulling reports from the WMS and holding them in CSV format. In addition, we can easily use the staffing directory for other projects. Nau-Mai is open source and available on GitHub.

- GitHub repository: https://github.com/k8tlivingstone/Capstone.git
- General walkthrough video: https://drive.google.com/file/d/1OY-o6xDXTQqfb1k_ubhrQ78GD-C8Fyue/view?usp=sharing
- Datastore walkthrough video: https://drive.google.com/file/d/1VaTJG0y5iLZer4Ii03xFe4Tw6nV_AjGa/view?usp=sharing
- Reusable code walkthrough video: https://drive.google.com/file/d/1Mu-LsUyFARBGtMUaH7NVKCCoMH-3eiuu/view?usp=sharing
- Verification and validation walkthrough video: https://drive.google.com/file/d/1cenWcbM4Eaz_FSh1zf4SRYNib5gQhNuu/view?usp=sharing
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PROJECT COMPLETION STATUS: 70%

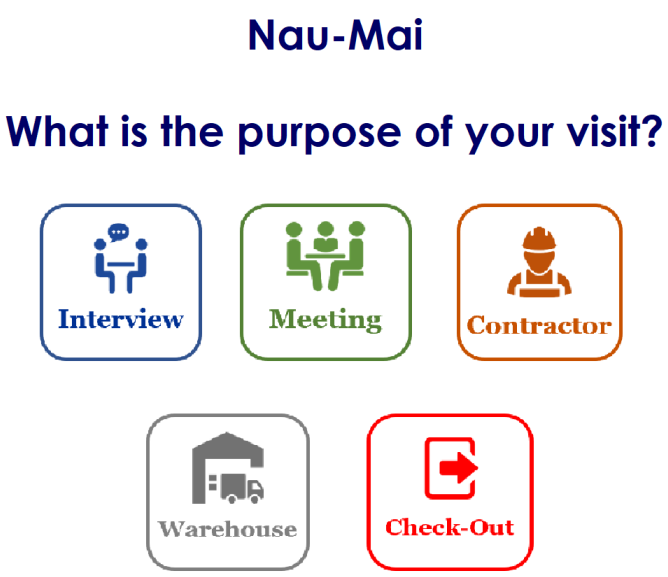
Open Action Items to Do:

- Menu page graphics should be replaced with higher pixelated images.
- Setup virtual keyboard listeners to connect with textfield displays
- Adjust Login and Admin screens to adjust positioning when the screen size changes
- Pull a report from WMS system to upload into the database. That report is needed to validate warehouse active orders. Since that application is on my employer's network, the WMS team needs to create a custom pull report template. Personal school projects are low priority therefore, it has not been completed to date.
- Review the structure of the program for the opportunity to reduce runtime. For example, many screens where the database connection is initiated causes them to load slower. A customer would want a smooth transition from screen to screen (no slight pauses).
- Complete full test plan

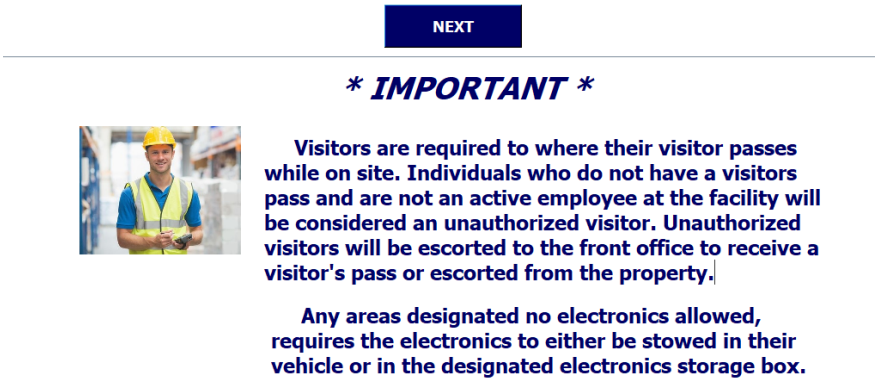
SCENARIO | USER ON SITE FOR INTERVIEW, MEETING, OR CONTRACT WORK

A user selects the start button on the initial welcome screen and is directed to the menu screen. Next, the user selects either the Interview, the Meeting, or the Contractor button. Next, the application displays a safety message for the location. After the user selects the Continue button, the application shows the security information regarding photos and videos being taken on site. Continuing again takes the user to the first input screen, where the user must enter their first and last name and mark whether they are a US citizen. If the person represents an organization, they can enter that information into the corresponding field.

