

*Florida International University
School of Computing and Information Sciences*

CIS 4911 - Senior Capstone Project
Software Engineering Focus

Final Deliverable

BOLO Flier Creator Version 5

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Abstract

The Pinecrest Police Department wish to bring policing into the future by combining technology with their vast domain knowledge. The current system for the distribution of BOLO's is lethargic and inefficient. For these reasons the Pinecrest Police department has employed the assistance of the college of engineering and computer science at Florida International University along with IBM Bluemix to implement their innovative idea.

*This document provides a solution in the **BOLO 5.0** system, a user-driven approach that allows law enforcement agents to instantly publish BOLOs. This document contains an extensive list of implemented user stories. It also provides a detailed plan of execution that includes hardware and software specifications. System design is explained through specific diagrams. System validation is also discussed. A glossary with essential domain terminology can also be found. Finally, the last chapter contains a series of appendices with UML samples, screenshots, and progress reports.*

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INTRODUCTION

BOLO 5.0 is a web application that allows police to distribute electronic BOLOs (Be on the Lookout) flyers so that other officers in the area can have instant access to them. This is meant to enhance the current system, which uses the following strategies to create and disseminate BOLOs: alerts over police radio, computer-aided dispatch that is dependent on antiquated hardware, and paper printed posters for manual distribution.

This introductory section has the purpose of describing the Current System used by Pinecrest Police Department to distribute BOLOs, it also provides an overview of the new approach provided by current project and the advantages of its use in order to reduce crime within our communities.

Current System

The current approach used by Pinecrest Police Department to create “Be On the Look Out” (BOLO) flyers is not efficient. Several hours may pass before a paper report is distributed to all officers on duty. Alerts over police radio, computer-aided dispatch and paper printed posters are not enough to achieve the goal of keeping all officers up to date with the recent BOLOs.

Besides been slow, the current system has high costs due to the number of people and resources required to share the BOLOs. In order to fight crime as effectively as possible the current system needs to be redesign and updated using new technologies.

Purpose of New System

BOLO 5.0 was designed to be accessed using the devices most used by police officers: in-patrol computers and mobile devices. It takes advantage of new cloud-based technologies to reduce downtime of this important application.

The system allows officer to quickly access all active BOLOs and to create and distribute new flyers via email. The system also allows users to attach images to the BOLOs, which are quickly distributed within the BOLO flyer.

Another advantage of the current system is the ability to efficiently search inactive BOLOs without having to go over thousands of paper reports.

USER STORIES

This is a comprehensive list of the user stories that were implemented for the fifth version of BOLO. All the user stories compiled here were requested by the product owner and delivered on time.

Implemented User Stories

Sprint 1

(05/23/2016 - 06/05/2016)

User Story #887 Remove unnecessary data from email alert

- As a user, I would not like to see unnecessary information in the BOLO alert

User Story #892 Expire passwords in 90 days

- As a System Administrator I would like for user passwords to expire every 90 days so that I can increase the security of the system.

User Story 882 Implement WildCard search field

- As an Officer I would like to use a wildcard field when searching BOLOs, so the search can be expanded to cover all fields at once

User Story #888 Open PDF documents in new tab

- As an officer I would like PDFs to open in a new tab so there is no need to click the back button on the browser.

User Story #894 Update all Pages to Bolo v5.0

- As the System Administrator I would like the application to reflect its current version (5.0) so it is up to date with the new release

User Story #895 Create template for Theft-Boat BOLO

- As a user, I would like to be able to select a template for a Theft-Boat BOLO, so the data according to this category will be shown

User Story #881 Create template for Theft-Auto BOLO

- As a user, I would like to be able to select a template for a Theft-Auto BOLO, so the data according to this category will be shown

Sprint 2

(06/06/2016 - 06/19/2016)

User Story #893 Authenticate password reset confirmation

- As a User I would like for it to be required to use the password confirmation authentication when resetting my password so that I can confirm I have entered the password I believe I have entered.

User Story #919 Adjust timeout session

- As a user of the system I would like to have the system give me a five more minutes to work with other documents on a case without timing out me out so frequently.

User Story #930 Send email notification after password has been reset

- As a user I would like to receive an email notification when my password is reset so that I know if someone else has reset my password.

User Story #879 Confirm BOLO via email after creation

- As a System Administrator I would like for officers to confirm a BOLO creation via email before the BOLO is created so that we ensure that officers who are let go cannot create any further BOLOs since their email account will be disabled.

User Story #891 Prevent password from displaying in url

- As a user I would not like my password to be displayed in the address bar after purging.

User Story #880 Send feed of BOLOs as JSON documents

- As a System Administrator I would like all BOLOs to be sent to subscribed entities as JSON documents so they may be exported to other systems

User Story #920 Compress images upon upload

- As System Administrator I want the application to compress all images loaded into the system to decrease the size of emails sent to users

User Story #896 Create specific Bolo for Theft-Auto

- As a user, I would like to be able to create a specific Theft-Auto BOLO, so the data according to this category will be shown

User Story #932 View Bolo Details for Theft-Auto

- As a user, I would like to be able to view details for Theft-Auto BOLO, so the view will be shown

User Story #933 Edit bolo for Theft-Auto

- As a user, I would like to be able to edit the bolo for Theft-Auto BOLO, so changes will be updated automatically

User Story #936 Create specific Bolo for Theft-Boat

- As a user, I would like to be able to create a specific Theft-Boat BOLO, so the data according to this category will be shown

User Story #937 View Bolo Details for Theft-Boat

- As a user, I would like to be able to view details for Theft-Boat BOLO, so the view will be shown

User Story #938 Edit Bolo for Theft-Boat

- As a user, I would like to be able to edit the bolo for Theft-Boat BOLO, so changes will be updated automatically

Sprint 3

(06/20/2016 – 07/03/2016)

User Story #934 Remove empty fields from PDF bolo for display

- As a user I would like to have the empty fields removed from each bolo for displayed as a PDF for reading because it will reduce the amount of searching for the needed information.

User Story #935 Add drop down menu for links such as settings, user guide, logout and others to be added at a later time

- As a user I would like to have some of the items on the menu bar combined in a drop down where it is less busy and easier to find things of the same nature. Features such as setting, user guide, and logout can be combined within a drop down.

User Story #1006 Add a user guide page for each tier

- As a user I would like to have a user's guide specific to each level of user because it will make using the application easier

User Story #1046 Add an about us page

- As a user I would like to have an about us page because it will nice to know the history of the BOLO flyer

User Story #1011 Filter BOLOS by author and reformat the dropdown

- As a user I would like to filter BOLOS by the ones I created, zipcode, and by bolos created by multiple agencies so that I can have a better global view of BOLOS.

User Story #1009 Automate database creation via scripts

- As a developer I would like to have a solution to implement the automation of the database initialization in order to save developer time.

User Story #1008 Prevent user email domain from being something other than their agency's domain

- As a system administrator I would like to limit my officers to having only their work email registered in the system in order to increase the security of the system

User Story #889 Change bolo email to noreply

- As a user I would like to receive emails from an email called noreply@boloflyer.com in order to prevent users from trying to email back the sending address.

User Story #931 Create script to reset DB Schema

- As a System Administrator I would like to have a script to update the schema of the database so data is not lost every time the database is updated.

User Story #985 Enhance ImageService

- As a System Administrator I would like to change the behavior of the Image Service so the style and quality of the BOLO flyer is enhanced

User Story #986 Unsubscribe from BOLO emails

- As an officer I would like to be able to unsubscribe from BOLOs from a particular agency so I do not receive any future alerts from that agency in the future

User Story #1001 Implement routes with authentication

- As a System Administrator I would like to keep original URLs when non-authenticated users access the system so users do not need to navigate to the pages after login

User Story #1007 Redesign Filter by Agencies in Home page

- As a System Administrator I would like to reformat the Filter by Agency so it shows only BOLOs related to the particular agency selected and the number of pages is accurate.

User Story #1033 Fix several bugs

- As a System Administrator I would like to have all bugs solved so they do not replicate on the Production environment.

User Story #990 Redesign and add validations for General Bolo Template

- As a user, I would like to use a redesigned page with field validation for General Bolo, so the new view will be shown

User Story #981 Implement Search for New Bolo Templates

- As a user I would like to use a search for the new Bolo Templates, so the search can be used for Theft-Auto and Theft-Boat Bolo's

User Story #991 Redesign and add validations for Theft Auto Template

- As a user, I would like to use a redesigned page with field validation for Theft-Auto Bolo, so the new view will be shown

User Story #992 Redesign and add validations for Theft Boat Template

- As a user, I would like to use a redesigned page with field validation for Theft-Boat Bolo, so the new view will be shown

User Story #1030 Delete the Ongoing Status from Bolo

- As a user, I would like that old bolos do not show the ongoing status, so that status will be blank

Sprint 4

(07/04/2016 – 07/17/2016)

User Story #1010 Create a front end page for root to customize system settings

- As root I would like to have access to change our agency domain where I do not manually have to create a new agency and transfer information to the new agency if our agency name changes, in addition I would like to have access to change other features like timeout session and brute force attempts against the email login.

User Story #1096 Implement a link to download a PDF of the user's guide based on user's tier

- As a user I would like to get the user's guide as a PDF so I can download it and read it later without logging back into the system.

User Story #1097 Implement an About Miami Dade County Association of Chief of Police (MDCACP) page

- As an potential financial investor of the BOLO flyer, I would like to have a way to learn details of the MDCACP who are the main sponsors of the BOLO flyer so I can make an acquitted decision for investing in BOLO flyer.

User Story #1098 Create an about us page for Florida International University's (FIU) contribution

- As a potential financial investor of the BOLO flyer, I would like to have a way to learn details of FIU's contribution who are the developers of the BOLO flyer so I can make an acquitted decision for investing in BOLO flyer.

User Story #1099 Create an about us page for IBM's contribution

- As a potential financial investor of the BOLO flyer, I would like to have a way to learn details of IBM's contribution, who are the Mentors and what products of IBM are used for the BOLO flyer so I can make an acquitted decision for investing in BOLO flyer.

User Story #1100 Create a page where root can retrieve data for analysis

- As root, I would like to retrieve the information about different crimes and to run analysis on them to compare against today's system before BOLO

User Story #1014 Lock user account after 10 incorrect login attempts

- As a system administrator I would like to lock user accounts after they have tried to incorrectly login to the system 10 amount of times in order to prevent against brute force attacks.

User Story #1038 Filter by multiple agencies in bolo list page

- As a User I would like to filter bolos by any combination of the agencies they belong to so that I can easily see the bolos in neighboring agencies.

User Story #890 Implement Watermarks for agencies

- As a System Administrator I would like all agencies to have the option of adding watermarks to their BOLOs so the flyers' style are unique by Agency

User Story #1037 Allow Tier 3 users to control Agency settings

- As a System Administrator I would like Agency Administrators to be able to edit the information for their own Agency so the Agency Management does not require Root intervention.

User Story #1081 Prevent Tier 3 users from granting Root access

- As a System Administrator I would like to prevent Agency Administrators from granting Root Access so the security layer is not vulnerable to be changed from lower tier users

User Story #1083 Prevent Officers from previewing PDFs before confirmation

- As a System Administrator I would like to prevent Officers from viewing BOLO PDFs before confirmation so no flyer is distributed without prior validation

User Story #1087 Implement time retrieval points for data analysis for Create Bolo (General - Auto - Boat)

- As research analyst, I would like to have specific time analysis points implemented when the Bolos are created, so I will be able to use those points of reference for comparison for data analysis

User Story #1119 Implement time retrieval points for data analysis for Edit Bolo (General - Auto - Boat)

- As research analyst, I would like to have specific time analysis points implemented when the Bolos are updated, so I will be able to use those points of reference for comparison for data analysis

User Story #1088 Deactivate and Activate User Accounts from Root and Administrator

- As a root administrator, I would like to be able to activate or deactivate users form the user management view, so these process can be done fast

Sprint 5

(07/18/2016 – 07/31/2016)

User Story #1094 Implement confirmation of BOLO updates

- As a System Administrator I would like to have email confirmations when BOLOs are updated, in order to avoid having inactive officers submitting incorrect information.

User Story #1155 Change PDF labels

- As a System Administrator I would like bigger headers in the BOLO flyers so officers can notice changes in BOLO status faster.

User Story #1086 Change Interactive Edit Menu to Static Label for Status. Keep Data Field Contents After Validations When a New User and a New Agency is Created. Add New Aesthetic for Bolo Buttons

- As a root I would like to see the Bolo list and Bolo Agency with a static status, keeping data after validations when enter a new user or agency, new aesthetic for details, edit, buttons, so nobody can edit a Bolo form the status menu. Also, keeping data after a validation for new user and new agency, saving time typing it again

User Story #1089 Show Edit and Archive only for Root and Administrators and Only View for Users. Create the functionality to go back for Details for Bolos (General, Auto and Boat). Create the ability for view a Bolo when it is Archived, and show edit and restore for Root

- As a root I would like have a different view from the users, also a button to go back when a detail view is shown, and see the details from an archived Bolo, so the view can be different, also can go back from details and view a Bolo when is archived

User Story #1163 Connect system setting page to backend

- As a root I would like to have control of the login attempts and time out setting because it might be necessary to reduce the amount of login attempts to prevent brute force attacks and it might be necessary to give officers more time to fill out a BOLO

User Story #1164 connect data analysis page to backend

- As root I would like to have a way to download BOLO information to run analysis on it because it will be nice to figure out what kind of affect a new system like BOLO has on crime compared to before BOLO

PROJECT PLAN

The primary goal of version 5 of the BOLO application was to add to the effort of the previous iteration of the application. The features implemented in this iteration would allow the BOLO application to reach a pilot stage. The last release of the application was stable and therefore this iteration did not require any modifications to the platform. The application was hosted on IBM Bluemix running on a node.js server with an express.js backend. Front end content was rendered using express.js and the jade templating engine.

Below are the recommended hardware specifications as well as the required software needed to run the application from a developers point of view.

Hardware and Software Resources

In order to develop and deploy the application some hardware and software is required. The following sections will describe the environments needed.

Development Environment

In order to develop the application, the follow hardware specs are recommended:

- Windows/Apple Computer
- Min of 8Gb of RAM
- At least 128 GB of disk space
- At least 2.0 GHZ processor

For software, developers will need to have working knowledge of JavaScript as well as the following:

- Experience with Jade Templating for HTML
- Node.js 4.2+
- o Node is a JavaScript runtime environment which is used in the project as the server.
- NPM
- o NPM is the package manager for node.js. It is used to install project dependencies as well as to automate the execution of the application testing and miscellaneous scripts.
- Express Framework
- o Express is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications.
- Preferred IDE
- Preferred Development Environments were Webstorm IDE or Atom

Deployment Requirements

The project is targeted for deployment on the IBM Bluemix Platform-as-a-Service Cloudfoundry environment. Besides an IBM Bluemix account the following is also required.

- Cloudant NOSQL Database
- o Access tokens are required to be set as environment variables for the application to work in both deployment and development.
- SendGrid

- This is the service the application uses for sending notifications. An api key was required from SendGrid in order to successfully run the application locally and in production.

Sprints Plan

These are the user stories that were released per sprint.

Sprint 1

(05/23/2016 - 06/05/2016)

User Story #887 Remove unnecessary data from email alert

Acceptance Criteria:

- Get rid of:
- Hi,

Suspect	
First Name:	asrgf
Last Name:	asdfg
Sex:	Female
Race:	White
Height:	06-06
Weight:	900
Hair Color:	Red
Address:	N/A
Tattoos:	zsdfhasdtjsrfyjrsfh
Drivers License:	c221-125-25-25--5
Date Of Birth:	12/12/2020
Summary	
QDEF	
Additional Information	
def	
Media	
Video URL:	N/A
Images:	
unsub.JPG	

-- The Bolo Flier Creator Team

Related Tasks:

- Documentation
- Go into code/src/web/views/email/new-bolo-notification and delete extends ./layout.jade
- Go into code/src/web/views/email/new-bolo-notification and delete include ./_bolo-details.jade
- Go into code/src/web/views/email/update-bolo-notification and delete extends ./layout.jade
- Go into code/src/web/views/email/update-bolo-notification and delete include ./_bolo-details.jade

- Remove code/src/web/views/email/layout.jade because previous actions of step 1 and 3 will render the layout.jade class useless
- Remove code/src/web/views/email/_bolo-details.jade because previous actions of steps 2 and 4 will render the _bolo-details.jade class useless
- Testing to verify whether unnecessary data is removed

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp1-1 and Dynamic UML Diagrams, Figure sp1-1

User Story #892 Expire passwords in 90 days**Acceptance Criteria:**

- When user's password expires it gets changed to a random string
- They will be prompted to change their password
- They will be notified 5 days prior to the password expiring

Related Tasks:

- Modify backend to update passwordLifetime field
- Add new password lifetime field to user model
- Modify passport login strategy

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp1-2 and Dynamic UML Diagrams, Figure sp1-2

User Story #882 Implement WildCard search field**Acceptance Criteria:**

- Officers are able to search all fields by filling out the wildcard field
- Wildcard feature must be able to interact with the Match Field feature so both can be used at the same time

Related Tasks:

- Update DB reset scripts to include new BOLO search index
- Customize query string change when wildcard search used
- Expand Cloudant Index for Bolo Search
- Create Wildcard field on Search Form

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp1-3 and Dynamic UML Diagrams, Figure sp1-3

User Story #888 Open PDF documents in new tab

Acceptance Criteria:

- All PDFs open in a new tab instead of in the same window.

Related Tasks:

- Update bolo-details.jade template

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp1-4 and Dynamic UML Diagrams, Figure sp1-4

User Story #894 Update all Pages to Bolo v5.0**Acceptance Criteria:**

- All navigations show BOLO 5.0 instead of Bolo 4.0

Related Tasks:

- Update all Pages to Bolo v5.0
- Update login template

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp1-5 and Dynamic UML Diagrams, Figure sp1-5

User Story #895 Create template for Theft-Boat BOLO**Acceptance Criteria:**

- The user should be able to choose the category Theft-Boat BOLO
- The system will display the required fields for this specific category

Related Tasks:

- Create the new Theft-Boat template view
- Modify the bolo-create-form view to add functionality
- Add functionality when select the option Theft-Boat-specific data will be shown

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp1-6 and Dynamic UML Diagrams, Figure sp1-6

User Story #881 Create template for Theft-Auto BOLO**Acceptance Criteria:**

- The user should be able to choose the category Theft-Auto BOLO
- The system will display the required fields for this specific category

Related Tasks:

- Create the new Theft-Auto template view
- Modify the bolo-create-form view to add functionality
- Add functionality when select the option Theft-Auto, specific data will be shown

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp1-7 and Dynamic UML Diagrams, Figure sp1-7

Sprint 2

(06/06/2016 - 06/19/2016)

User Story #893 Authenticate password reset confirmation

Acceptance Criteria:

- Not allowed to reset password without entering both a new password and a confirmation of the new password.

Related Tasks:

- write use case
- draw up diagrams
- sequence
- use case
- class
- modify the helper function at path code/src/web/lib to reflect true for the confirm password value must be filled upon the submit button being clicked.
- Test
- Report

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-1 and Dynamic UML Diagrams, Figure sp2-1

User Story #919 Adjust timeout session

Acceptance Criteria:

- The timer session must time out at ten minutes to allow officers to complete other task within a case they are working on, including confirm bolo which may take up to several minutes to receive the confirmation email depending on internet congestion.

Related Tasks:

- Write use case
- draw up diagrams
- sequence

- use case
- class
- Increase the variable session at path code/src/web/ to reflect an increase of timer counter to ten minutes from five minutes.
- Test
- Report

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-2 and Dynamic UML Diagrams, Figure sp2-2

User Story #930 Send email notification after password has been reset

Acceptance Criteria:

- An email has been sent to the user notifying the user their password has been reset

Related Tasks:

- Use case
- Diagrams
- use case
- sequence
- class
- implementation
- testing
- user guide

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-3 and Dynamic UML Diagrams, Figure sp2-3

User Story #879 Confirm BOLO via email after creation

Acceptance Criteria:

- An email is sent to the email of the person that is created with information about the BOLO that was just created
- Upon clicking on the link provided an email the BOLO is confirmed and created.

Related Tasks:

- Confirm bolo via email
- Create new post route to receive bolo confirmation
- Modify create-bolo route
- Modify Jade page to filter bolos
- Edit Bolo schema to include confirmation token

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-4 and Dynamic UML Diagrams, Figure sp2-4

User Story #891 Prevent password from displaying in url

Acceptance Criteria:

- Password is no longer displayed after purging bolos.

Related Tasks:

- Learn about event listeners

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-5 and Dynamic UML Diagrams, Figure sp2-5

User Story #880 Send feed of BOLOs as JSON documents

Acceptance Criteria:

- All new BOLOs are sent via email to required entities as JSON documents
- Log of the data transfer is showed

Related Tasks:

- Append new email function to BOLO Promise
- Create Data Subscriber Edit template
- Create Data Subscriber index
- Create Data Subscriber repository
- Create Data Subscriber service
- Create Data Subscriber schema
- Update admin-router
- Update admin-layout template

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-6 and Dynamic UML Diagrams, Figure sp2-6

User Story #920 Compress images upon upload

Acceptance Criteria:

- All images are compressed upon upload to application.
- All emails sent by the application are less than 1 MB size.

Related Tasks:

- Replace gm library with jimp library
- Set Agency-Insert method to use Image Service
- Change Agency-Update method
- Update Image Service

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-7 and Dynamic UML Diagrams, Figure sp2-7

User Story #896 Create specific Bolo for Theft-Auto**Acceptance Criteria:**

- The user should be able to choose the category Theft-Auto BOLO
- The system will display the required fields for this specific category
- The user will be able to preview the data
- The user will be able to preview the pdf
- The system will only create the Theft-Auto BOLO

Related Tasks:

- Add new data to the Bolo entity
- Connect the Theft-Auto bolo template
- Create new routes for Theft-Auto bolo template
- Add picture no photo available for Theft-Auto
- Add route for picture no photo available for Theft-Auto
- Create new view for preview
- Create new route for Theft-Auto bolo preview
- Create new view for Theft-Auto bolo preview pdf
- Add functionality to bolo-route, bolo-repository

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-8 and Dynamic UML Diagrams, Figure sp2-8

User Story #932 View Bolo Details for Theft-Auto**Acceptance Criteria:**

- The user should be able to view details for Theft-Auto BOLO
- The system will display the specific view
- The user will be able to generate a pdf

Related Tasks:

- Create new detail view for Theft-Auto

- Create the route for the details view
- Create new view for Theft-Auto pdf
- Create new route for Theft-Auto pdf

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-9 and Dynamic UML Diagrams, Figure sp2-9

User Story #933 Edit bolo for Theft-Auto

Acceptance Criteria:

- The user should be able to edit the BOLO for Theft-Auto
- The system will display the specific edit view
- The view will be populated with the current data
- The user will be able modify the related fields
- The system will be able to publish the updated data

Related Tasks:

- Create new edit view for Theft-Auto
- Create the route for the edit view
- Insert a confirmed token for the bolo

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-10 and Dynamic UML Diagrams, Figure sp2-10

User Story #936 Create specific Bolo for Theft-Boat

Acceptance Criteria:

- The user should be able to choose the category Theft-Boat BOLO
- The system will display the required fields for this specific category
- The user will be able to preview the data
- The user will be able to preview the pdf
- The system will only create the Theft-Boat BOLO

Related Tasks:

- Add new data to the Bolo entity
- Connect the Theft-Boat bolo template
- Create new routes for Theft-Boat bolo template
- Add picture no photo available for Theft-Boat
- Add route for picture no photo available for Theft-Boat
- Create new view for preview
- Create new route for Theft-Boat bolo preview

- Create new view for Theft-Boat bolo preview pdf
- Add functionality to bolo-route, bolo-repository

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-11 and Dynamic UML Diagrams, Figure sp2-11

User Story #937 View Bolo Details for Theft-Boat

Acceptance Criteria:

- The user should be able to view details for Theft-Boat BOLO
- The system will display the specific view
- The user will be able to generate a pdf

Related Tasks:

- Create new detail view for Theft-Boat
- Create the route for the details view
- Create new view for Theft-Boat pdf
- Create new route for Theft-Boat pdf

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-12 and Dynamic UML Diagrams, Figure sp2-12

User Story #938 Edit Bolo for Theft-Boat

Acceptance Criteria:

- The user should be able to edit the BOLO for Theft-Boat
- The system will display the specific edit view
- The view will be populated with the current data
- The user will be able modify the related fields
- The system will be able to publish the updated data

Related Tasks:

- Create new edit view for Theft-Boat
- Create the route for the edit view
- Insert a confirmed token for the bolo

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp2-13 and Dynamic UML Diagrams, Figure sp2-13

Sprint 3

(06/20/2016 – 07/03/2016)

User Story #934 Remove empty fields from PDF bolo for display

Acceptance Criteria:

- When a bolo is viewed or displayed in any way, any fields not filled in should not be displayed
- All fields should be displayed when the bolo is updated

Related Tasks:

- Documentation
- User story
- Diagrams
- Use case
- Sequence
- Class
- Code test

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-1 and Dynamic UML Diagrams, Figure sp3-1

User Story #935 Add drop down menu for links such as settings, user guide, logout and others to be added at a later time

Acceptance Criteria:

- Avoid crowding of the menu bar.
- Make it easier to add featured links in the future without crowding

Related Tasks:

- Test the new drop down button and new menu items work
- Add a link for the About Us page
- Add a link for the User Guide

Modeling

- No diagrams

User Story #1006 Add a user guide page for each tier

Acceptance Criteria:

- Root user has their own guide
- Admin user has their own guide

- Super visor user has their own guide
- officer user has their own guide

Related Tasks:

- Test each user can access their User Guide page
- Implement the details of the User guide page for all users

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-2 and Dynamic UML Diagrams, Figure sp3-2

User Story #1046 Add an about us page**Acceptance Criteria:**

- Display an information about the founders and development teams who took part in building BOLO flyer

Related Tasks:

- Test each user has access to the About Us page
- Implement an About Us page

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-3 and Dynamic UML Diagrams, Figure sp3-3

User Story #1011 Filter BOLOS by author and reformat the dropdown**Acceptance Criteria:**

- Filter BOLOS by "My Bolos" should only display BOLOS created by the logged in user
- Reformat dropdown so user only sees All Bolos, My Bolos, and Their agencies link
- Create another dropdown with the other agencies.

Related Tasks:

- Add new view to the database
- Edit bolo creation algorithm
- Add new bolo service function and bolo cloudant function
- Add new filter "My Bolos"

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-4 and Dynamic UML Diagrams, Figure sp3-4

User Story #1009 Automate database creation via scripts

Acceptance Criteria:

- Database is torn down and built with a simple command

Related Tasks:

- Implement automation with gulp
- Research options

Modeling

- No diagrams

User Story #1008 Prevent user email domain from being something other than their agency's domain

Acceptance Criteria:

- When Root creates an agency there should be an obligatory field to fill out for agency domain
- When Root creates a user he has the freedom to set any email for that user
- When an Admin wants to create a user for his agency that users domain is limited to be the admin's agency' domain
- When a Root user wants to edits an agency he should have the ability to change the agency domain field.

Related Tasks:

- Validate user creation form
- Edit user creation page
- Edit Agency edit page
- Edit agency create page
- Edit agency database model

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-5 and Dynamic UML Diagrams, Figure sp3-5

User Story #889 Change bolo email to no-reply

Acceptance Criteria:

- Any emails that are received should originate from noreply@boloflyer.com

Related Tasks:

- Change the email variable

Modeling

- No diagrams

User Story #931 Create script to reset DB Schema**Acceptance Criteria:**

- Changes inserted into the database update script are reflected in Cloudant.
- No document is missing after the database is updated

Related Tasks:

- Integrate with existing design Documents
- Create method to update views
- Create method to update indexes

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-6 and Dynamic UML Diagrams, Figure sp3-6

User Story #985 Enhance ImageService**Acceptance Criteria:**

- Images are compressed to less than 1 MB size
- Images in BOLO flyers keep the same layout regardless of original size of the image
- Images keep good quality standards.

Related Tasks:

- Edit pdfs templates for BOLOs
- Update image-service compression settings

Modeling

- No diagrams

User Story #986 Unsubscribe from BOLO emails**Acceptance Criteria:**

- When users click on the link they are unsubscribed from the specific agency
- Users are authenticated before been unsubscribed.

Related Tasks:

- Create Method for change user notifications
- Update Account Router
- Update Bolo Notification Template

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-7 and Dynamic UML Diagrams, Figure sp3-7

User Story #1001 Implement routes with authentication

Acceptance Criteria:

- Users are asked to authenticate when they access the system regardless of the URL they are using,
- Users are routed to the original URL after login

Related Tasks:

- Update user service to re-direct to original request
- Update app.js to keep original request

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-8 and Dynamic UML Diagrams, Figure sp3-8

User Story #1007 Redesign Filter by Agencies in Home page

Acceptance Criteria:

- Only BOLOs from the Agency selected are shown
- The number of pages shown relates to the number of BOLOs for the particular agency

Related Tasks:

- Create algorithm to skip results in Cloudant DB search
- Update BOLO service
- Update BOLO repository algorithm for filter

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-9 and Dynamic UML Diagrams, Figure sp3-9

User Story #1033 Fix several bugs

Acceptance Criteria:

- Fix all the issues reported with the subscription management when the agency's names is composed by two words.
- Fix the login from shortcuts saved on Apple devices as PNG files.

Related Tasks:

- Fix unsubscription on Agencies with names with more than one word
- Fix routing when login in from shortcuts on Apple devices

Modeling

- No diagrams

User Story #990 Redesign and add validations for General Bolo Template

Acceptance Criteria:

- The general Bolo template will include two new fields: address and zip code
- The preview, view, edit, preview pdf, generate pdf for general bolo have to be working
- Validations of different fields will be included

Related Tasks:

- Add zip code variable to Bolo entity
- Add zip code field to general Bolo template
- Add id values to mixins input_text and select_options
- Add zip code field to the preview view
- Add zip code and address to preview pdf and generate pdf, adding the validation of show only if they are not blank
- Add zip code to the details view
- Add zip code and address to the edit view
- Removed ‘N/A’ option and sorted alphabetically
- Add validations for different fields and placeholders

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-10 and Dynamic UML Diagrams, Figure sp3-10

User Story #981 Implement Search for New Bolo Templates**Acceptance Criteria:**

- The search will work with Theft-Auto Bolo
- The search will work with Theft-Boat Bolo

Related Tasks:

- Creation of a new Drop Menu for Search Bolo with three categories: General Bolo, Theft-Auto and Theft-Boat
- Creation of new page for Theft-Auto Search
- Creation of new page for Theft-Boat Search
- Creation of index for the attributes for Theft-Auto
- Creation of index for the attributes for Theft-Boat
- Creation of new routes for the new pages
- Creation of service for the new pages

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-11 and Dynamic UML Diagrams, Figure sp3-11

User Story #991 Redesign and add validations for Theft Auto Template

Acceptance Criteria:

- The Theft – Auto template will include a new redistribution and new fields
- The preview, view, edit, preview pdf, generate pdf for Theft Auto bolo have to be working
- Validations of different fields will be included

Related Tasks:

- Creation of new variables and attributes
- Reorganization and re connection of the page
- Reorganization and update
- Addition to pdf service the new attributes for preview pdf
- Reorganization and update of attributes for auto details
- Reorganization and update of attributes for bolo edit auto form and addition of attributes for pdf view
- Creation of new file for scripts
- Addition of validations for the different fields to the script file

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-12 and Dynamic UML Diagrams, Figure sp3-12

User Story #992 Redesign and add validations for Theft Boat Template**Acceptance Criteria:**

- The Theft – Boat template will include a new redistribution and new fields
- The preview, view, edit, preview pdf, generate pdf for Theft Boat bolo have to be working
- Validations of different fields will be included

Related Tasks:

- Creation of new variables and attributes
- Reorganization and re connection of the page
- Reorganization and update
- Creation of three new sections for theft boat: vessel, propulsion and trailer
- Addition to pdf service the new attributes for preview pdf
- Reorganization and update of attributes for boat details
- Reorganization and update of attributes for bolo edit auto form and addition of attributes for pdf view
- Addition of validations for the different fields to the script file

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp3-13 and Dynamic UML Diagrams, Figure sp3-13

User Story #1030 Delete the Ongoing Status from Bolo**Acceptance Criteria:**

- After the period of time designed the bolo status will not be “ongoing” anymore, only blank will be shown

Related Tasks:

- Remove “ongoing” status after the expiration time from Bolos

Modeling

- No diagrams

Sprint 4

(07/04/2016 – 07/17/2016)

User Story #1010 Create a front end page for root to customize system settings**Acceptance Criteria:**

- link for the ability to change agency domain
- link for the ability to change brute force attempts
- link for the ability to change system timeout session

Related Tasks:

- Test root access to the system settings page
- Implement interface to give root access to customize system settings

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-1 and Dynamic UML Diagrams, Figure sp4-1

User Story #1096 Implement a link to download a PDF of the user's guide based on user's tier**Acceptance Criteria:**

- a link on the user's guide page to download a PDF version of the user's guide
- user guide for the root
- user guide for an administration
- user guide for a supervisor
- user guide for an officer

Related Tasks:

- Test the implementation of the PDF for the "User's Guide"
- Create a page that will create a PDF of the user's guide

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-2 and Dynamic UML Diagrams, Figure sp4-2

User Story #1097 Implement an About Miami Dade County Association of Chief of Police (MDCACP) page

Acceptance Criteria:

- implement an about MDCACP page for BOLO
- MUST not require login credentials to view
- Must have a logo that links to the MDCACP website

Related Tasks:

- test the implementation of the MDCACP page
- create the about us page for A.C.O.P.

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-3 and Dynamic UML Diagrams, Figure sp4-3

User Story #1098 Create an about us page for Florida International University's (FIU) contribution

Acceptance Criteria:

- Implement an about FIU's Contribution page for BOLO
- Must be mobile responsive
- MUST not require login credentials to view
- Must have a logo that links to the FIU website
- Must have introduction for the professor Sadjadi
- Must have a link to his home page
- Must have introduction for the professor's TA, Mohsen
- Must have link to VIP page
- Must display by semester
- Each of student's images who worked on BOLO
- Student's name
- Student's email
- one main feature the student worked on
- graduation date

Related Tasks:

- Test the implementation of the FIU contribution page

- Create the about us page for FIU

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-4 and Dynamic UML Diagrams, Figure sp4-4

User Story #1099 Create an about us page for IBM's contribution

Acceptance Criteria:

- Implement an about IBM's Contribution page for BOLO
- Must be mobile responsive
- MUST not require login credentials to view
- Must have a logo that links to the product used for website
- Must have introduction for each mentor
- Must have a link to Mentor's web page (if available)

Related Tasks:

- Test the implementation of the IBM's contribution page
- Create the about us page for IBM

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-5 and Dynamic UML Diagrams, Figure sp4-5

User Story #1100 Create a page where root can retrieve data for analysis

Acceptance Criteria:

- Must include agency picker list to choose from where root is not required to select all data
- Must include date ranges where root is not required to select all data
- Must be easy to implement new search criteria at a later date.

Related Tasks:

- test roots access to the down load data for analysis page
- Implement down load data for analysis page for root

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-6 and Dynamic UML Diagrams, Figure sp4-6

User Story #1014 Lock user account after 10 incorrect login attempts

Acceptance Criteria:

- User is locked out of his account if he tried to incorrectly login 10 times
- User will be forced to reset his password if his account has been locked and is inactive.

- If user logs in successfully before the 10th try the counter will reset.
- When the user changes his password the account will also be reactivated

Related Tasks:

- Implement algorithm to lock user out of system
- Edit user db model
- Add functionality to passport authentication strategy

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-7 and Dynamic UML Diagrams, Figure sp4-7

User Story #1038 Filter by multiple agencies in bolo list page**Acceptance Criteria:**

- User must be able to select any permutation of agencies from a dropdown.
- After hitting submit, the user should be brought to a page where they can see the bolos from the agencies they selected.

Related Tasks:

- Implement backend algorithm to call agencies from the Database
- Create a call that sends the selected agencies to a backend route
- Implement a dropdown to select multiple agencies

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-8 and Dynamic UML Diagrams, Figure sp4-8

User Story #890 Implement Watermarks for agencies**Acceptance Criteria:**

- Root is able to add/change watermarks for all agencies
- If present, all BOLOs for the Agency have the watermark inserted.
- Watermarks are inserted in all PDF previews of the BOLOS

Related Tasks:

- Add validations to make Watermark optional
- Update BOLO pdf previews
- Update BOLO-preview
- Update Agency router
- Update Agency-Edit form
- Add WaterMark field to Create-Agency template

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-9 and Dynamic UML Diagrams, Figure sp4-9

User Story #1037 Allow Tier 3 users to control Agency settings

Acceptance Criteria:

- Tier 3 users have access to Agency management for their own agency only
- Tier 3 users able to control user subscriptions within their own agencies

Related Tasks:

- Implement subscription management on Agency Service
- Add fields to Agency Domain
- Update Admin-Agency page
- Update Admin Navigations

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-10 and Dynamic UML Diagrams, Figure sp4-10

User Story #1081 Prevent Tier 3 users from granting Root access

Acceptance Criteria:

- Admin users are only able to grant roles from Officer-Administrator
- Root users are able to grant any role

Related Tasks:

- Update User-Edit-Details template

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-11 and Dynamic UML Diagrams, Figure sp4-11

User Story #1083 Prevent Officers from previewing PDFs before confirmation

Acceptance Criteria:

- Option to view PDF is not available for Officers when BOLOs are created

Related Tasks:

- Update BOLO create route to avoid PDFs creation
- Update BOLO create Template

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-12 and Dynamic UML Diagrams, Figure sp4-12

User Story #1087 Implement time retrieval points for data analysis for Create Bolo (General - Auto - Boat)**Acceptance Criteria:**

- The new fields created date reported and time reported are required for create Bolo (General, Auto and Boat)
- The new Bolo cannot be submitted if these time retrieval points are empty
- These new fields should be shown in the preview and pdf view for General, Auto and Boat

Related Tasks:

- Create the new attributes for Bolos (General, Auto and Boat)
- Create the new indexes for these new attributes
- Create the fields date reported and time reported for data analysis in Create Bolos (General, Auto and Boat)
- Create the validations for date reported and time reported fields for Create Bolos (General, Auto and Boat)
- Create the ability for the submit button to be disabled if that data is not completed (General, Auto and Boat)
- Create the ability for be displayed in the preview view (General, Auto and Boat)
- Create the ability for be display in the pdf view (General, Auto and Boat)
- Fix PDF for overlapping columns

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-13 and Dynamic UML Diagrams, Figure sp4-13

User Story #1119 Implement time retrieval points for data analysis for Edit Bolo (General - Auto - Boat)**Acceptance Criteria:**

- The new fields created date recovered, time recovered, zip code recovered, agency recovered are required for Edit Bolo (General, Auto and Boat), while address recovered is not required
- The edited Bolo cannot be submitted if these time retrieval points are empty
- The new fields should be shown in the view details and pdf view for General, Auto and Boat

Related Tasks:

- Create the fields date recovered, time recovered, address recovered, zip code recovered and agency recovered,for data analysis in Update Bolos (General, Auto and Boat)
- Create the validations for date recovered, time recovered, zip code recovered and agency recovered fields for Update Bolos (General, Auto and Boat)
- Create the ability for these fields to be hidden and to be shown when an update occurs

- Create the ability for the submit button to be disabled if that data is not completed (General, Auto and Boat)
- Create the ability for be displayed in the preview view (General, Auto and Boat)
- Create the ability for be display in the pdf view (General, Auto and Boat)

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-14 and Dynamic UML Diagrams, Figure sp4-14

User Story #1088 Deactivate and Activate User Accounts from Root and Administrator

Acceptance Criteria:

- The root administrator will see the button to activate / deactivate users into the user management view
- The button will change the status to active or inactive

Related Tasks:

- Create the new button to activate / deactivate
- Show the page with the status
- The button will change the status to active or deactivate
- Create the call in the user route
- Create the service for deactivate users
- Publish the route in index

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp4-15 and Dynamic UML Diagrams, Figure sp4-15

Sprint 5

(07/18/2016 – 07/31/2016)

User Story #1094 Implement confirmation of BOLO updates

Acceptance Criteria:

- Email confirmation is triggered when a BOLO is updated
- Information on BOLO is not changed until the BOLO is confirmed.