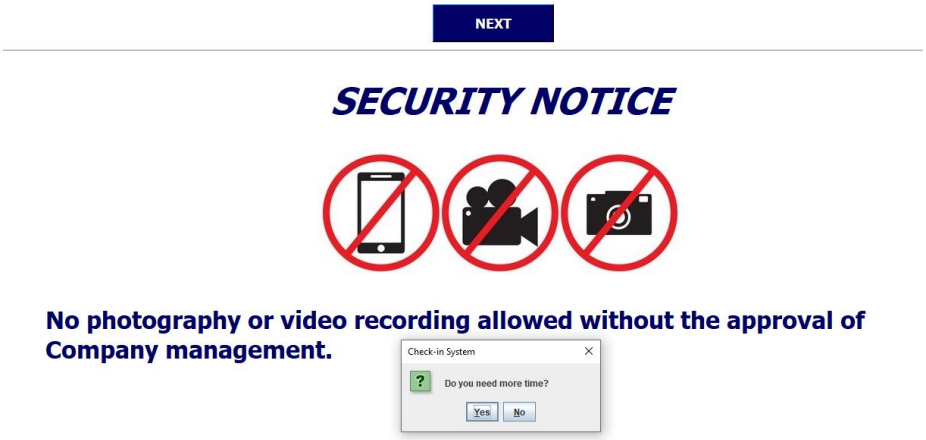
Scenarios 1-a: Landing Page for Application



Scenario 1-b: Menu Screen to direct people to their areas



Scenario 1-c: Safety message to display



Scenario 1-d: Photography Policy

Scenario 1-e: Form to capture the name of the visitors

Scenario 1-g: Closing message explaining their person has been notified and where to wait.

SCENARIO | USER ONSITE FOR WAREHOUSE DELIVERY/SHIPMENT

Like the previous scenario, a user selects the start button on the initial welcome screen and is directed to the menu screen. Next, the user selects the warehouse button. Next, the application displays a safety message for the location. After the user selects the Continue button, the application shows the security information regarding photos and videos being taken on site. Continuing again takes the user to the order screen, where they must enter the order number or confirmation code for the shipment or delivery; they are there to complete. If the driver is working for a LTL carrier, they can mark that option. If the order number or confirmation code does not match any records, they will be advised to check the information and try again or contact their dispatcher for the information. They will have up to 3 tries before the system informs them that they need to contact their dispatcher.

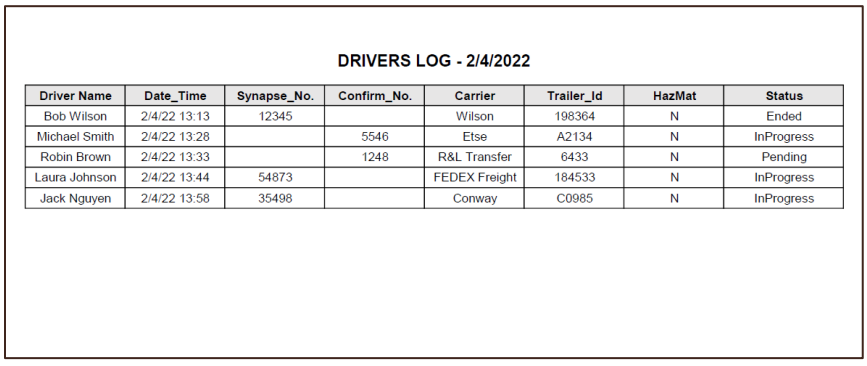
After the order number or confirmation code is verified as an open order planned to be received, the system takes the user to enter their first and last name and organization and mark whether they are US citizens. Next, the driver is directed to the designated building or specific dock door for loading or unloading a shipment. The window clerk will be notified that the driver for order X has arrived and is moving to building/door Y.

SCENARIO | USER ONSITE TO CHECK-OUT

When a person leaves the location, they can select the check-out option from the menu screen. The person will be directed to the Name screen to enter their first and last name. After they click Next, the system will check if they are in the system. Once verified, the exit screen will open, asking them to confirm they are checking out. If they select yes, a closing message will display. The database will capture the date and time and mark them as checked out. Otherwise, they will be directed back to the menu screen.