Related Tasks:

- Adapt update to change attachments
- Create algorithm to pull changes from temporary BOLO
- Create confirmation route
- Create Update email routes and methods
- Create temporary Bolo with changes

- Change BOLO domain to allow references

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp5-1 and Dynamic UML Diagrams, Figure sp5-1

User Story #1155 Change PDF labels**Acceptance Criteria:**

- Bolo status shows in font 23 and Bold

Related Tasks:

- Update PDF service

Modeling

- Refer to UML diagrams in Appendix A: Static UML Diagrams, Figure sp5-2 and Dynamic UML Diagrams, Figure sp5-2

User Story #1086 Change Interactive Edit Menu to Static Label for Status. Keep Data Field Contents After Validations When a New User and a New Agency is Created. Add New Aesthetic for Bolo Buttons**Acceptance Criteria:**

- Change Interactive Edit Menu to Static Label for Status.
- Keep Data Field Contents After Validations When a New User and a New Agency is Created.
- Add New Aesthetic for Bolo Buttons.

Related Tasks:

- Change Interactive Edit Menu to Static Label for Status.
- Keep Data Field Contents After Validations When a New User and a New Agency is Created.
- Add New Aesthetic for Bolo Buttons

Modeling

- No diagrams

User Story #1089 Show Edit and Archive only for Root and Administrators and Only View for Users. Create the functionality to go back for Details for Bolos (General, Auto and Boat). Create the ability for view a Bolo when it is Archived, and show edit and restore for Root**Acceptance Criteria:**

- Show Edit and Archive only for Root and Administrators and Only View for Users.
- Create the functionality to go back for Details for Bolos (General, Auto and Boat).
- Create the ability for view a Bolo when it is Archived, and show edit and restore for Root and Administrators

Related Tasks:

- Show Edit and Archive only for Root and Administrators and Only View for Users.
- Create the functionality to go back for Details for Bolos (General, Auto and Boat).
- Create the ability for view a Bolo when it is Archived, and show edit and restore for Root and Administrators

Modeling

- No diagrams

User Story #1163 Connect system setting page to backend**Acceptance Criteria:**

- Select from one to all agencies
- Download must be a CSV file

Related Tasks:

- Test the connection of the back end
- Connect the interface to the back end

Modeling

- No diagrams

User Story #1164 connect data analysis page to backend**Acceptance Criteria:**

- Select from one to all agencies
- Download must be a CSV file

Related Tasks:

- Brute force attempts should have a minimum and a maximum number of 3 and 10
- System timeout setting should be as short as 10 minutes and as long as four hours

Modeling

- No diagrams

SYSTEM DESIGN

The system uses the hexagonal architecture, a variation of three tier. The domain layer determines the entire system since each domain is associated with services and repositories from the application layer. The hexagonal architecture allows the design to evolve the ports and adapters into micro-services.

The application is hosted on IBM Bluemix cloud platform. It uses some services provided through Bluemix, such as Cloudant (database) and Sendgrid (email service). Outside of the application layer there are other micro-services that interact with the application. The selected structure facilitates the scalability and maintainability of the system. It makes easy to add features without affecting essential functionalities.

This chapter provides an overview of the Architectural patterns used to design the application; it also describes the different subsystems in which the application was divided and the different Design patterns used. A Deployment diagram is included to depict how the system was implemented.

Architectural Patterns

BOLO 5.0 uses a Hexagonal architecture. There are five main elements that determine the system's functionality; users, agencies, bolos, data subscribers and system settings. These items determine the domain, from which all the system's features are derived. One advantage of this architectural pattern is the ability to have several layers for the different subsystems. All features within the application are determined through routes which transfer the requests a service, which send the correct call to a repository, which is the entity allowed to read and write from the Cloudant database. The multilayered approach provides advantages in terms of security, testing and scalability, since it makes easy to add new services without affecting core functionalities.

System and Subsystem Decomposition

BOLO 5.0 is divided into five major subsystems; agencies, users, bolos, data subscribers and system settings. All subsystems are composed by views, a router, a service, and a repository. The proper functionality of the system relies on the interaction among all 5 subsystems.

Agency Subsystem: It handles agency creation, edition, and deactivation. Without an agency, no user or bolo can exist in the system.

User Subsystem: It handles account and user management. It allows users to be created, edited, and deleted. It also oversees account functionality such as passwords, login, and logout.

Bolo Subsystem: Being the most extensive one, it manages all bolo-related functionality such as creation, previewing, PDF, Email, and others.

Data Subscriber Subsystem: It handles the data subscriber's management. Data Subscribers are third party systems that receive the feed of all new BOLOs as JSON documents.

System Settings Subsystem: It handles some core settings for the security of the application, such as session timeouts and number of login attempts before an account is locked. These settings are updated by Root users.

Deployment Diagram

Bolo 5.0 runs on IBM Bluemix cloud platform. It uses IBM Cloudant as database for document and attachment storage.

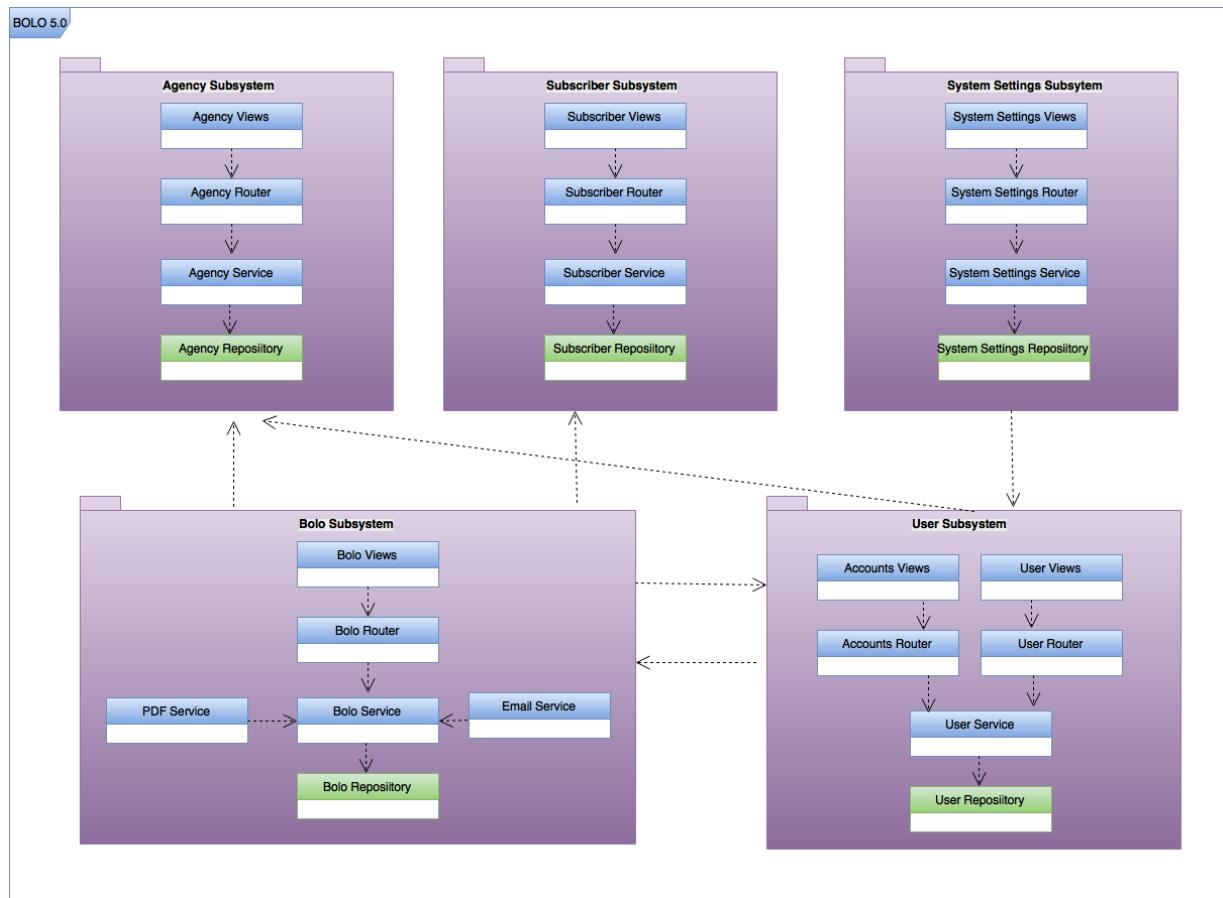


Figure 1 - Package diagram

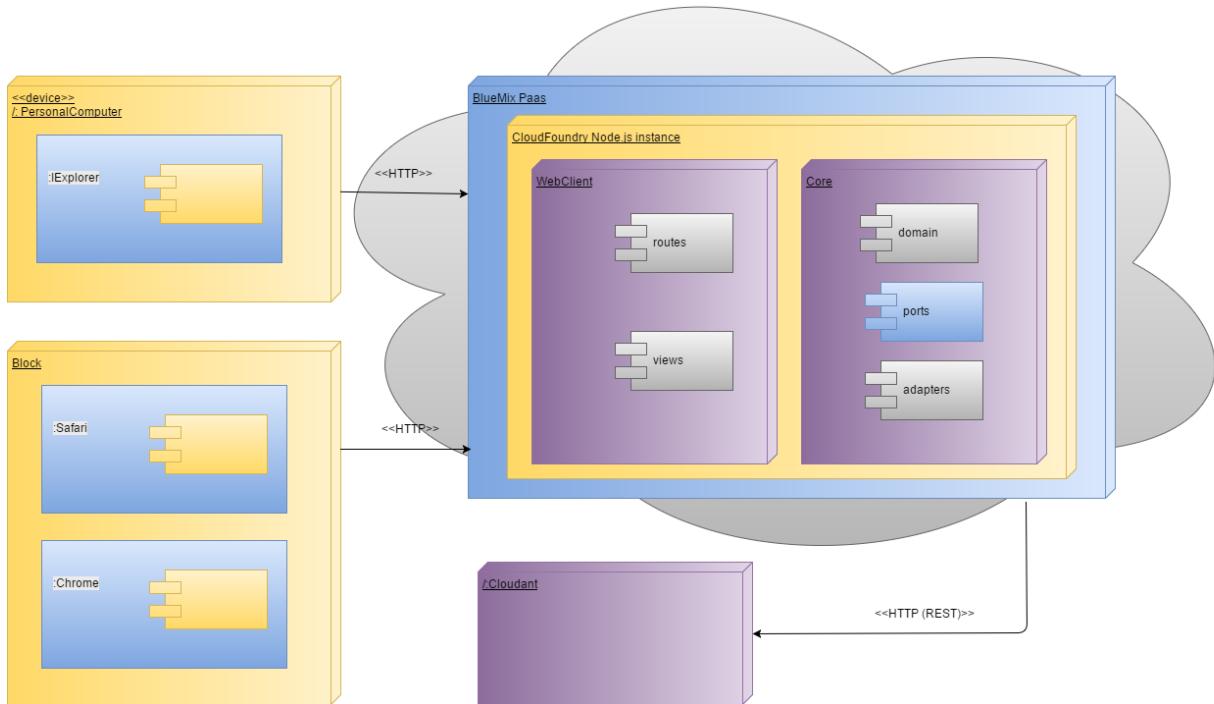


Figure 2 - General Deployment Diagram

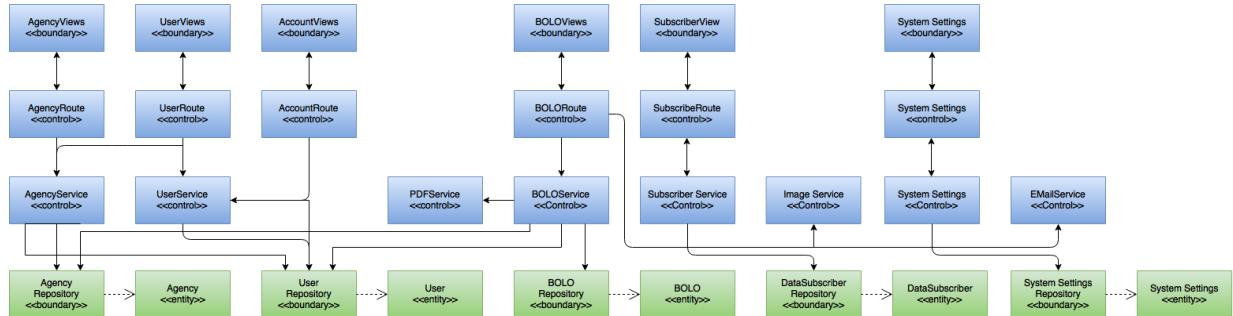


Figure 3 - Minimal Class Diagram

Design Patterns

The following design patterns were chosen during the last iteration of the system and they have been maintained for the current one:

- **Observer:** This is essential to maintain an organized execution of asynchronous calls in order to prevent the system from malfunctioning.
- **Adapter:** It is necessary to “adapt” the system to the services being utilized such as Sendgrid.
- **Repository:** This abstraction is used to mediate between the domain and the persistent data storage so that if the database service was to be changed, it can be done without altering the entire code.

SYSTEM VALIDATION

Unit test is essential to test all the layers within the application. All test cases used to validate User Stories developed are shown in this section.

User Story #887 - Remove unnecessary data from email alert

Unit Tests

Test ID: USD-887-001
Purpose: Verify whether sendgrid.send() bolo-notification email to subscribed users with unnecessary information removed.
Preconditions: User_email has been requested and received.
Input: (payload, function(err, json))
Expected Output: email notification has been delivered with additional text removed

Test ID: USD-887-002
Purpose: Verify whether sendgrid.send() bolo-notification email to subscribed users with unnecessary information removed.
Preconditions: User_email has been requested and received by helper functions
Input: (payload, function(err, json))
Expected Output: Console.log(err)

User Story #892 - Expire passwords after 90 days old.

Unit Tests

Test ID: U-892-1-Sunny Day
Purpose: Test that the user is logged in if password is not expired
Preconditions: User.passwordLifetime >= Date.now() + 5 days
Input: Username: jason, password: Jasoncohen1
Expected Output: Passport return User object with session key

Test ID: USD-892-2 Rainy Day
Purpose: Test that the user is not allowed logon if password is expired

Preconditions: User.passwordLifetime <= Date.now()
Input: Username: jason, password: Jasoncohen1
Expected Output: Passport return null

User Story #882 - Implement WildCard Search field.

Unit Tests

Integration Tests

Test ID: I-882-2
Purpose: Tests that wildcards are used along with regular search fields when MatchField checkbox is checked. (Search must follow same behavior as logical AND)
Preconditions: System must be functional, BOLO testBOLO must exist in database
Input: WildCard field="information", First Name= "someUser"
Expected Output: Null

User Story #888 - Open PDF documents in new tab.

Unit Tests

Test ID: U-888-1
Purpose: Test that PDFs open in new tab
Preconditions: System must be functional, BOLO testBOLO must exist in database
Input: Select View PDF for testBOLO
Expected Output: testBOLO PDF in new tab

User Story #894 - Update all Pages to Bolo v5.0.

Unit Tests

Test ID: U-894-1
Purpose: Validate that all pages show Bolo 5.0
Preconditions: System must be functional
Input: Access all navigations
Expected Output: All pages show Bolo 5.0 version

User Story #895 - Create template for Theft-Boat BOLO.

Unit Tests

Test ID: UT-895-001-Sunny Day
Purpose: Test Boat-Theft template view when the Boat - Theft option is selected

Preconditions: The create-bolo webpage is shown
Input: Boat-Theft option is selected
Expected Output: Render the data for the Boat-Theft template

Test ID: UT-895-002-Rainy Day
Purpose: Test Boat-Theft template view when the Boat - Theft option is not selected
Preconditions: The create-bolo webpage is shown
Input: General bolo option is selected
Expected Output: Render the data for the general bolo template

Integration Tests

Test ID: IT-895-001-Sunny Day
Purpose: Test show Boat-Theft template when that selection is chosen
Preconditions: The server is active, The user is logged in, The user is in the homepage
Input: The user clicks on create bolo button, The user chooses the THEFT - BOAT option from categories
Expected Output: The create BOLO webpage is populated with the related fields

Test ID: IT-895-002-Rainy Day
Purpose: Test show Boat-Theft template when another section is chosen
Preconditions: The server is active, The user is logged in, The user is in the homepage
Input: The user clicks on create bolo button, The user chooses an option different to THEFT - BOAT from categories
Expected Output: The create BOLO webpage is populated with values not related with the THEFT - BOAT template

User Story #881 - Create template for Theft-Auto BOLO.

Unit Tests

Test ID: UT-881-001-Sunny Day
Purpose: Test Auto-Theft template view when the Auto - Theft option is selected
Preconditions: The create-bolo webpage is shown
Input: Auto-Theft option is selected
Expected Output: Render the data for the Auto-Theft template

Test ID: UT-881-002-Rainy Day
Purpose: Test Boat-Theft template view when the Auto - Theft option is not selected
Preconditions: The create-bolo webpage is shown
Input: General bolo option is selected
Expected Output: Render the data for the general bolo template

Integration Tests

Test ID: IT-881-001-Sunny Day
Purpose: Test show Auto-Theft template when that selection is chosen
Preconditions: The server is active, The user is logged in, The user is in the homepage
Input: The user clicks on create bolo button, The user chooses the THEFT - Auto option from categories
Expected Output: The create BOLO webpage is populated with the related fields

Test ID: IT-881-002-Rainy Day
Purpose: Test show Auto-Theft template when another section is chosen
Preconditions: The server is active, The user is logged in, The user is in the homepage
Input: The user clicks on create bolo button, The user chooses an option different to THEFT - Auto from categories

Expected Output: The create BOLO webpage is populated with values not related with the THEFT - Auto template

User Story #893 - Authenticate password reset confirmation

Integration Tests

Test ID ISD-893.001

Purpose: This test is the confirmation password is required when resetting the user password as an administrator.

Preconditions: Administrator must be logged into the system and on the password reset page. This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button

Input:

Password = JASONcohen4

Confirmation password = JASONcohen4

Click submit button

Expected Output: The administrator is taken to their information page with an information message displayed stating, "User update successful."

Test ID: ISD-893.002

Purpose: This test is to authenticate the confirmation password is required when resetting the another user's password as an administrator.

Preconditions: Administrator must be logged into the system and on the password reset page for another employee. This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button

Input:

1. Password = JASONcohen2

2. Confirmation password = JASONcohen2

3. Click submit button

Expected Output: The administrator is taken to the user's information page with their information displayed with a message stating, "User update successful."

Test ID: ISD-893.003

Purpose: This test is the confirmation password is required when resetting the user password as an officer.

Preconditions: An officer must be logged into the system and on the password reset page (via email request). This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.

Input:

1. Password = JASONcohen1
2. Confirmation password = JASONcohen1
3. Click submit button

Expected output: The administrator is taken to their information page with an information message displayed stating, "User update successful."

Actual output: Pass

Test ID: IRD-893.004

Purpose: This test is to authenticate the confirmation password is required when resetting the user password as an administrator.

Preconditions: Administrator must be logged into the system and on the password reset page. This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.

Input:

1. Password = JASONcohen4
2. Confirmation password = Blank
3. Click submit button

Expected output: The administrator is redirected back to the password reset page with a message displayed stating, "Confirmation can't be blank."

Actual output: Pass

Test ID: IRD-893.005

Purpose: Test is the confirmation password is required when resetting another user's password as an administrator.

Preconditions: Administrator must be logged into the system and on the password reset page for another employee. This page should display two empty text fields, one for the password

and the other for the confirmation password. In addition it should also display a submit button.
Input:
1. Password = JASONcohen2 2. Confirmation password = Blank 3. Click submit button
Expected output: The administrator is redirected back to the password reset page with a message displayed stating, "Confirmation can't be blank."
Actual output: Pass

Test ID: IRD-893.006
Purpose: This test is to authenticate the confirmation password is required when resetting the user password as an officer.
Preconditions: An officer must be logged into the system and on the password reset page (via email request). This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.
Input:
1. Password = JASONcohen1 2. Confirmation password = Blank 3. Click submit button
Expected output: The officer is redirected back to the password reset page with a message displayed stating, "Confirmation can't be blank."
Actual output: Pass

User Story #919 - Adjust the timeout secession to ten minutes

Integration Tests

Test ID	ISD-919.001
Purpose	To verify the system automatically logs the root user out.
Pre Conditions	<ul style="list-style-type: none"> • The server and application are up and running. • Root user is logged in with valid credentials • System has received no input for 10 minutes
Inputs	None

Expected Outputs	Upon refresh, the root user will be taken back to the login page.
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Test ID	ISD-919.002
Purpose	To verify the system automatically logs an administrator out.
Pre Conditions	<ul style="list-style-type: none"> • The server and application are up and running. • Administrator user is logged in with valid credentials • System has received no input for 10 minutes
Inputs	None
Expected Outputs	Upon refresh, the root user will be taken back to the login page.

Test ID	ISD-919.003
Purpose	To verify the system automatically logs an officer out.
Pre Conditions	<ul style="list-style-type: none"> • The server and application are up and running. • Officer user is logged in with valid credentials • System has received no input for 10 minutes
Inputs	None
Expected Outputs	Upon refresh, the login page will be displayed

User Story #930 - Send email notification after my password has been reset

Integration Tests

Test ID: ISD-930-001
Purpose: This test is the confirmation password is required when resetting the user password as an administrator.
Preconditions: Administrator must be logged into the system and on the password reset page. This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.

Input: 1. Password = JASONcohen4 2. Confirmation password = JASONcohen4 3. Click submit button
Expected output: The administrator will receive an email their password has been changed.
Actual output: Pass

Test ID: ISD-930-002
Purpose: This test is to authenticate the confirmation password is required when resetting the another user's password as an administrator.
Preconditions: Administrator must be logged into the system and on the password reset page for another employee. This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.
Input: 1. Password = JASONcohen2 2. Confirmation password = JASONcohen2 3. Click submit button
Expected output: The administrator will receive an email about an account update
Actual output: Pass

Test ID: ISD-930-003
Purpose: This test is the confirmation password is required when resetting the user password as an officer.
Preconditions: An officer must be logged into the system and on the password reset page (via email request). This page should display two empty text fields, one for the password and the other for the confirmation password. In addition, it should also display a submit button.
Input: 1. Password = JASONcohen1 2. Confirmation password = JASONcohen1 3. Click submit button
Expected output: The officer will receive an email about their account update

Actual output: Pass

Test ID: IRD-930-004

Purpose: This test is to authenticate the confirmation password is required when resetting the user password as an administrator.

Preconditions: Administrator must be logged into the system and on the password reset page. This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.

Input:

1. Password = JASONcohen4
2. Confirmation password = Blank
3. Click submit button

Expected output: No email will be sent

Actual output: Pass

Test ID: IRD-930-005

Purpose: Test is the confirmation password is required when resetting the another user's password as an administrator.

Preconditions: Administrator must be logged into the system and on the password reset page for another employee. This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.

Input:

1. Password = JASONcohen2
2. Confirmation password = Blank
3. Click submit button

Expected output: No email will be sent

Actual output: Pass

Test ID: IRD-830-006

Purpose: This test is to authenticate the confirmation password is required when resetting the user password as an officer.

Preconditions: An officer must be logged into the system and on the password reset page (via email request). This page should display two empty text fields, one for the password and the other for the confirmation password. In addition it should also display a submit button.
Input:
1. Password = JASONcohen1 2. Confirmation password = Blank 3. Click submit button
Expected output: No email will be sent
Actual output: Pass

User Story #879 - Implement BOLO creation confirmations via email

Unit Tests

ID:	U-879-1 - Sunny Day
Purpose:	Create a BOLO and check that confirmation email is sent
Preconditions:	Application is running
Input:	{ category: theft, FirstName: Test, LastName: Bolo, Sex: male, Height: 05-09, Weight: 200, FeaturedImage: Bolo1.png }
Expected Output:	Bolo is created and email is sent out to subscribers

ID:	U-879-2
Purpose:	Try to confirm BOLO with incorrect token
Preconditions:	Email has been sent to user with generated bolo token
Input:	GET request to: http://bolo.mybluemix.net/bolo/confirmBolo/3d26d15ed51332d0919de93da07e762bbd470c
Expected Output:	System will respond that the bolo does not exist

Integration Tests

ID:	I-892-1
Purpose:	Test that the application confirms the bolo successfully
Preconditions:	System is running
Input:	http://bolo.mybluemix.net/bolo/confirmBolo/3d26d15ed51332d0919de93da07e762bb470c
Expected Output:	Bolo confirmed field is set to true

User Story #880 - Send feed of BOLOs as JSON documents

Unit Tests

ID:	U-880-1
Purpose:	Validate if Sendgrid service sends BOLOs as JSON objects to required active subscribers
Preconditions:	testBOLO has been confirmed
Input:	testBolo
Expected Output:	Email received with testBOLO

ID:	U-880-2
Purpose:	Validate if Sendgrid service sends BOLO's attachments to required active subscribers along with JSON object
Preconditions:	testBOLO has been confirmed and featured image has been inserted
Input:	testBolo
Expected Output:	Email received with testBOLO and featured image attached

Integration Tests

ID:	I-880-1
Purpose:	Validate if deactivation of Data Subscriber through Admin-router prevent the subscriber from receiving notifications
Preconditions:	testBOLO has been confirmed and testDataSubscriber has been inactivated
Input:	testBolo
Expected Output:	Email received with testBOLO and featured image attached by all active data subscribers, not by testDataSubscriber

User Story #920 - Compress images upon upload

Unit Tests

ID:	U-920-1
Purpose:	Validate System compress images bigger than threshold on Agency Creation.
Preconditions:	System Administrator fills all Agency fields
Input:	Images for Agency shield and logo
Expected Output:	Images are compressed to meet the system requirements

ID:	U-920-2
Purpose:	Validate System compress images bigger than threshold on Bolo Creation.
Preconditions:	System Administrator fills all Bolo fields
Input:	testBOLO
Expected Output:	All images loaded into the BOLO are compressed

Integration Tests

ID:	I-920-1
Purpose:	Validate that the System handles image compression correctly when creating

	the PDFs.
Preconditions:	testBOLO has been confirmed
Input:	testBOLO
Expected Output:	Email attachment received on BOLO creation is less than 50KB big

User Story #896 - Create Specific Bolo for Theft-Auto

Unit Tests

ID:	UT-896-001-Sunny Day
Purpose:	Test create Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> The create Theft-Auto webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document If the submit button is clicked on, store the bolo on cloudant and render the homepage

ID:	UT-896-002-Rainy Day
Purpose:	Test Theft-Auto template view when the Theft-Auto option is not selected
Preconditions:	<ul style="list-style-type: none"> The create-general-bolo webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document

	<ul style="list-style-type: none"> • If the submit button is clicked on, store the bolo on cloudant and render the homepage
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Integration Tests

ID:	IT-896-001-Sunny Day
Purpose:	Test create Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> • The server is active • The user is logged in • The user is in the homepage
Input:	<ul style="list-style-type: none"> • The user clicks on create bolo button • The user clicks on the Theft-Auto button • The create Theft-Auto BOLO webpage is populated and the user enters this info: Category (static): THEFT - AUTO; Vehicle Make: Toyota; Vehicle Model: Camry; Vehicle Color: Blue; Vehicle Year: 2015; Vehicle Type: xe; Vehicle Tag Number: 123xyz; Vehicle Identification Number (VIN): 1HGCM82633A004352; Featured ImageChoose File: sketch.png; Video Link: http://www.testauto.com; Additional Info: Testing info; Summary: Summary test. • The user clicks on the preview button • The user clicks on the pdf button • The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> • If the preview button is clicked on, the preview webpage is shown • If the preview pdf is clicked on, the previed pdf is shown • If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

ID:	IT-896-002-Rainy Day
Purpose:	Test create Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> • The server is active • The user is logged in • The user is in the homepage
Input:	<ul style="list-style-type: none"> • The user clicks on create bolo button • The user clicks on the Theft-boat button • The create Theft-Boat BOLO webpage is populated and the user enters this info: Category(static): THEFT - BOAT; Boat Make: Axopart; Boat Model: Axopart; Boat Color: White; Boat Year: 2015; Boat Type: Cruiser Boats; Boat Hull Identification Number: XXX12345M73EX;

	<p>Boat Registration Number: LA3717ZW; Featured ImageChoose File: boat.png; Video Link: http://www.testboat.com; Additional Info; Testing info; Summary: Summary test.</p> <ul style="list-style-type: none"> • The user clicks on the preview button • The user clicks on the pdf button • The user clicks on the homepage button
Expected Output:	<ul style="list-style-type: none"> • If the preview button is clicked on, the preview webpage is shown • If the preview pdf is clicked on, the preview pdf is shown • If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

User Story #932 - View Bolo Details for Theft-Auto

Unit Tests

ID:	UT-932-001-Sunny Day
Purpose:	Test details for Theft-Auto
Preconditions:	<ul style="list-style-type: none"> • The homepage is shown
Input:	<ul style="list-style-type: none"> • The user clicks on the details button • The user clicks on the pdf button
Expected Output:	<ul style="list-style-type: none"> • If the details button is clicked on, store the bolo on cloudant and render the homepage • If the pdf button is clicked on, the pdf document will be generated

ID:	UT-932-002-Rainy Day
Purpose:	Test details for Theft-Auto when details for Theft-Boat option is selected
Preconditions:	<ul style="list-style-type: none"> • The homepage is shown
Input:	<ul style="list-style-type: none"> • The user clicks on the details button for Theft-Boat • The user clicks on the pdf button
Expected Output:	<ul style="list-style-type: none"> • If the details button is clicked on, render the details view • If the pdf button is clicked on, the pdf document will be generated

Integration Tests

ID:	IT-932-001-Sunny Day
Purpose:	Test details for Theft-Auto
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on details button for Theft-Auto The user clicks on the generate pdf button
Expected Output:	<ul style="list-style-type: none"> If the details button is clicked on, the details view for Theft-Auto will be shown If the generate pdf button is clicked on, the pdf document will be shown

ID:	IT-932-002-Rainy Day
Purpose:	Test details for Theft-Auto
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on the details button for Theft-Boat The user clicks on the pdf button
Expected Output:	<ul style="list-style-type: none"> If the details button is clicked on, the details view for Theft-Boat will be shown If the generate pdf button is clicked on, the pdf document will be shown

User Story #933 - Edit Bolo for Theft-Auto

Unit Tests

ID:	UT-933-001-Sunny Day
Purpose:	Test edit Theft-Auto bolo

Preconditions:	<ul style="list-style-type: none"> The homepage is shown
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for Theft-Auto The user enters the data to be changed The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> The updated data will be stored in on cloudant and render the homepage

ID:	UT-933-002-Rainy Day
Purpose:	Test edit Theft-Auto bolo when another option is selected
Preconditions:	<ul style="list-style-type: none"> The homepage is shown
Input:	<ul style="list-style-type: none"> The user clicks on the details button for Theft-Boat The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> The system will retrieve the data details for Theft-Boat

Integration Tests

ID:	IT-933-001-Sunny Day
Purpose:	Test edit Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for Theft-Auto The user enters the date to be modified The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> The homepage is shown and the following message: BOLO successfully updated

ID:	IT-933-002-Rainy Day
Purpose:	Test edit Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage

Input:	<ul style="list-style-type: none"> The user clicks on the details button for Theft-Auto
Expected Output:	<ul style="list-style-type: none"> The details for Theft-Auto will be shown

User Story #936 - Create Specific Bolo for Theft-Boat

Unit Tests

ID:	UT-936-001-Sunny Day
Purpose:	Test create Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The create Theft-Boat webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document If the submit button is clicked on, store the bolo on cloudant and render the homepage

ID:	UT-936-002-Rainy Day
Purpose:	Test Theft-Boat template view when the Theft-Boat option is not selected
Preconditions:	<ul style="list-style-type: none"> The create-general-bolo webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document If the submit button is clicked on, store the bolo on cloudant and render the homepage

Integration Tests

ID:	IT-936-001-Sunny Day
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Purpose:	Test create Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the Theft-Boat button The create Theft-boat BOLO webpage is populated and the user enters this info: Category (static): THEFT - AUTO; Vehicle Make: Toyota; Vehicle Model: Camry; Vehicle Color: Blue; Vehicle Year: 2015; Vehicle Type: xe; Vehicle Tag Number: 123xyz; Vehicle Identification Number (VIN): 1HGCM82633A004352; Featured ImageChoose File: sketch.png; Video Link: http://www.testauto.com; Additional Info: Testing info; Summary: Summary test. The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown If the preview pdf is clicked on, the previed pdf is shown If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

ID:	IT-936-002-Rainy Day
Purpose:	Test create Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the Theft-auto button The create Theft-auto BOLO webpage is populated and the user enters this info: Category(static): THEFT - AUTO; Year: 2016; Make: Toyota; Model: Camry; Trim: Sport; Color: Black; License Plate: HGT854; Vehicle Identification Number (VIN): VHG123456789; Featured ImageChoose File: Car.png; Video Link: http://www.testauto.com; Additional Info: Testing Info; Summary: Summary Test The user clicks on the preview button The user clicks on the pdf button The user clicks on the homepage button
Expected	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown

Output:	<ul style="list-style-type: none"> • If the preview pdf is clicked on, the previed pdf is shown • If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created
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User Story #937 - View Bolo Details for Theft-Boat

Unit Tests

ID:	UT-937-001-Sunny Day
Purpose:	Test details for Theft-Boat
Preconditions:	<ul style="list-style-type: none"> • The homepage is shown
Input:	<ul style="list-style-type: none"> • The user clicks on the details button • The user clicks on the pdf button
Expected Output:	<ul style="list-style-type: none"> • If the details button is clicked on, store the bolo on cloudant and render the homepage • If the pdf button is clicked on, the pdf document will be generated

ID:	UT-937-002-Rainy Day
Purpose:	Test details for Theft-Boat when details for Theft-Auto option is selected
Preconditions:	<ul style="list-style-type: none"> • The homepage is shown
Input:	<ul style="list-style-type: none"> • The user clicks on the details button for Theft-Auto • The user clicks on the pdf button
Expected Output:	<ul style="list-style-type: none"> • If the details button is clicked on, render the details view • If the pdf button is clicked on, the pdf document will be generated

Integration Tests

ID:	IT-937-001-Sunny Day
Purpose:	Test details for Theft-Boat
Preconditions:	<ul style="list-style-type: none"> • The server is active • The user is logged in • The user is in the homepage
Input:	<ul style="list-style-type: none"> • The user clicks on details button for Theft-Boat

	<ul style="list-style-type: none"> The user clicks on the generate pdf button
Expected Output:	<ul style="list-style-type: none"> If the details button is clicked on, the details view for Theft-Boat will be shown If the generate pdf button is clicked on, the pdf document will be shown

ID:	IT-932-002-Rainy Day
Purpose:	Test details for Theft-Boat
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on the details button for Theft-Auto The user clicks on the pdf button
Expected Output:	<ul style="list-style-type: none"> If the details button is clicked on, the details view for Theft-Auto will be shown If the generate pdf button is clicked on, the pdf document will be shown

User Story #938 - Edit Bolo for Theft-Boat

Unit Tests

ID:	UT-938-001-Sunny Day
Purpose:	Test edit Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The homepage is shown
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for Theft-Boat The user enters the data to be changed The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> The updated data will be stored in on cloudant and render the homepage

ID:	UT-938-002-Rainy Day
Purpose:	Test edit Theft-Boat bolo when another option is selected

Preconditions:	<ul style="list-style-type: none"> The homepage is shown
Input:	<ul style="list-style-type: none"> The user clicks on the details button for Theft-Auto The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> The system will retrieve the data details for Theft-Auto

Integration Test

ID:	IT-938-001-Sunny Day
Purpose:	Test edit Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for Theft-Boat The user enters the date to be modified The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> The homepage is shown and the following message: BOLO successfully updated

ID:	IT-938-002-Rainy Day
Purpose:	Test edit Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on the details button for Theft-Auto
Expected Output:	<ul style="list-style-type: none"> The details for Theft-Auto will be shown

User Story #934 - Remove unnecessary fields from PDF BOLO display**Integration Tests**

Test ID	ISD-934.001
Purpose	To verify the PDF version BOLO send in an email does not display empty fields titles

Preconditions	Create a BOLO
Input	Confirm the BOLO
Expected output	Receive an email with the PDF BOLO and all N/A fields to not be displayed nor their titles. I.e. Name N/A will not be displayed
Actual output:	Pass

Test ID	ISD-934.002
Purpose	To verify a PDF view from the system does not display empty fields nor their titles
Preconditions	A BOLO has been created no value in any field and is being viewed through the details link at the bottom of the BOLO
Input	Click, “Generate PDF”
Expected output	A display of the PDF without the display of empty fields and their titles
Actual output:	Pass

Test ID	ISD-934.003
Purpose	To verify a PDF BOLO view from the system does not display empty fields nor their titles that were previously holding some value after it has been updated
Preconditions	A BOLO has been created and has been updated
Input	<ol style="list-style-type: none"> 1. Delete all existing test fields of the BOLO 2. Click “Submit” 3. Click “Details” 4. Click “Generate PDF”
Expected output	A display of the PDF without the display of empty fields and their titles
Actual output:	Pass

Test ID	IRD-934.004
Purpose	To verify a PDF without empty fields and their titles will not be displayed.
Preconditions	A terminated officer gains access to the system and creates a BOLO but cannot confirm it.
Input	<ol style="list-style-type: none"> 1. A second officer logged into the system after the previous event 2. The officer views existing BOLO in PDF format
Expected output	The second officer will not be able to view the unconfirmed BOLO and therefore no PDF will be generated without empty fields displayed
Actual output:	Pass

Test ID	IRD-934.005
Purpose	To verify a PDF format of a BOLO with value in all fields does not display as a BOLO with empty fields
Preconditions	A BOLO has been created with value in all fields and is being viewed through the details link at the bottom of the BOLO
Input	Click, “Generate PDF”
Expected output	A display of the PDF without the display of empty fields and their titles
Actual output:	Pass

Test ID	IRD-934.006
Purpose	To verify a PDF format of a updated BOLO with value in all fields does not display as a BOLO with empty fields
Preconditions	A BOLO has been updated with value in all fields and is being viewed through the details link at the bottom of the BOLO
Input	Click, “Generate PDF”
Expected output	A display of the PDF without the display of empty fields and their titles

Actual output:	Pass
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User Story #935 - Add drop down for links such as settings, user guide, logout and others to be added at a later time

Integration Tests

Test ID	ISD-935.001
Purpose	To verify a tier four user will have access to the new menu via the drop down link
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-935.002
Purpose	To verify a tier three user will have access to the new menu via the drop down link
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-935.003
Purpose	To verify a tier two user will have access to the new menu via the drop down link
Preconditions	Logged into the system

Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-935.004
Purpose	To verify a tier one user will have access to the new menu via the drop down link
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	IRD-935.005
Purpose	To verify a tier four user will not access to the new menu via another dropdown
Preconditions	Logged into the system
Input	Click on the Create BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-935.006
Purpose	To verify a tier three user will not access to the new menu via another dropdown
Preconditions	Logged into the system

Input	Click on the Create BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-935.007
Purpose	To verify a tier three user will not access to the new menu via another dropdown
Preconditions	Logged into the system
Input	Click on the Creat BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-935.008
Purpose	To verify a tier oneuser will not access to the new menu via another dropdown
Preconditions	Logged into the system
Input	Click on the Creat BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	ISD-935.009
Purpose	To verify the user guide link works in the new menu for an officer user
Preconditions	Logged into the system
Input	<ol style="list-style-type: none"> 1. Click on the user name which is a drop down 2. Click on the user guide

Expected output	The officer will be taken to the user's guide for officers
Actual output:	Pass

Test ID	ISD-935.010
Purpose	To verify the user guide link works in the new menu for a root user
Preconditions	Logged into the system
Input	3. Click on the user name which is a drop down 4. Click on the user guide
Expected output	The officer will be taken to the user's guide for a root users
Actual output:	Pass

Test ID	ISD-935.011
Purpose	To verify the user guide link works in the new menu for an admin user
Preconditions	Logged into the system
Input	5. Click on the user name which is a drop down 6. Click on the user guide
Expected output	The officer will be taken to the user's guide for admin users
Actual output:	Pass

Test ID	IRD-935.012
Purpose	To verify the user guide link does not work if a neighbor link is clicked instead
Preconditions	Logged into the system
Input	7. Click on the user name which is a drop down 8. Click on the logout button
Expected output	The officer will not be taken to the user's guide page

Actual output:	Pass
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Test ID	IRD-935.013
Purpose	To verify the user guide link does not work if a neighbor link is clicked instead
Preconditions	Logged into the system
Input	9. Click on the user name which is a drop down 10. Click on the User Settings button
Expected output	The officer will not be taken to the user's guide page
Actual output:	Pass

Test ID	IRD-935.014
Purpose	To verify the user guide link does not work if a neighbor link is clicked instead
Preconditions	Logged into the system
Input	11. Click on the user name which is a drop down 12. Click on the About Us button
Expected output	The officer will not be taken to the user's guide page
Actual output:	Pass