REPORTS

The program can produce a current onsite report for use in the case of an Emergency. The onsite report is exported as a pdf document, and the design is modeled after the attendance log sheets used at warehouses currently for visitors.



DRIVERS LOG - 2/4/2022

Driver Name	Date_Time	Synapse_No.	Confirm_No.	Carrier	Trailer_Id	HazMat	Status
Bob Wilson	2/4/22 13:13	12345		Wilson	198364	N	Ended
Michael Smith	2/4/22 13:28		5546	Etse	A2134	N	InProgress
Robin Brown	2/4/22 13:33		1248	R&L Transfer	6433	N	Pending
Laura Johnson	2/4/22 13:44	54873		FEDEX Freight	184533	N	InProgress
Jack Nguyen	2/4/22 13:58	35498		Conway	C0985	N	InProgress

SYSTEM ARCHITECTURE

Nau-Mai runs as a local application on Microsoft Windows. Regular display items were created in reusable style panels to reduce the number of frames within the system. These panels are then layered in a specific order, like a deck of cards.

SOURCE CODE STRUCTURE

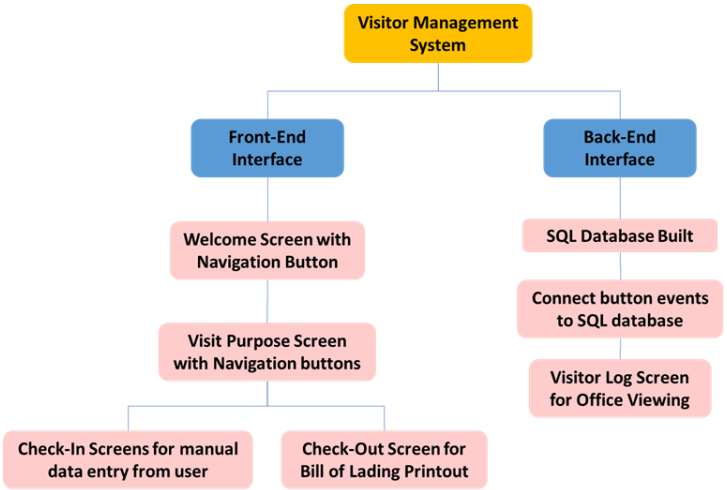
The source code was organized following the Maven standard.

EXECUTABLES

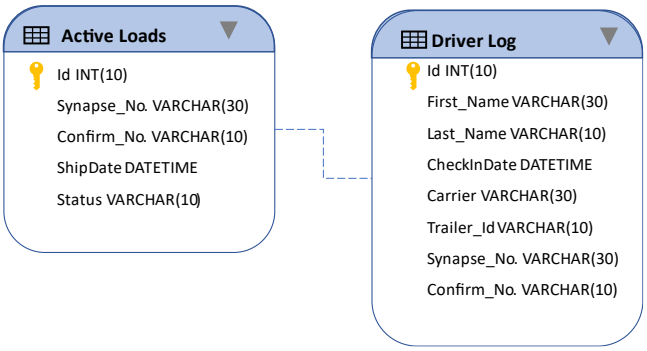
Since the Project is unfinished, the executables have not been created yet. However, the plan is to have an installer wizard walk users through installing all the necessary components.

CODE ARCHITECTURE

Work Breakdown Structure (WBS)



DATABASE OR DATASTORE



EXTERNAL FILES & DATA

Directory Data Sample used in the tool. I used Excel and SQL formats for the data.