Test ID	ISD-935.015
Purpose	To verify the About Us link works in the new menu for an officer user
Preconditions	Logged into the system
Input	13. Click on the user name which is a drop down 14. Click on the About Us
Expected output	The officer will be taken to the About Us page

Actual output:	Pass
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Test ID	ISD-935.016
Purpose	To verify the About Us link works in the new menu for a root user
Preconditions	Logged into the system
Input	15. Click on the user name which is a drop down 16. Click on the About Us
Expected output	The officer will be taken to the About Us page
Actual output:	Pass

Test ID	ISD-935.017
Purpose	To verify the About Us link works in the new menu for an admin user
Preconditions	Logged into the system
Input	17. Click on the user name which is a drop down 18. Click on the About Us
Expected output	The officer will be taken to the About Us page
Actual output:	Pass

Test ID	IRD-935.018
Purpose	To verify the user About Us does not work if a neighbor link is clicked instead
Preconditions	Logged into the system
Input	19. Click on the user name which is a drop down 20. Click on the logout button
Expected output	The officer will not be taken to the About Us page
Actual output:	Pass

Test ID	IRD-935.019
Purpose	To verify the About Us link does not work if a neighbor link is clicked instead
Preconditions	Logged into the system
Input	21. Click on the user name which is a drop down 22. Click on the User Settings button
Expected output	The officer will not be taken to the About Us page
Actual output:	Pass

Test ID	IRD-935.020
Purpose	To verify the About Us link does not work if a neighbor link is clicked instead
Preconditions	Logged into the system
Input	23. Click on the user name which is a drop down 24. Click on the About Us button
Expected output	The officer will not be taken to the About Us page
Actual output:	Pass

User Story#1006 - Add a user guide page for each tier

Integration Tests

Test ID	ISD-1006.001
Purpose	To verify a root user will have access to the root's user's guide page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-1006.002
Purpose	To verify an admin user will have access to the admin's user's guide page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-1006.003
Purpose	To verify a supervisor user will have access to the supervisor's user's guide page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-1006.004
Purpose	To verify an officer user will have access to the officer's user's guide page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	IRD-1006.005
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Purpose	To verify a root user will not access to the user's guide via another dropdown
Preconditions	Logged into the system
Input	Click on the Create BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-1006.006
Purpose	To verify an admin user will not access to the user's guide via another dropdown
Preconditions	Logged into the system
Input	Click on the Create BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-1006.007
Purpose	To verify a supervisor user will not access to the user's guide via another dropdown
Preconditions	Logged into the system
Input	Click on the Creat BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-1006.008
Purpose	To verify an officer user will not access to the user's guide via another dropdown

Preconditions	Logged into the system
Input	Click on the Creat BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

User Story #1046 - Add an About Us page

Integration Tests

Test ID	ISD-1046.001
Purpose	To verify a root user will have access to the About Us page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-1046.002
Purpose	To verify an admin user will have access to the About Us page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-1046.003
Purpose	To verify a supervisor user will have access to the About Us page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down

Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	ISD-1046.004
Purpose	To verify an officer user will have access to the About Us page
Preconditions	Logged into the system
Input	Click on the user name which is a drop down
Expected output	A new drop down menu will appear
Actual output:	Pass

Test ID	IRD-1046.005
Purpose	To verify a root user will not access to About Us page via another dropdown
Preconditions	Logged into the system
Input	Click on the Create BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-1046.006
Purpose	To verify an admin user will not access to About Us page via another dropdown
Preconditions	Logged into the system
Input	Click on the Create BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-1046.007
Purpose	To verify a supervisor user will not access to About Us page via another dropdown
Preconditions	Logged into the system
Input	Click on the Creat BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

Test ID	IRD-1046.008
Purpose	To verify an officer user will not access to About Us page via another dropdown
Preconditions	Logged into the system
Input	Click on the Creat BOLO which is a drop down link
Expected output	A new drop down menu will not appear
Actual output:	Pass

User Story #1011 - Filter BOLOS by author and reformat the dropdown

Unit Tests

ID:	U-1008-1-Sunny Day
Purpose:	Test that the correct bolos are returned when a call is made
Preconditions:	User is logged in
Input:	userService.getBolosByAuthor('egonz077')
Expected Output:	Bolos that were authored by egonz077 will be returned.

Integration Tests

ID:	I-1011-1
Purpose:	Test that a call to the database returns BOLOs by author
Preconditions:	Database is live
Input:	https://4473c6b8-33bc-426e-9147-3019756e24a0-bluemix.cloudant.com/bolo/_design/bolo/_view/by_author?limit=100&{"keys":"egonz077"}&reduce=false
Expected Output:	Database will return bolos by author

User Story #1008 - Prevent user email domain from being something other than their agency's domain

Unit Tests

ID:	U-1008-1-Sunny Day
Purpose:	Test that the user is created using the parameters of the form
Preconditions:	User logged in is admin
Input:	{ Username: testuser, Email: testuser, Password: testuser, Confirm: testuser, First Name: test, Last Name: user, Role: Admin, Badge: 1, Section: 1, Rank: Admin }
Expected Output:	User will be successfully created.

ID:	U-1008-2-Rainy Day
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Purpose:	Test that the user is not created if email domain is provided.
Preconditions:	User logged in is admin
Input:	{ Username: testuser, Email: testuser@fiu.edu, Password: testuser, Confirm: testuser, First Name: test, Last Name: user, Role: Admin, Badge: 1, Section: 1, Rank: Admin }
Expected Output:	User will not be created.

Integration Tests

ID:	I-1008-1
Purpose:	Test that a call to the database creates the user
Preconditions:	Database is live
Input:	{ Username: testuser, Email: testuser@fiu.edu, Password: testuser, Confirm: testuser, First Name: test, Last Name: user, Role: Admin, Badge: 1, Section: 1, Rank: Admin }
Expected Output:	User will be created.

User Story #931 - Create script to reset DB Schema

Unit Tests

ID:	U-931-1
Purpose:	Validate if design documents are updated when script is executed
Preconditions:	Cloudant instance has been initialized and some data has been already loaded
Input:	<p>Insert new view into Agency Design document:</p> <pre>"views": { "by_agency": { "map": "function (doc) { if ('agency' === doc.Type) emit(doc.name, null); }" }, "all_active": { "map": "function (doc) { if ('agency' === doc.Type && true === doc.isActive) emit(doc.name, null); }" }, "revs": { "map": "function (doc) { if ('agency' === doc.Type) emit(null, doc._rev); }" }, "NewView": { "map": "function (doc) { if ('agency' === doc.Type) emit(null, doc._rev); }" } },</pre>
Expected Output:	Cloudant creates a new view as soon the new document design is inserted, no Agency us deleted by applying this change

ID:	U-931-2
Purpose:	Validate if new design documents are inserted into the database
Preconditions:	Cloudant instance has been initialized and some data has been already loaded
Input:	<p>New Design document is added to the script to update Cloudant instance:</p> <pre>var NEW_DESIGN_DOC = { "views": { "by_agency": { "map": "function (doc) { if ('agency' === doc.Type) emit(doc.name, null); }" }, }</pre>

	<pre> "all_active": { "map": "function (doc) { if ('agency' === doc.Type && true === doc.isActive) emit(doc.name, null); }" }, "revs": { "map": "function (doc) { if ('agency' === doc.Type) emit(null, doc._rev); }" }, "revs2": { "map": "function (doc) { if ('agency' === doc.Type) emit(null, doc._rev); }" } }; indexes: { agencies: { analyzer: { name: 'standard' }, index: agency_indexer } }; </pre>
Expected Output:	New Design document is created in Database

Integration Tests

ID:	I-931-1
Purpose:	Validate if Search service is able to search BOLOs using a new view inserted with the Schema-Updater script
Preconditions:	testBOLO has been confirmed and new view has been inserted into BOLO design document using the script, search is changed to use the new view
Input:	Search for testBOLO
Expected Output:	testBOLO is showed on the search results

User Story #985 - Enhance Image Service

Unit Tests

ID:	U-985-1
Purpose:	Validate that final size of images is less than 1 MB
Preconditions:	Officer is logged in the system
Input:	Officer tries to create a new BOLO using an image which is 4MB big
Expected Output:	Final size of BOLO flyer is less than 1MB, keeping good quality

Integration Tests

ID:	I-985-1
Purpose:	Validate that the layout of BOLO flyers is not affected by the original size of the images used on the BOLO
Preconditions:	Officer is logged in the system
Input:	Officer tries to create a new BOLO using an image which is 400x400.px
Expected Output:	BOLO flyer is created and the image uploaded is resized to the default dimensions of the flyers

User Story # 986 - Unsubscribe from BOLO emails

Unit Tests

ID:	U-986-1
Purpose:	Validate if correct agency is displayed on new bolo notification link to unsubscribe
Preconditions:	testBOLO has been confirmed for testAgency agency
Input:	Officer receives email with new BOLO notification
Expected Output:	The verbiage on the link to unsubscribe refers to the Agency for which the BOLO was submitted.

ID:	U-986-2
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Purpose:	Validate if officer is unsubscribed from Agency when he clicks on the link on the email.
Preconditions:	testBOLO has been confirmed for testAgency agency
Input:	Officer receives bolo notification for testBOLO and clicks on the link to unsubscribe from testAgency.
Expected Output:	User is unsubscribed from Agency

Integration Tests

ID:	I-986-1
Purpose:	Validate if user is required to authenticate before been unsubscribed from Agency.
Preconditions:	testBOLO has been confirmed for testAgency agency. Officer is not logged into the BOLO system
Input:	Officer receives bolo notification for testBOLO and clicks on the link to unsubscribe from testAgency.
Expected Output:	Officer is unsubscribed from testAgency after authentication.

User Story #1001 – Implement routes with authentication

ID:	U-1001-1
Purpose:	Validate that user is requested to login if he has not created a session before.
Preconditions:	User is not currently authenticated with the BOLO app
Input:	User access a previously saved link for a route inside the BOLO application.
Expected Output:	User is asked to login before accessing the route..

ID:	U-1001-2
Purpose:	Validate that the system can handle not valid routes.

Preconditions:	User is not currently authenticated with the BOLO app.
Input:	User tries to access a route that does not exist.
Expected Output:	After login, the user receives a 404 message describing that the requested URL is not valid.

Integration Tests

ID:	I-1001-1
Purpose:	Validate that the officer cannot access admin exclusive routes
Preconditions:	User is not currently authenticated with the BOLO app
Input:	User tries to access a route that is only allowed to Root administrator.
Expected Output:	After login, the user receives a message saying that he is not authorized to access the page.

User Story #1007 – Redesign Filter by Agencies in Home page

Unit Tests

ID:	U-1007-1
Purpose:	Validate that only BOLOs from the selected Agency are shown
Preconditions:	Officer is logged in the system, at least one BOLO has already been confirmed.
Input:	Officer selects a particular Agency on the filter by Agency in the Home Page
Expected Output:	Only BOLOs from the selected Agency are shown on the results.

ID:	U-1007-2
Purpose:	Validate that the number of pages shown on the results relates only to the current search.
Preconditions:	Officer is logged in the system, at least n+1 BOLOs had already been

	confirmed. (where n is the limit of BOLOs to show by page)
Input:	Officer selects a particular Agency on the Filter, the Agency has more than n BOLOs already confirmed (n is the number of BOLOs to show by page)
Expected Output:	The system displays multiple pages for the results.

Integration Tests

ID:	I-1007-1
Purpose:	Validate that the system will not display an error or a 404 message when user tries to send an Agency that does not exists to the Filter
Preconditions:	Officer is logged in the system.
Input:	Officer customize the URL for the route created by the filter to any value
Expected Output:	The system will display a message saying that no BOLO exists for the particular Agency.

User Story #1033 – Fix several Bugs

Unit Tests

ID:	U-1033-1
Purpose:	Validate that no error is shown when accessing the systems from a shortcut saved as PNG file on Apple devices.
Preconditions:	User has saved a link to the system as PNG.
Input:	User tries to access the system from a saved link as PNG
Expected Output:	Users gets to the Home page after sign in

ID:	U-1033-2
Purpose:	Validate that users are able to unsubscribe from Agencies with names longer than one word
Preconditions:	Officer is subscribed to Key Biscayne agency

Input:	Officer selects to unsubscribe from Key Biscayne agency.
Expected Output:	Officer is unsubscribed from Key Biscayne BOLOs

User Story #990 – Redesign and add validations for General Bolo Template

Unit Tests

ID:	UT-990-001-Sunny Day
Purpose:	Test create General Bolo
Preconditions:	<ul style="list-style-type: none"> The create General Bolo webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document If the submit button is clicked on, store the bolo on cloudant and render the homepage

ID:	UT-990-002-Rainy Day
Purpose:	Test General Bolo template view when the General Bolo option is not selected
Preconditions:	<ul style="list-style-type: none"> The create Theft-Auto webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document If the submit button is clicked on, store the bolo on cloudant and render the homepage

Integration Tests

ID:	IT-990-001-Sunny Day
Purpose:	Test create General Bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the General Bolo button The create General Bolo webpage is populated and the user enters this info: Category: Arson; First Name: John; Last Name: Doe; Date of Birth: 01/01/1974; Driver License Number: M0123456789; Address: 111 NW 54TH AVE; Zip Code: 33311; Race: White; Sex: Male; Height - Feet-Inches: 06-02; Weight - Pounds: 188; Hair Color: Black; Tattoos: None; Featured ImageChoose File: Sketch.png; Video Link: http://www.testbolo.com; Additional Info: Testing Info; Summary: Summary Test The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown If the preview pdf is clicked on, the previed pdf is shown If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

ID:	IT-990-002-Rainy Day
Purpose:	Test create General Bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the Theft-Boat button The create Theft-Boat BOLO webpage is populated and the user enters this info: Category(static): THEFT - BOAT; VESSEL Year: 2016; Manufacturer: Mariner; Type: Boat; Length - Feet: 30; Color: White; Hull Identification Number: HH123456789; Registration Number: FL1234AB; PROPULSION Propulsion: Sail; Type: Single; Make: Honda; Model: Sea; Serial Number: ABC123456; TRAILER Trailer: Yes; Manufacturer: Aluma; Vehicle ID Number HG12345; Tag License Plate: FL123456 Featured ImageChoose File: boat.png; Video Link: http://www.testboat.com; Additional Info: Testing Info;

	<p>Summary: Summary Test</p> <ul style="list-style-type: none"> • The user clicks on the preview button • The user clicks on the pdf button • The user clicks on the homepage button
Expected Output:	<ul style="list-style-type: none"> • If the preview button is clicked on, the preview webpage is shown • If the preview pdf is clicked on, the preview pdf is shown • If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

User Story #981 – Implement Search for New Bolo Templates

Unit Tests

ID:	UT-981-001-Sunny Day
Purpose:	Test search for General Bolo
Preconditions:	<ul style="list-style-type: none"> • The search General Bolo webpage is shown • Bolos for General Bolo exist
Input:	<ul style="list-style-type: none"> • The user enter the data to search • The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> • The bolos which match the fields will be shown

ID:	UT-981-002-Rainy Day
Purpose:	Test search for General Bolo
Preconditions:	<ul style="list-style-type: none"> • The search General Bolo webpage is shown • No Bolos for General Bolo exist
Input:	<ul style="list-style-type: none"> • The user enter the data to search • The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> • Any bolo will be shown

Integration Tests

ID:	IT-981-001-Sunny Day
Purpose:	Test search for General Bolo
Preconditions:	<ul style="list-style-type: none"> The search General Bolo webpage is shown Bolos for General Bolo exist
Input:	<ul style="list-style-type: none"> The user enter the data to search e.g Category: Arson The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> The bolos which match the fields will be shown

ID:	IT-981-002-Rainy Day
Purpose:	Test search for General Bolo
Preconditions:	<ul style="list-style-type: none"> The search General Bolo webpage is shown Bolos for General Bolo does not exist
Input:	<ul style="list-style-type: none"> The user enters the data to search e.g Category: Arson The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> No bolos will be shown

User Story #991 – Redesign and add validations for Theft Auto Template

Unit Tests

ID:	UT-991-001-Sunny Day
Purpose:	Test create Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> The create Theft-Auto webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document If the submit button is clicked on, store the bolo on cloudant and render the homepage

ID:	UT-991-002-Rainy Day
Purpose:	Test Theft-Auto template view when the Theft-Auto option is not selected
Preconditions:	<ul style="list-style-type: none"> The create-general-bolo webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the pdf button is clicked on, render the preview pdf document If the submit button is clicked on, store the bolo on cloudant and render the homepage

Integration Tests

ID:	IT-991-001-Sunny Day
Purpose:	Test create Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the Theft-Auto button The create Theft-Auto BOLO webpage is populated and the user enters this info: Category(static): THEFT - AUTO; Year: 2016; Make: Toyota; Model: Camry; Trim: Sport; Color: Black; License Plate: HGT854; Vehicle Identification Number (VIN): VHG123456789; Featured ImageChoose File: Car.png; Video Link: http://www.testauto.com; Additional Info: Testing Info; Summary: Summary Test The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown If the preview pdf is clicked on, the previed pdf is shown If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

ID:	IT-991-002-Rainy Day
Purpose:	Test create Theft-Auto bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the Theft-boat button The create Theft-Boat BOLO webpage is populated and the user enters this info: Category(static): THEFT - BOAT; VESSEL Year: 2016; Manufacturer: Mariner; Type: Boat; Length - Feet: 30; Color: White; Hull Identification Number: HH123456789; Registration Number: FL1234AB; PROPULSION Propulsion: Sail; Type: Single; Make: Honda; Model: Sea; Serial Number: ABC123456; TRAILER Trailer: Yes; Manufacturer: Aluma; Vehicle ID Number HG12345; Tag License Plate: FL123456 Featured ImageChoose File: boat.png; Video Link: http://www.testboat.com; Additional Info: Testing Info; Summary: Summary Test The user clicks on the preview button The user clicks on the pdf button The user clicks on the homepage button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown If the preview pdf is clicked on, the previed pdf is shown If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

User Story #992 – Redesign and add validations for Theft Boat Template

Unit Tests

ID:	UT-992-001-Sunny Day
Purpose:	Test create Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The create Theft-Boat webpage is shown
Input:	<ul style="list-style-type: none"> The user enter the data related The user enters the image related The user clicks on the preview button The user clicks on the pdf button The user clicks on the submit button

Expected Output:	<ul style="list-style-type: none"> • If the preview button is clicked on, render the preview view • If the pdf button is clicked on, render the preview pdf document • If the submit button is clicked on, store the bolo on cloudant and render the homepage
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ID:	UT-992-002-Rainy Day
Purpose:	Test Theft-Boat template view when the Theft-Boat option is not selected
Preconditions:	<ul style="list-style-type: none"> • The create-general-bolo webpage is shown
Input:	<ul style="list-style-type: none"> • The user enter the data related • The user enters the image related • The user clicks on the preview button • The user clicks on the pdf button • The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> • If the preview button is clicked on, render the preview view • If the pdf button is clicked on, render the preview pdf document • If the submit button is clicked on, store the bolo on cloudant and render the homepage

Integration Tests

ID:	IT-992-001-Sunny Day
Purpose:	Test create Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> • The server is active • The user is logged in • The user is in the homepage
Input:	<ul style="list-style-type: none"> • The user clicks on create bolo button • The user clicks on the Theft-Boat button • The create Theft-boat BOLO webpage is populated and the user enters this info: Category (static): THEFT - AUTO; Vehicle Make: Toyota; Vehicle Model: Camry; Vehicle Color: Blue; Vehicle Year: 2015; Vehicle Type: xe; Vehicle Tag Number: 123xyz; Vehicle Identification Number (VIN): 1HGCM82633A004352; Featured ImageChoose File: sketch.png; Video Link: http://www.testauto.com; Additional Info: Testing info; Summary: Summary test. • The user clicks on the preview button • The user clicks on the pdf button • The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> • If the preview button is clicked on, the preview webpage is shown • If the preview pdf is clicked on, the preview pdf is shown

	<ul style="list-style-type: none"> If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created
ID:	IT-992-002-Rainy Day
Purpose:	Test create Theft-Boat bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the Theft-auto button The create Theft-auto BOLO webpage is populated and the user enters this info: Category(static): THEFT - AUTO; Year: 2016; Make: Toyota; Model: Camry; Trim: Sport; Color: Black; License Plate: HGT854; Vehicle Identification Number (VIN): VHG123456789; Featured ImageChoose File: Car.png; Video Link: http://www.testauto.com; Additional Info: Testing Info; Summary: Summary Test The user clicks on the preview button The user clicks on the pdf button The user clicks on the homepage button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown If the preview pdf is clicked on, the preview pdf is shown If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