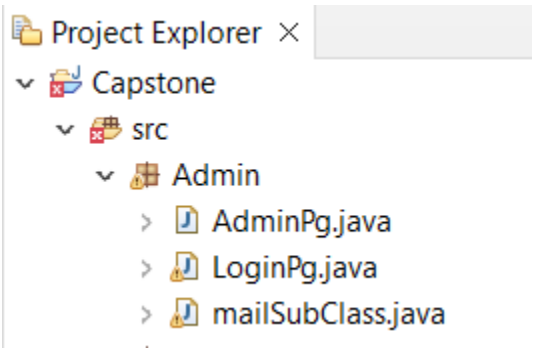
dirKey	FName	LName	Role	Dept	Email	Ext	Phone
1	Kate	Livingstone	Engineering & Sustainability Manager	Engineering	klivingstone@peoplesservices.com	1923	330-453-3709
2	Randall	Albert	B9 Supervisor	Ops	ralbert@peoplesservices.com	1161	330-786-8619
3	John	Betts	Quality Control Supervisor	Ops	jbetts@peoplesservices.com	1168	
4	Anene	Bilodeau	CSR	Office	abilodeau@peoplesservices.com	1175	330-786-8607
5	Vaughn	Denison	B9 Supervisor	Ops	vdenison@peoplesservices.com	1173	
6	Melodie	Esque	CSR	Office	mesque@peoplesservices.com	1133	330-786-2315
7	Pam	Frank	CSR	Office	pfrank@peoplesservices.com	1134	330-786-2321
8	George	Greene	Office Manager	Maintenance	ggreene@peoplesservices.com	1176	330-786-8602
9	Ashley	Hoobler	CSR	Office	ahoobler@peoplesservices.com	1130	330-786-8601
10	Cassie	Hubbard	CSR	Office	chubbard@peoplesservices.com	1132	330-786-2309
11	Greg	Hughes	VP of Operations	Ops	ghughes@peoplesservices.com	1148	330-786-2308
12	Danielle	Johnson	IT for Synapse	IT	djohnson@peoplesservices.com	1157	330-786-8616
13	Candy	Kline	IT for Synapse	IT	ckline@peoplesservices.com	1158	330-786-2304
14	Stephen	Leforte	CSR	Maintenance	sleforte@peoplesservices.com	1130	330-786-2306
15	Tinia	McCurdy	CSR	Office	tmccurdy@peoplesservices.com	1151	330-786-8611
16	Matt	McGraw	CSR	EHSS	mmcgraw@peoplesservices.com	1146	330-786-2303
17	JoEllen	Meyers	CSR	Office	jmeyers@peoplesservices.com	1144	
18	Alissa	Newberry	CSR	Office	anewberry@peoplesservices.com	1170	330-786-8606
19	Debbie	Perrenoud	CSR	Office	dperrenoud@peoplesservices.com	1135	330-786-2318
20	Dan	Peterson	Warehouse Manager	Ops	dpeterson@peoplesservices.com	1147	330-786-8618
21	Charles	Ramsey	IT for Synapse	IT	cramsey@peoplesservices.com	1159	330-786-2320
22	Amanda	Seese	Office Coordinator	Office	aseese@peoplesservices.com	1150	
23	Danielle	Shackelford	CSR	Office	dshackelford@peoplesservices.com	1139	330-786-8609
24	Danielle	Stamets	CSR	Office	dstamets@peoplesservices.com	1143	330-786-2317
25	Tammy	Kirkland	CSR	Office	tkirkland@peoplesservices.com	1152	330-786-8609
26	Susan	Vasaris	CSR	Office	svasaris@peoplesservices.com	1140	330-786-8601
27	Crystal	Vickers	CSR	Office	cvickers@peoplesservices.com	1145	330-786-2312
28	Anson	Walker	Operations Manager	Ops	awalker@peoplesservices.com	1154	330-786-2322
29	Quinn	Whitehurst	CSR	EHSS	qwhitehurst@peoplesservices.com	1138	330-786-2319
30	Josh	Zurcher	CSR	Office	jzurcher@peoplesservices.com	1141	330-786-8610

PROGRAMMING LANGUAGE | JAVA SWING

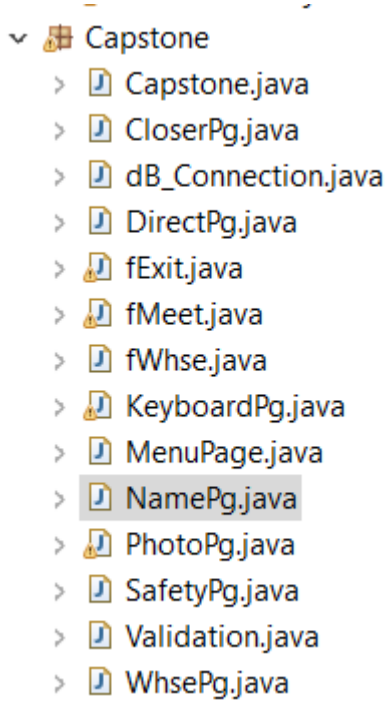
PROJECT CLASSES

The Project has four packages (folders). One folder is dedicated to images, and another is dedicated to additional library jars not included in Java 17's JRE standard library. The other