User Story #1010 – Create a front end page for root to customize system settings

Integration Tests

Test ID	ISD-1010.001
Purpose	To verify root user will have access to the system setting page
Preconditions	Root user must be on the login page and on the “Admin” page
Input	<ul style="list-style-type: none"> Click on the “System Setting” link on the admin page
Expected output	Display the system settings page
Actual output:	Pass

Test ID	IRD-1010.002
Purpose	To verify an admin user will not have access to the system setting page
Preconditions	User must be logged into the system and on the admin page
Input	<ul style="list-style-type: none"> • Cannot view the “System settings” link
Expected output	None
Actual output:	Pass

Test ID	IRD-1010.003
Purpose	To verify a supervisor user will not have access to the system setting page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> • Cannot view the “Admin” link
Expected output	None
Actual output:	Pass

Test ID	IRD-1010.004
Purpose	To verify an officer user will not have access to the system setting page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> • Cannot view the “Admin” link
Expected output	None
Actual output:	Pass

User Story #1096 – Implement a link to download a PDF of the user’s guide based on user’s tier

Integration Tests

Test ID	ISD-1096.001
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Purpose	To verify a root user will have access to the root PDF user's guide page
Preconditions	Logged into the system and on the user's guide page
Input	Click on the generate PDF
Expected output	A PDF will open in a new webpage specifically tailored for root
Actual output:	Pass

Test ID	ISD-1096.002
Purpose	To verify an admin user will have access to the root PDF user's guide page
Preconditions	Logged into the system and on the user's guide page
Input	Click on the generate PDF
Expected output	A PDF will open in a new webpage specifically tailored for an admin
Actual output:	Pass

Test ID	ISD-1096.003
Purpose	To verify a supervisor user will have access to the root PDF user's guide page
Preconditions	Logged into the system and on the user's guide page
Input	Click on the generate PDF
Expected output	A PDF will open in a new webpage specifically tailored a supervisor
Actual output:	Pass

Test ID	IRD-1096.004
Purpose	To verify a root user will not access to the PDF user's guide via another link
Preconditions	Logged into the system and on the user's guide page
Input	Click on the Create BOLO which is a drop down link
Expected output	A new PDF user's guide will not appear

Actual output:	Pass
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Test ID	IRD-1096.005
Purpose	To verify an admin user will not access to the user's guide via another link
Preconditions	Logged into the system and on the user's guide page
Input	Click on archive
Expected output	A new PDF user's guide will not appear
Actual output:	Pass

Test ID	IRD-1096.006
Purpose	To verify a supervisor user will not access to the user's guide via another link
Preconditions	Logged into the system and on the user's guide page
Input	Click on Home
Expected output	A new PDF user's guide will not appear
Actual output:	Pass

User Story #1097 – Implement an About Miami Dade County Association of Chief of Police page

Integration Test

Test ID	ISD-1097.001
Purpose	To verify a non-system user will have access to the About MDCACP page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the the menu item labeled “MDCACP”
Expected output	Display a new webpage with content about the MDCACP

Actual output:	Pass
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Test ID	ISD-1097.002
Purpose	To verify a root user will have access to the About MDCACP page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the the menu item labeled “MDCACP”
Expected output	Display a new webpage with content about the MDCACP
Actual output:	Pass

Test ID	ISD-1097.003
Purpose	To verify an officer user will have access to the About MDCACP page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the the menu item labeled “MDCACP”
Expected output	Display a new webpage with content about the MDCACP
Actual output:	Pass

Test ID	IRD-1097.004
Purpose	To verify a non-system user will not have access to the About MDCACP page if the user clicks the wrong link
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the the menu item labeled “FIU’s Contribution”
Expected output	Display a new webpage with content about the FIU’s Contribution
Actual output:	Pass

Test ID	IRD-1097.005
Purpose	To verify a root user will not have access to the About MDCACP page if the user clicks the wrong link
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the the menu item labeled “FIU’s Contribution”
Expected output	Display a new webpage with content about the FIU’s Contribution
Actual output:	Pass

Test ID	IRD-1097.006
Purpose	To verify an officer user will not have access to the About MDCACP page if the officer is logged into the system
Preconditions	User must be on the login page (can only see this page if logged out of the system)
Input	<ul style="list-style-type: none"> • Cannot view the “About Us” link
Expected output	None
Actual output:	Pass

User Story #1098 – Create an about us page for Florida International University’s contribution

Integration Test

Test ID	ISD-1098.001
Purpose	To verify a non-system user will have access to “FIU’s Contribution” page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the the menu item labeled “FIU’s Contribution”

Expected output	Display a new webpage with content about the FIU's Contribution
Actual output:	Pass

Test ID	ISD-1098.002
Purpose	To verify a root user will have access to "FIU's Contribution" page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the "About Us" link which is a drop down • Click on the menu item labeled "FIU's Contribution"
Expected output	Display a new webpage with content about the FIU's Contribution
Actual output:	Pass

Test ID	ISD-1098.003
Purpose	To verify an officer user will have access to "FIU's Contribution" page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the "About Us" link which is a drop down • Click on the menu item labeled "FIU's Contribution"
Expected output	Display a new webpage with content about the FIU's Contribution
Actual output:	Pass

Test ID	IRD-1098.004
Purpose	To verify a non-system user will not have access to "FIU's Contribution" page if the user clicks the wrong link
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the "About Us" link which is a drop down • Click on the menu item labeled "FIU's Contribution"
Expected output	Display a new webpage with content about the FIU's Contribution

Actual output:	Pass
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Test ID	IRD-1098.005
Purpose	To verify a root user will not have access to “FIU’s Contribution” page if the user clicks the wrong link
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the menu item labeled “FIU’s Contribution”
Expected output	Display a new webpage with content about the FIU’s Contribution
Actual output:	Pass

Test ID	IRD-1098.006
Purpose	To verify an officer user will not have access to “FIU’s Contribution” page if the officer is logged into the system
Preconditions	User must be on the login page (can only see this page if logged out of the system)
Input	<ul style="list-style-type: none"> • Cannot view the “About Us” link
Expected output	None
Actual output:	Pass

User Story #109 – Create an about us page for IBM’s contribution

Integration Tests

Test ID	ISD-1099.001
Purpose	To verify a non-system user will have access to the “Ibm’s contribution” page
Preconditions	User must be on the login page

Input	<ul style="list-style-type: none"> Click on the “About Us” link which is a drop down Click on the the menu item labeled “Ibm’s contribution”
Expected output	Display a new webpage with content about the Ibm’s contribution
Actual output:	Pass

Test ID	ISD-1099.002
Purpose	To verify a root user will have access to the about “Ibm’s contribution” page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> Click on the “About Us” link which is a drop down Click on the the menu item labeled “Ibm’s contribution”
Expected output	Display a new webpage with content about the Ibm’s contribution
Actual output:	Pass

Test ID	ISD-1099.003
Purpose	To verify an officer user will have access to the “Ibm’s contribution” page
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> Click on the “About Us” link which is a drop down Click on the the menu item labeled “Ibm’s contribution”
Expected output	Display a new webpage with content about the Ibm’s contribution
Actual output:	Pass

Test ID	IRD-1099.004
Purpose	To verify a non-system user will not have access to the “Ibm’s contribution” page if the user clicks the wrong link
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> Click on the “About Us” link which is a drop down Click on the the menu item labeled “Ibm’s contribution”

Expected output	Display a new webpage with content about the Ibm's contribution
Actual output:	Pass

Test ID	IRD-1099.005
Purpose	To verify a root user will not have access to the “Ibm’s contribution” page if the user clicks the wrong link
Preconditions	User must be on the login page
Input	<ul style="list-style-type: none"> • Click on the “About Us” link which is a drop down • Click on the the menu item labeled “Ibm’s contribution”
Expected output	Display a new webpage with content about the Ibm’s contribution
Actual output:	Pass

Test ID	IRD-1099.006
Purpose	To verify an officer user will not have access to the “Ibm’s contribution” page if the officer is logged into the system
Preconditions	User must be on the login page (can only see this page if logged out of the system)
Input	<ul style="list-style-type: none"> • Cannot view the “About Us” link
Expected output	None
Actual output:	Pass

User Story #1100 – Create a page where root can retrieve data for analysis

Integration Tests

Test ID	ISD-1100.001
Purpose	To verify root user will have access to the “Data Analysis” page

Preconditions	Root user must be on the login page and on the “Admin” page
Input	<ul style="list-style-type: none"> Click on the “System Setting” link on the admin page
Expected output	Display the Data analysis page
Actual output:	Pass

Test ID	IRD-1100.002
Purpose	To verify an admin user will not have access to the system setting page via another link
Preconditions	User must be logged into the system and one the admin page
Input	<ul style="list-style-type: none"> Click “System settings” link
Expected output	Display the system settings page
Actual output:	Pass

Test ID	IRD-1010.003
Purpose	To verify a supervisor user will not have access to the data analysis page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> Cannot view the “Admin” link
Expected output	None
Actual output:	Pass

Test ID	IRD-1010.004
Purpose	To verify an officer user will not have access to the system setting page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> Cannot view the “Admin” link
Expected output	None

Actual output:	Pass
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User Story #1014 – Lock user account after 10 login attempts

Unit Tests

ID:	U-1014-1 - Sunny Day
Purpose:	User has 5 incorrect login attempts
Preconditions:	Application is running
Input:	{ username, password }
Expected Output:	User is logged in and incorrect login counter is reset

ID:	U-1014-2 - Rainy Day
Purpose:	User account is locked
Preconditions:	Application is running
Input:	{ username, password }
Expected Output:	User is not allowed to login and is sent an email to reset his password

Integration Tests

ID:	I-1014-1
Purpose:	Make sure user status account status can be changed to false
Preconditions:	Application is running
Input:	<p>Curl: https://4473c6b8-33bc-426e-9147-3019756e24a0-bluemix.cloudant.com/bolo/a5eb2af7d434af3308ec0e1e0e78b620</p> <p>Body:</p> <pre>{"_id": "a5eb2af7d434af3308ec0e1e0e78b620", "_rev": "1017-77491db23d046947235ee2311263a77d", "username": "egonz077", "email": "egonz077@fiu.edu", "fname": "Emmanuel", "lname": "Gonzalez", "password": "d9894fbc3ab51825ff2040b49e4b637c6fd0263139c67a8d307e359d0b8478cd", "passwordLifetime": 1475779702087, "tier": 4, "agency": "505cb009aa464867a38798f6f2f308e5", "agencyName": "Pinecrest", "badge": "2103", "sectunit": "2", "ranktitl</pre>

	e ":"Admin", "notifications": ["Pinecrest", "f4dfb5d8a47a4f1db0c01efe7bf8d125", "Coral Gables", "FIU", "Key Biscayne", "South Miami", "West Miami", "2c3709d471744115ae4078a6507fa101", "6ac32b9f859e4fc580eb6bd94c1be45d", "36adc2accb17463db858dd052c2d2353", "505cb009aa464867a38798f6f2f308e5"], "resetPasswordToken": "0ca6ef772221db84ba65e111427697599a45955f", "resetPasswordExpires": 1468690084945, "boloConfirmationToken": null, "boloTokenExpiration": null, "accountStatus": false, "incorrectLogins": 0, "Type": "user"}
Expected Output:	User account status will be changed to false

User Story #1038 Filter by multiple agencies in bolo list page

Unit Tests

ID:	U-1038-1 - Sunny Day
Purpose:	User can filter through agencies
Preconditions:	Application is running
Input:	User selects Coral Gables, Pinecrest
Expected Output:	The bolos from coral gables and pinecrest are displayed

ID:	U-1038-2 - Rainy Day
Purpose:	User does not select any agency
Preconditions:	Application is running
Input:	No selection
Expected Output:	No agency is displayed

Integration Tests

ID:	I-1038-1
Purpose:	Request to the backend returns the requested bolos from the agencies
Preconditions:	Application is running

Input:	Curl: https://4473c6b8-33bc-426e-9147-3019756e24a0-bluemix.cloudant.com/database/bolo/_design/bolo/_view/by_agency?keys=["Coral+Gables"%2C"Pinecrest"]
Expected Output:	Bolos will be returned

User Story #890 – Implement Watermark for agencies

Unit tests

ID:	U-890-1
Purpose:	Validate that the watermarks are included in BOLOs
Preconditions:	Officer from agency testAgency is logged in the system, system administrator has inserted watermark for testAgency
Input:	Officer confirms and creates new bolo
Expected Output:	Email notification is sent to users, the PDF sent includes watermark.

ID:	U-890-2
Purpose:	Validate that if no watermark is present for agency the PDF is sent without issues
Preconditions:	Officer from agency testAgency is logged in the system, system administrator has not inserted watermark for testAgency
Input:	Officer confirms and creates new bolo
Expected Output:	Email notification is sent to users

Integration tests

ID:	I-890-1
Purpose:	Validate that watermarks are inserted in BOLO PDF previews

Preconditions:	Officer is logged in the system.
Input:	Officer access BOLO and clicks in generate PDF
Expected Output:	The system will display the BOLO PDF with the watermark (if present)

User Story #1037 – Allow Tier 3 users to control Agency settings

Unit tests

ID:	U-1037-1
Purpose:	Validate that Agency Admins have only access to control settings for their own agency
Preconditions:	User is set as Agency Administrator
Input:	Tier 3 users access Management Dashboard
Expected Output:	Only own agency is shown to user.

ID:	U-1037-2
Purpose:	Validate that users are not able to unsubscribe from their own agency when Administrators has prevented it on the settings
Preconditions:	Agency Administrator has prevented users from unsubscribing on the Agency settings
Input:	Officer selects to unsubscribe from agency
Expected Output:	System displays a message preventing the user from unsubscribing.

Integration tests

ID:	I-1037-1
Purpose:	Validate that agency subscription settings are validated when unsubscribing from email.

Preconditions:	Officer is received BOLO notification; Agency Admin has set Agency to prevent un-subscription from own users.
Input:	Officer clicks on the link to unsubscribe.
Expected Output:	System displays a message preventing the user from unsubscribing.

User Story #1081 – Prevent Tier 3 users from granting Root access

Unit tests

ID:	U-1081-1
Purpose:	Validate that the Root roles are not available on user settings from Agency Administrators
Preconditions:	Administrator from agency testAgency is logged in the system and edits an user
Input:	Administrators clicks available roles
Expected Output:	System displays Officer, Supervisor and Agency Administrator roles.

Integration tests

ID:	I-1081-1
Purpose:	Validate that user roles changed by Tier 3 user is reflected in active user session instantly.
Preconditions:	Officer is logged in the system.
Input:	Tier 3 changes user's role.
Expected Output:	The system will change available navigations for user based on role selected by Tier 3

User Story #1083 – Prevent officers from previewing PDFs before confirmation

Unit tests

ID:	U-1083-1
Purpose:	Validate that the PDF preview option is not available on BOLO creation
Preconditions:	Officer access the system.
Input:	Officer creates a BOLO.
Expected Output:	System only allows user to preview BOLO without PDF version

Integration tests

ID:	I-1083-1
Purpose:	Validate that BOLO PDFs preview route is not available for new BOLOs
Preconditions:	Officer access the create BOLO route.
Input:	Officer types preview PDF route for new BOLO before confirmation.
Expected Output:	The system displays a message saying that the route is not valid.

User Story #1087 – Implement time retrieval points for data analysis for Create BOLO**(General-Auto-Boat)**

Unit Tests

ID:	UT-1087-001-Sunny Day
Purpose:	Test create General Bolo
Preconditions:	<ul style="list-style-type: none"> The create General Bolo webpage is shown
Input:	<ul style="list-style-type: none"> The user enters date and time reported The user enters the data related The user enters the image related The user clicks on the preview button The user clicks on the submit button
Expected	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view

Output:	<ul style="list-style-type: none"> If the submit button is clicked on, store the bolo on cloudant and render the homepage
ID:	UT-1087-002-Rainy Day
Purpose:	Test General Bolo template without enter date and time reported
Preconditions:	<ul style="list-style-type: none"> The create General Bolo webpage is shown
Input:	<ul style="list-style-type: none"> The user does not enter date and time required The user enters the data related The user enters the image related The user clicks on the preview button The user clicks on the submit button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, render the preview view If the submit button is clicked on, the submit button is gray and disabled

Integration Tests

ID:	IT-1087-001-Sunny Day
Purpose:	Test create General Bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the General Bolo button The create General Bolo webpage is populated and the user enters this info: Date Reported: 07/18/2016; Time Reported: 14:00; Category: Missing Person; First Name: John; Last Name: Doe; Date of Birth: 01/01/1974; Driver License Number: M0123456789; Address: 111 NW 54TH AVE; Zip Code: 33311; Race: White; Sex: Male; Height - Feet-Inches: 06-02; Weight - Pounds: 188; Hair Color: Black; Tattoos: None; Featured ImageChoose File: Sketch.png; Video Link: http://www.testbolo.com; Additional Info: Testing Info; Summary: Summary Test The user clicks on the preview button The user clicks on the submit button
Expected	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown

Output:	<ul style="list-style-type: none"> If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created
ID:	IT-1087-002-Rainy Day
Purpose:	Test create General Bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on create bolo button The user clicks on the General Bolo button The create General BOLO webpage is populated and the user enters this info: Date Reported: //; Time Reported: ::; Category: Missing Person; First Name: John; Last Name: Doe; Date of Birth: 01/01/1974; Driver License Number: M0123456789; Address: 111 NW 54TH AVE; Zip Code: 33311; Race: White; Sex: Male; Height - Feet-Inches: 06-02; Weight - Pounds: 188; Hair Color: Black; Tattoos: None; Featured ImageChoose File: Sketch.png; Video Link: http://www.testbolo.com; Additional Info: Testing Info; Summary: Summary Test The user clicks on the preview button The user clicks on the homepage button
Expected Output:	<ul style="list-style-type: none"> If the preview button is clicked on, the preview webpage is shown If the submit button is clicked on, the homepage is shown and the following message: BOLO successfully created

User Story #1119 – Implement time retrieval points for data analysis for Edit Bolo

(General-Auto-Boat)

Unit Tests

ID:	UT-1119-001-Sunny Day
Purpose:	Test edit General bolo
Preconditions:	<ul style="list-style-type: none"> The homepage is shown
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for General Bolo The user changes the status to Located

	<ul style="list-style-type: none"> The fields date recovered, time recovered, address, zip code recovered and agency recovered are displayed and completed by the user The user enters the data to be changed The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> The updated data will be stored in on Cloudant and render the homepage

ID:	UT-1119-002-Rainy Day
Purpose:	Test edit General Bolo without enter date, time, zip code and agency reported
Preconditions:	<ul style="list-style-type: none"> The homepage is shown
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for General Bolo The user changes the status to Located The fields date recovered, time recovered, address, zip code recovered and agency recovered are displayed and not completed by the user The user enters the data to be changed The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> If the publish button is clicked on, the publish button is gray and disabled

Integration Tests

ID:	IT-1119-001-Sunny Day
Purpose:	Test edit General bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for General Bolo The user changes the status to Located The user enters this info: Date Recovered: 07/18/2016; Time Recovered: 18:00; Address: 121 NW 54TH AVE, Zip Code Recovered: 33311; Agency Recovered: Pinecrest The user enters the date to be modified The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> The homepage is shown and the following message: BOLO successfully updated

ID:	IT-1119-002-Rainy Day
Purpose:	Test edit General bolo
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The user clicks on the edit button for General Bolo The user changes the status to Located The user does not enter date recovered, time recovered, address, zip code recovered and agency recovered The user enters the date to be modified The user clicks on the publish button
Expected Output:	<ul style="list-style-type: none"> If the publish button is clicked on, the publish button is gray and disabled

User Story #1088 – Deactivate and activate User Accounts from Root and Administrator

Unit Tests

ID:	UT-1088-001-Sunny Day
Purpose:	Test activate / deactivate user
Preconditions:	<ul style="list-style-type: none"> The server is active The root is logged in The User Management webpage is shown
Input:	<ul style="list-style-type: none"> The root clicks on settings The root clicks on edit account details The root clicks on activate / deactivate The system shows a confirmation message The root clicks on Ok
Expected Output:	<ul style="list-style-type: none"> The system shows a message activation / deactivation successful

ID:	UT-1088-002-Rainy Day
Purpose:	Test activate / deactivate user without confirmation
Preconditions:	<ul style="list-style-type: none"> The server is active The root is logged in

	<ul style="list-style-type: none"> The User Management webpage is shown
Input:	<ul style="list-style-type: none"> The root clicks on settings The root clicks on edit account details The root clicks on activate / deactivate The system shows a confirmation message The root clicks on Cancel
Expected Output:	<ul style="list-style-type: none"> The system will not activate / deactivate the user

Integration Tests

ID:	IT-1088-001-Sunny Day
Purpose:	Test activate / deactivate user
Preconditions:	<ul style="list-style-type: none"> The server is active The root is logged in The User Management webpage is shown
Input:	<ul style="list-style-type: none"> The root clicks on settings The root clicks on activate / deactivate The system shows a confirmation message The root clicks on Ok
Expected Output:	<ul style="list-style-type: none"> The system shows a message activation / deactivation successful

ID:	IT-1088-002-Rainy Day
Purpose:	Test activate / deactivate
Preconditions:	<ul style="list-style-type: none"> The server is active The user is logged in The user is in the homepage
Input:	<ul style="list-style-type: none"> The root clicks on settings The root clicks on edit account details The root clicks on activate / deactivate The system shows a confirmation message The root clicks on Cancel
Expected Output:	<ul style="list-style-type: none"> The system will not activate / deactivate the user

User Story #1094 – Implement confirmation of BOLO updates

Unit tests

ID:	U-1094-1
Purpose:	Validate that updates are applied when edits are confirmed
Preconditions:	testBolo exists in Database
Input:	Officer edits Bolo and email confirmation is sent by the System
Expected Output:	Bolo changes are shown when user clicks on confirmation link

ID:	U-1094-2
Purpose:	Validate that Bolo is locked for editing when it is pending confirmation
Preconditions:	TestBolo has been edited by testUser but is still pending confirmation.
Input:	testUser2 tries to edit testBolo
Expected Output:	System displays message preventing testUser2 from updating testBolo.

Integration tests

ID:	I-1094-1
Purpose:	Validate that confirmation route correctly redirects to Home page when token is not valid
Preconditions:	Officer has received confirmation link via email.
Input:	Officer clicks on confirmation link and adds additional digits by mistake
Expected Output:	System redirects officer to Home page and displays a warning message.

User Story #1155 – Change PDF labels

Unit tests

ID:	U-1155-1
Purpose:	Validate that PDF is sent with the correct labels

Preconditions:	Officer is authenticated with the BOLO app.
Input:	Officer confirms new BOLO
Expected Output:	Email notification is sent to users, the PDF sent has the correct headers in font 23.

Integration tests

ID:	I-1155-1
Purpose:	Validate that PDF headers are not altered when information from time module is present
Preconditions:	Officer is authenticated with the BOLO app
Input:	Officer edits BOLO as Recovered, inserting the data required for time analysis
Expected Output:	Email notification is sent to users, the PDF sent has the correct headers in font 23.

User Story #1163 – Connect System Settings page to backend

Integration Tests

Test ID	ISD-1163.001
Purpose	To verify root user can adjust timeout setting
Preconditions	Root user must be on the login page and on the “system settings” page
Input	<ul style="list-style-type: none"> • Use arrow to adjust new time for the system • Click submit
Expected output	The system will have new time to timeout and the new timeout value will be updated in the database
Actual output:	Pass

Test ID	ISD-1163.002
----------------	--------------

Purpose	To verify root user can adjust Brute Force attempts setting
Preconditions	Root user must be on the login page and on the “system settings” page
Input	<ul style="list-style-type: none"> • Use arrow to adjust “Brute Force” attempts for the system • Click submit
Expected output	The system will have new Brute Force number for login attempts and the new Brute Force value will be updated in the database
Actual output:	Pass

Test ID	ISD-1163.003
Purpose	To verify root user can adjust timeout and brute force settings
Preconditions	Root user must be on the login page and on the “system settings” page
Input	<ul style="list-style-type: none"> • Use arrow to adjust new time for the system • Use arrow to adjust “Brute Force” attempts for the system • Click submit
Expected output	The system will have new Brute Force number for login attempts and the new Brute Force value will be updated in the database and The system will have new time to timeout and the new timeout value will be updated in the database
Actual output:	Pass

Test ID	IRD-1010.004
Purpose	To verify an admin user will not have access to the system setting page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> • Cannot view the “System settings” link
Expected output	None
Actual output:	Pass

Test ID	IRD-1010.004
----------------	--------------

Purpose	To verify a supervisor user will not have access to the system setting page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> Cannot view the “Admin” link
Expected output	None
Actual output:	Pass

Test ID	IRD-1163.006
Purpose	To verify an admin user will not have access to the system setting page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> Cannot view the “Admin” link
Expected output	None
Actual output:	Pass

User Story #1164 – Connect Data Analysis page to backend

Integration Tests

Test ID	ISD-1164.001
Purpose	To verify root user can download the data for one agency
Preconditions	Root user must be on the login page and on the “Data Analysis” page
Input	<ul style="list-style-type: none"> Select one agency for the select picker
Expected output	Download CSV file with the entire agency’s BOLO
Actual output:	Pass

Test ID	ISD-1164.002
Purpose	To verify root user can download the data for two agencies
Preconditions	Root user must be on the login page and on the “Data Analysis” page

Input	<ul style="list-style-type: none"> • Select two agencies for the select picker
Expected output	Download CSV file with the both agency's BOLO
Actual output:	Pass

Test ID	ISD-1164.003
Purpose	To verify root user can download the data for all agencies
Preconditions	Root user must be on the login page and on the “Data Analysis” page
Input	<ul style="list-style-type: none"> • Select all agencies for the select picker
Expected output	Download CSV file with the all agency's BOLO
Actual output:	Pass

Test ID	IRD-1164.004
Purpose	To verify an officer user will not have access to the data analysis page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> • Cannot view the “Admin” link
Expected output	None
Actual output:	Pass

Test ID	IRD-1164.005
Purpose	To verify an supervisor user will not have access to the data analysis page
Preconditions	User must be logged into the system
Input	<ul style="list-style-type: none"> • Cannot view the “Admin” link
Expected output	None
Actual output:	Pass

Test ID	IRD-1164.006
----------------	--------------

Purpose	To verify an admin user will not have access to the data analysis page
Preconditions	User must be logged into the system and on the “Admin page”
Input	<ul style="list-style-type: none">• Cannot view the “Data Analysis” link
Expected output	None
Actual output:	Pass

Glossary

Administrator: A police agent that operates from a desk coordinating and overviewing tasks.

Agency: A district-based police department.

BOLO: A Be-on-the-lookout flyer that contains information about a specific crime.

Officer: A police agent assigned to a crime scene.

Supervisor: A field operator in charge of multiple cases.

Root Administrator: An officer that has universal access to a system used in law enforcement.

APPENDIX

Appendix A – UML Diagrams

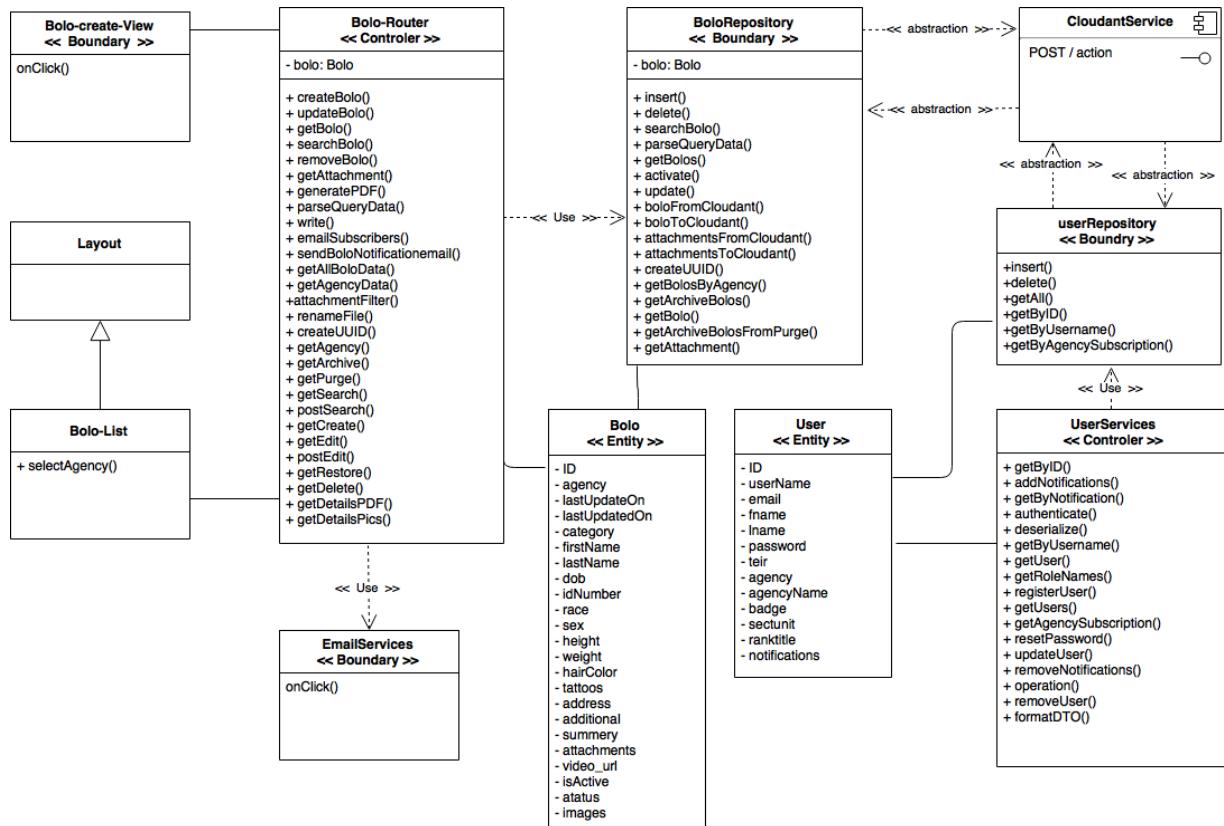
Static UML Diagrams

Sprint 1

(05/23/2016 - 06/05/2016)

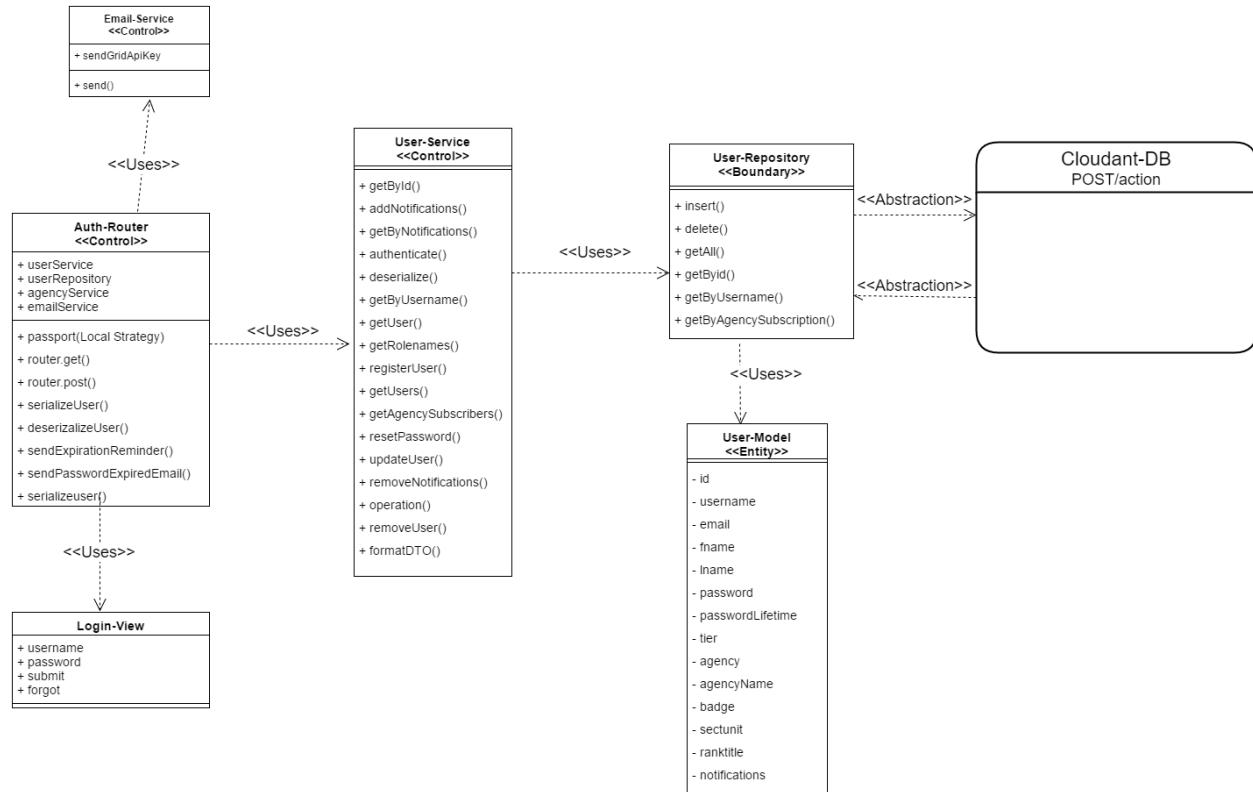
User Story #887 Remove unnecessary data from email alert

- Figure sp1-1



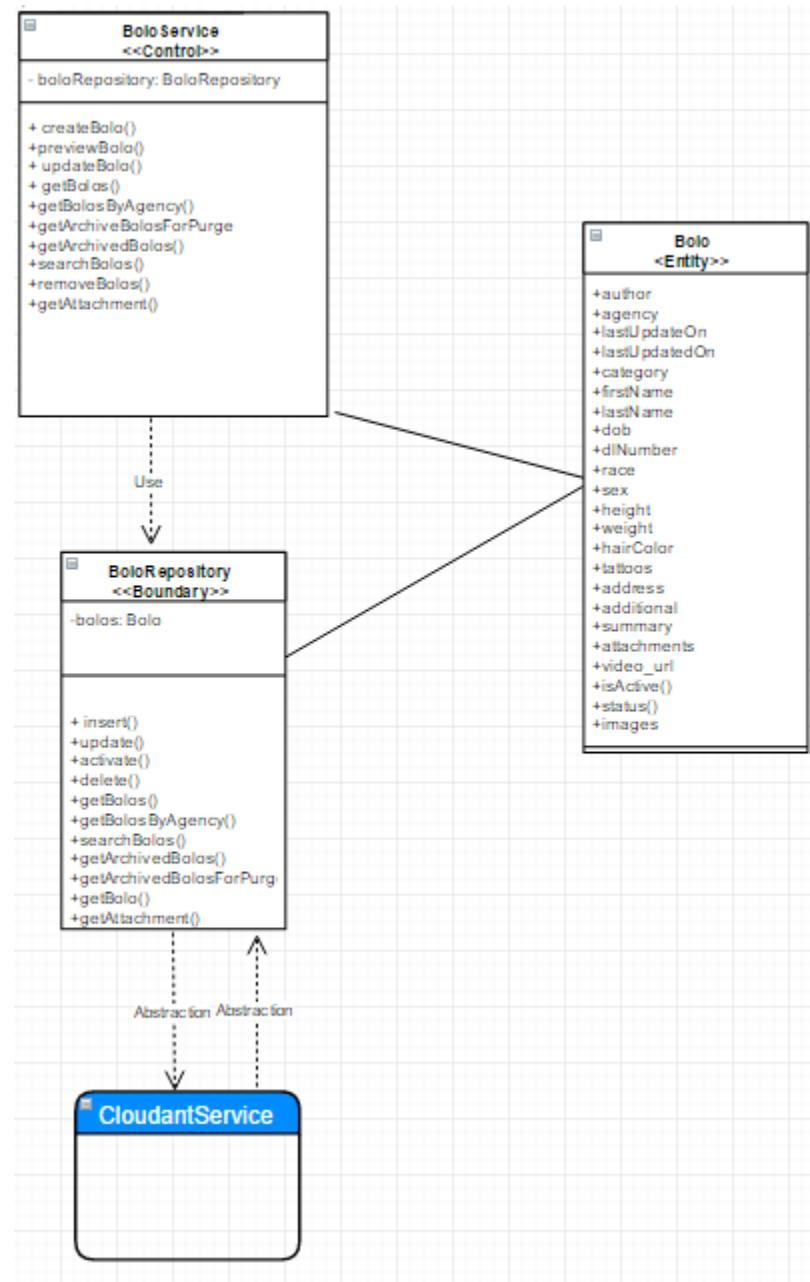
User Story #892 Expire passwords in 90 days

- Figure sp1-2



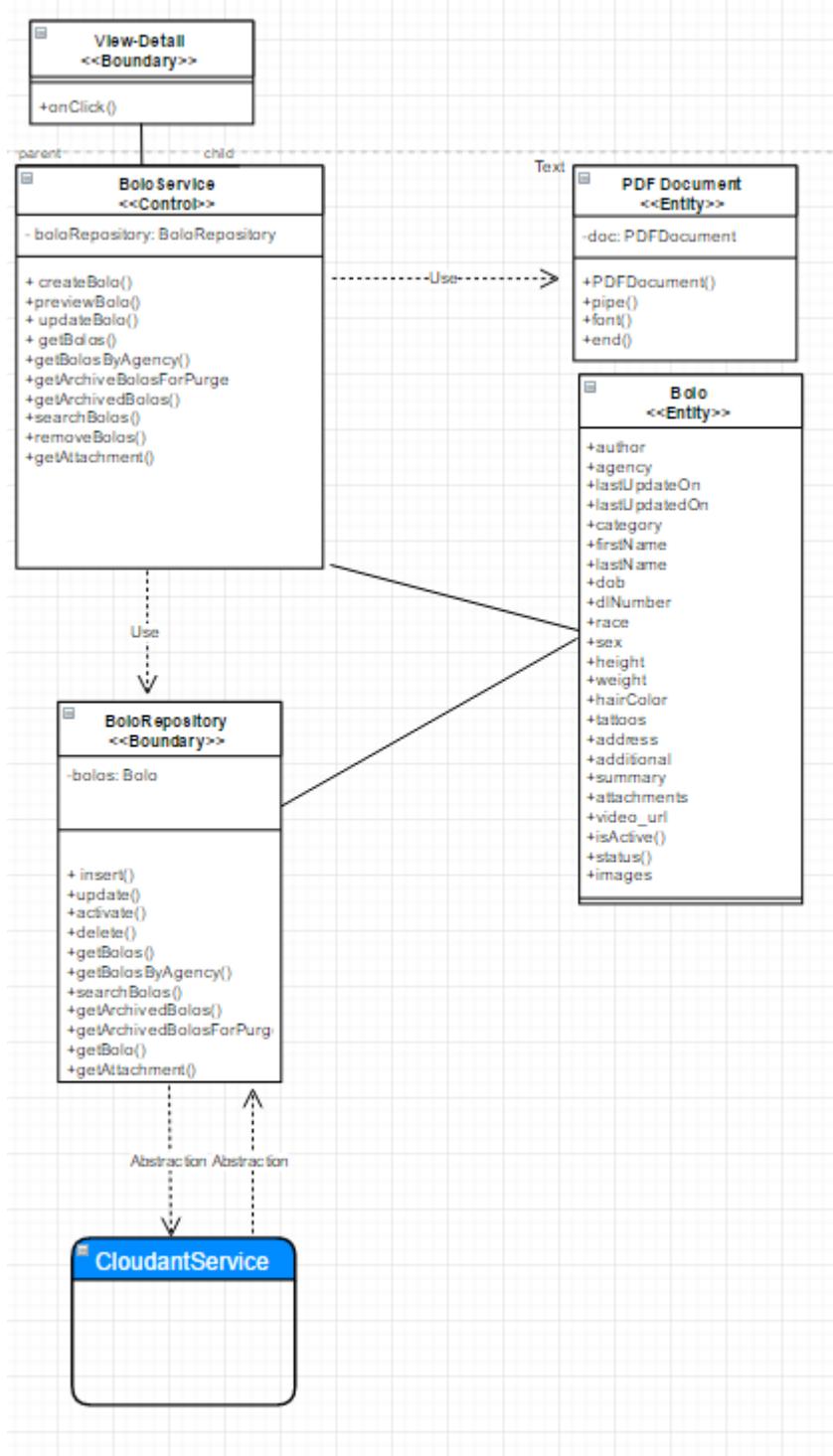
User Story #882 Implement WildCard search field