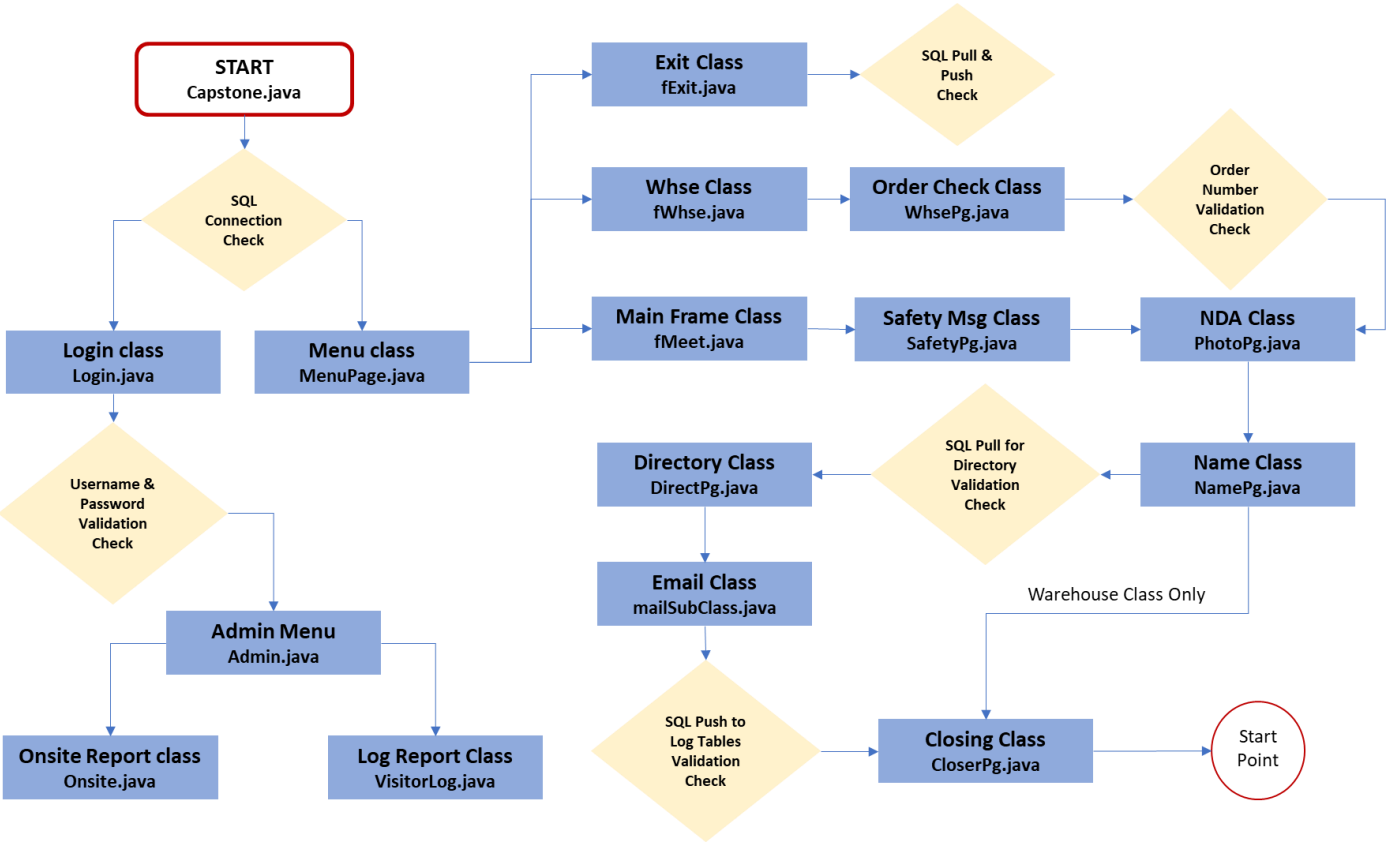
two packages are Admin and Capstone. For example, the keyboard class in the capstone folder probably should have been placed in the admin folder. Segregating the files makes it easier to locate the type of file needed.



Admin Package includes the admin screen, login screen, and the mailsubclass for sending emails to people on site.



PROGRAM START AND END FLOW



SUMMARY

This Project was a definite challenge. Handling the front end, back end, and administrative steps within 15 weeks is a challenge. The program uses Java Swing and SQL for data storage. Although the program is not complete, the building and refining of the program will continue. An opportunity for refinement would move the application to web-based. That would provide an opportunity to use CSS coding for the formatting and JavaScript for more advanced features of the tool. This program would be a great benefit to a logistics environment which is the area of software development that interests me. For this assignment, this is version 1.0.

APPENDIX A (TEST PLAN)

Below is a small portion of the test plan created for this application. As each element was tested, what to expect, the results and any oddities noted during testing. For example, it is noted that the frames after the menu page open slowly due to the database connection in the beginning. Reviewing how that SQL connection is set up will be an element looked at in version 2. The complete plan is available upon request.

Project Name	Warehouse Visitor Management System
Created By	Kate Livingstone
Creation Date	1/23/2022
Reviewed By	Test Lead/Peers
Reviewed Date	5/6/2022

Test Scenario ID	Test Scenario Description	Test Case ID	Test Case Description	Results	Status	Executed By	Executed Date	Comments (if any)
TS_WVMS_008	Verify Warehouse process works correctly	TC_WVMS_008-003	Verify Order screen opens	Confirmed & Repeatable	Complete	K.Livingstone	4/30/2022	
		TC_WVMS_008-004	Verify Name screen opens	Confirmed & Repeatable	Complete	K.Livingstone	4/30/2022	
		TC_WVMS_008-005	Verify Trailer Info screen opens	Confirmed & Repeatable	Complete	K.Livingstone	4/30/2022	
		TC_WVMS_008-006	Verify LTL screen opens	Confirmed & Repeatable	Complete	K.Livingstone	4/30/2022	
TS_WVMS_009	Verify Checkout process works correctly	TC_WVMS_009-001	Verify Name screen opens		In Progress	K.Livingstone	4/30/2022	
		TC_WVMS_009-002	Verify checkout confirmation screen opens					dependant on TC_WVMS_009-001
		TC_WVMS_009-003	Verify good by screen opens					dependant on TC_WVMS_009-001
		TC_WVMS_009-004	Verify database is updates the status of the person as closed, with date and time					dependant on TC_WVMS_009-001
TS_WVMS_010	Verify Name screen works correctly	TC_WVMS_010_001	Verify user can input data into text fields		Complete	K.Livingstone	4/30/2022	
		TC_WVMS_010_002	Verify the clear button clears all text fields and resets the citizen checkbox	clears successfully	Complete	K.Livingstone	4/30/2022	
		TC_WVMS_010_003	Verify the next button adds data to arraylist		Complete	K.Livingstone	4/30/2022	
		TC_WVMS_010_004	Verify the timer works on the screen		Complete	K.Livingstone	4/30/2022	
TS_WVMS_011	Verify Directory screen works correctly	TC_WVMS_011_001	Verify the data table opens for reading					
		TC_WVMS_011_002	Verify data is filtered for display as person enters letters in textfield					
		TC_WVMS_011_003	Verify email is sent to person selected					

APPENDIX C (CLIENT INSTALLATION INSTRUCTIONS)

The expected goal is to have the application installer contain all the necessary components for a client to install the program. If the installer is in a zip file, they will extract the contents to a known location. The Git repository will have the files that will be in the installer:

- Capstone/

The plan is to have the executable program start installing as soon as the client initiates the setup script. Users will choose where to keep their database and assign permissions to authorized administrative individuals. The program does not have the option to create user groups. Maintaining the database will be the client's responsibility. When the installation is complete, Nau-Mai will be installed with a desktop shortcut for ease of use.

APPENDIX D (DEVELOPER SETUP INSTRUCTIONS)

The following tasks are required to configure a development environment to work on Nau-Mai:

- Install Eclipse IDE for Java Developers version 12 or newer
- Download all the files from the repository, including the library files.
- Designate the database you will handle the pull/push requests.
- Clone the Project from GitHub. (https://github.com/k8tlivingstone/Capstone)