- Figure sp1-3



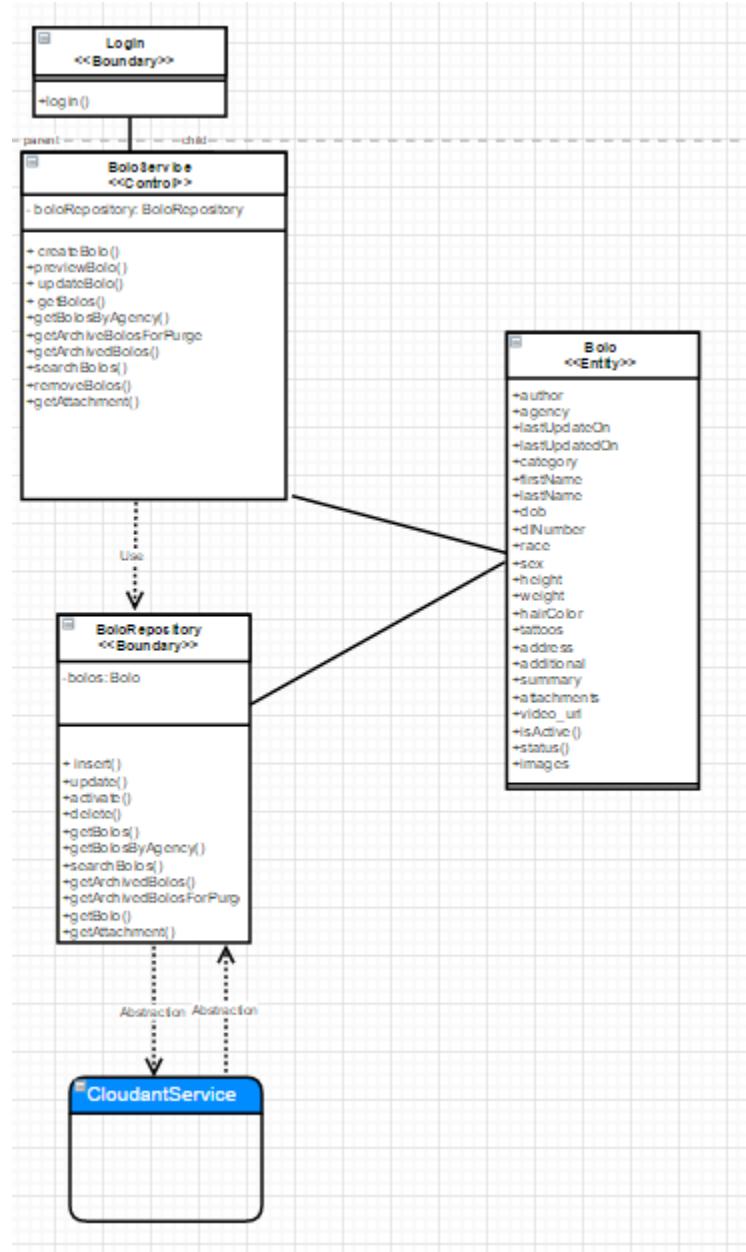
User Story #888 Open PDF documents in new tab

- Figure sp1-4



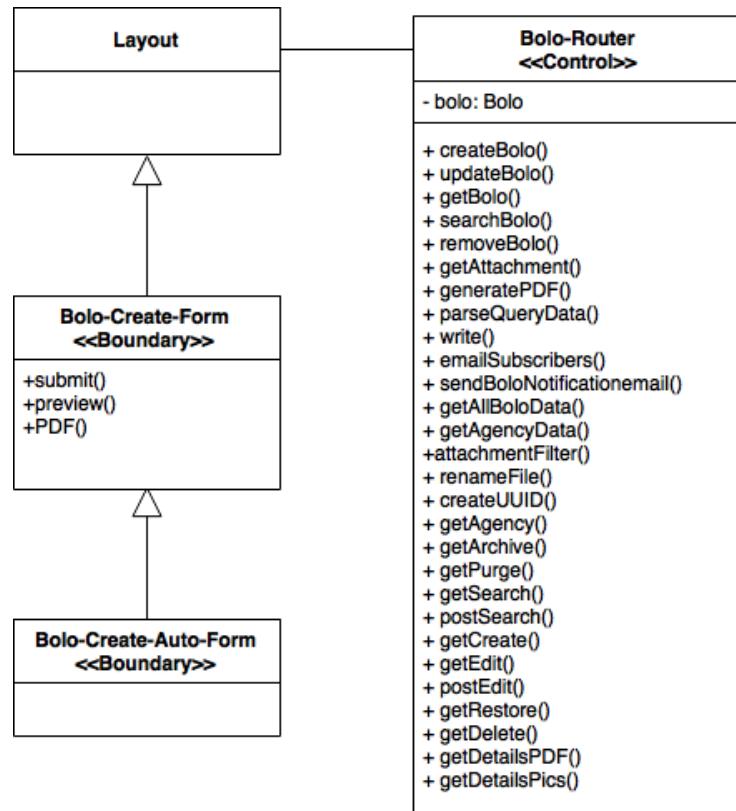
User Story #894 Update all Pages to Bolo v5.0

- Figure sp1-5



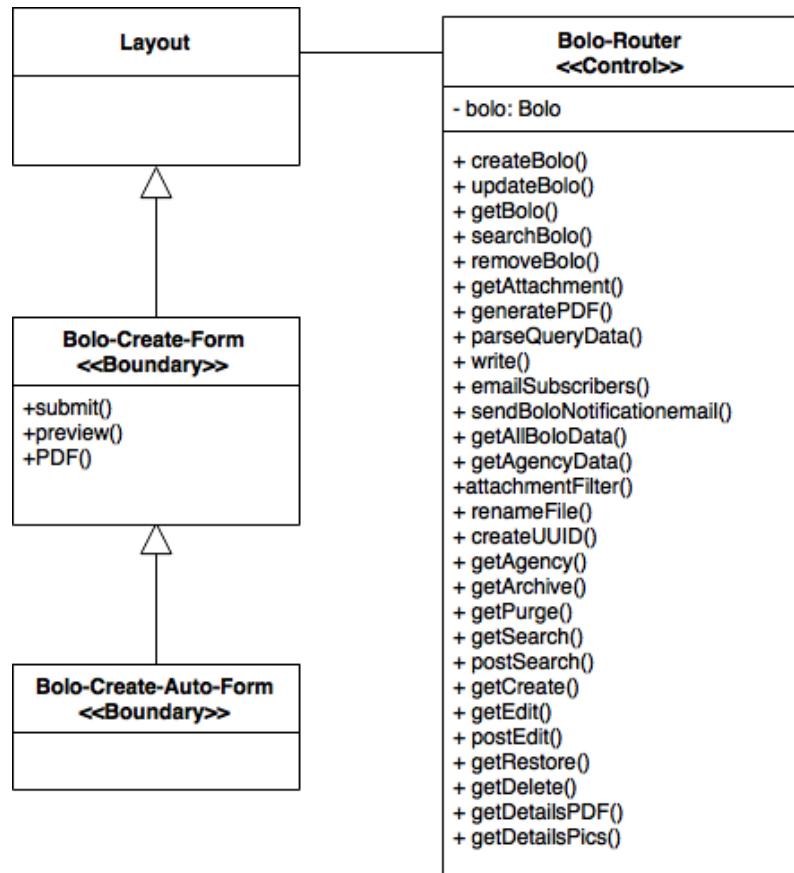
User Story #895 Create template for Theft-Boat BOLO

- Figure sp1-6



User Story #881 Create template for Theft-Auto BOLO

- Figure sp1-7

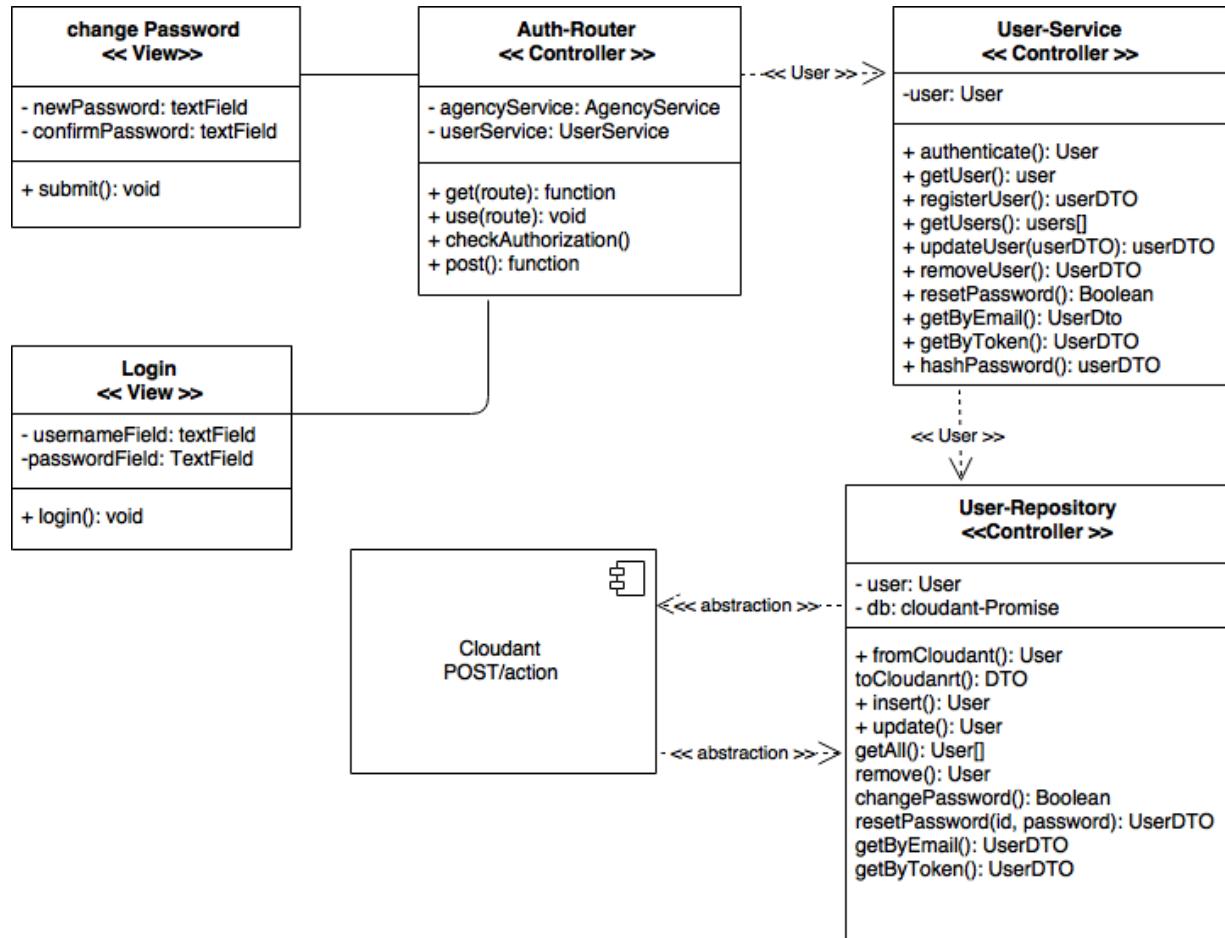


Sprint 2

(06/06/2016 - 06/19/2016)

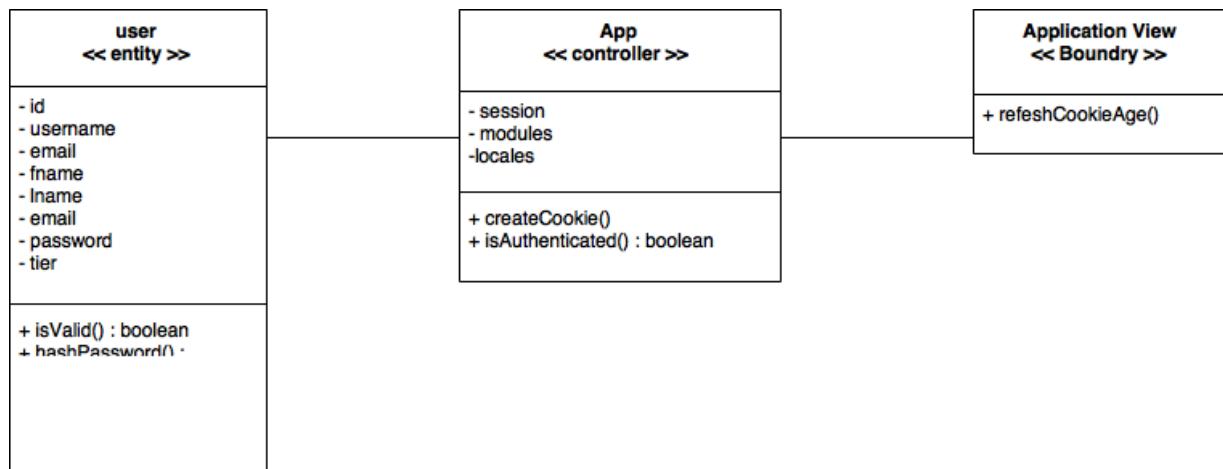
User Story #893 Authenticate password reset confirmation

- Figure sp2-1

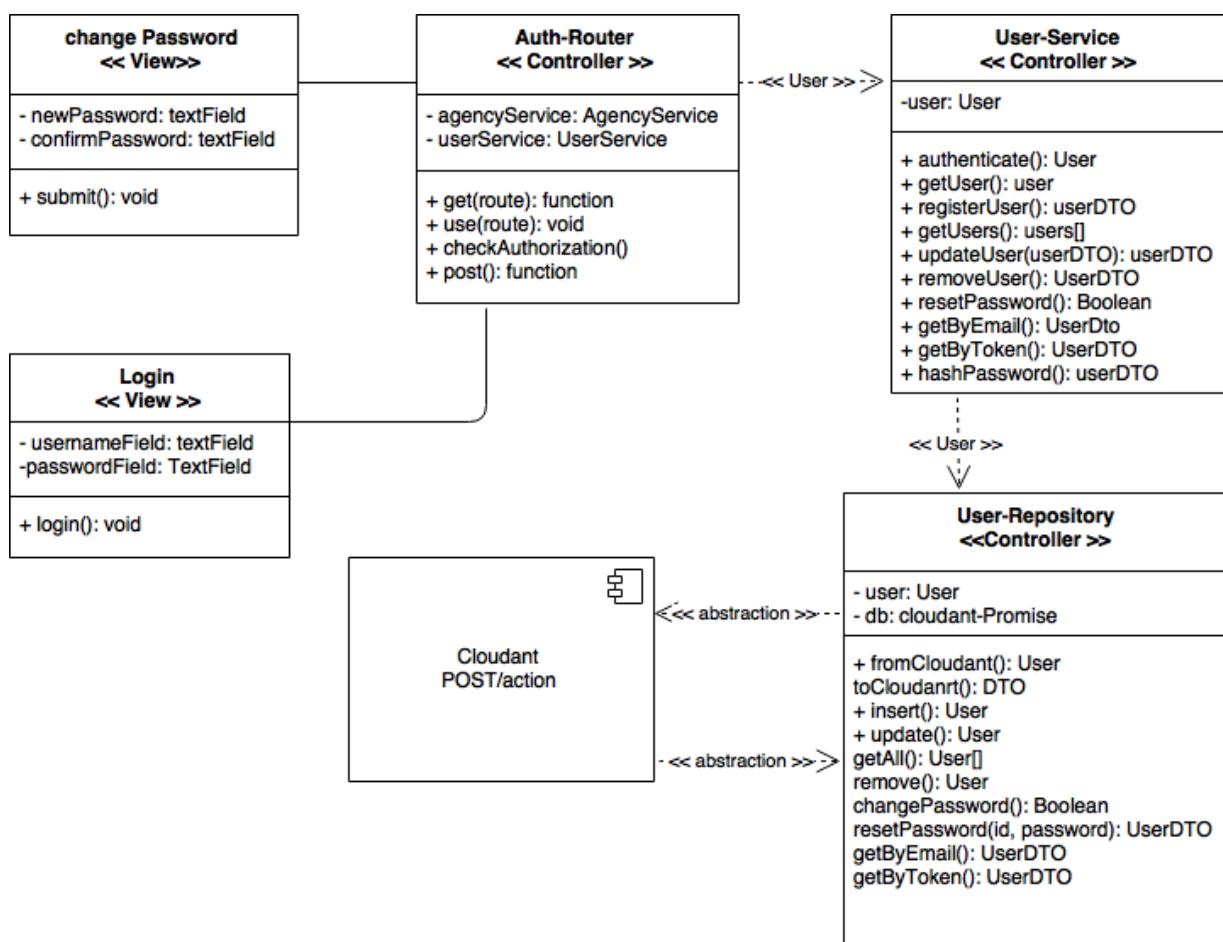


User Story #919 Adjust timeout session

- Figure sp2-2

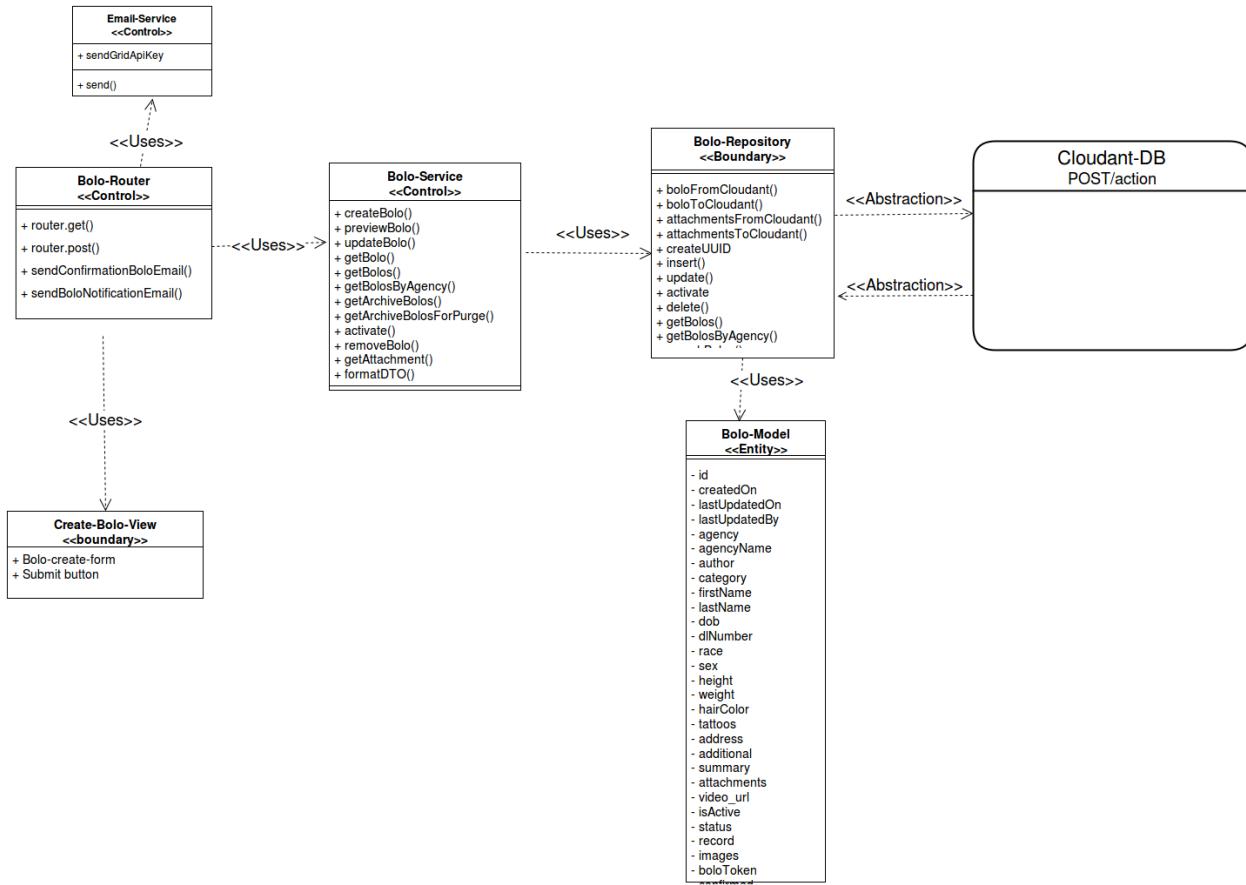
**User Story #930** Send email notification after password has been reset

- Figure sp2-3



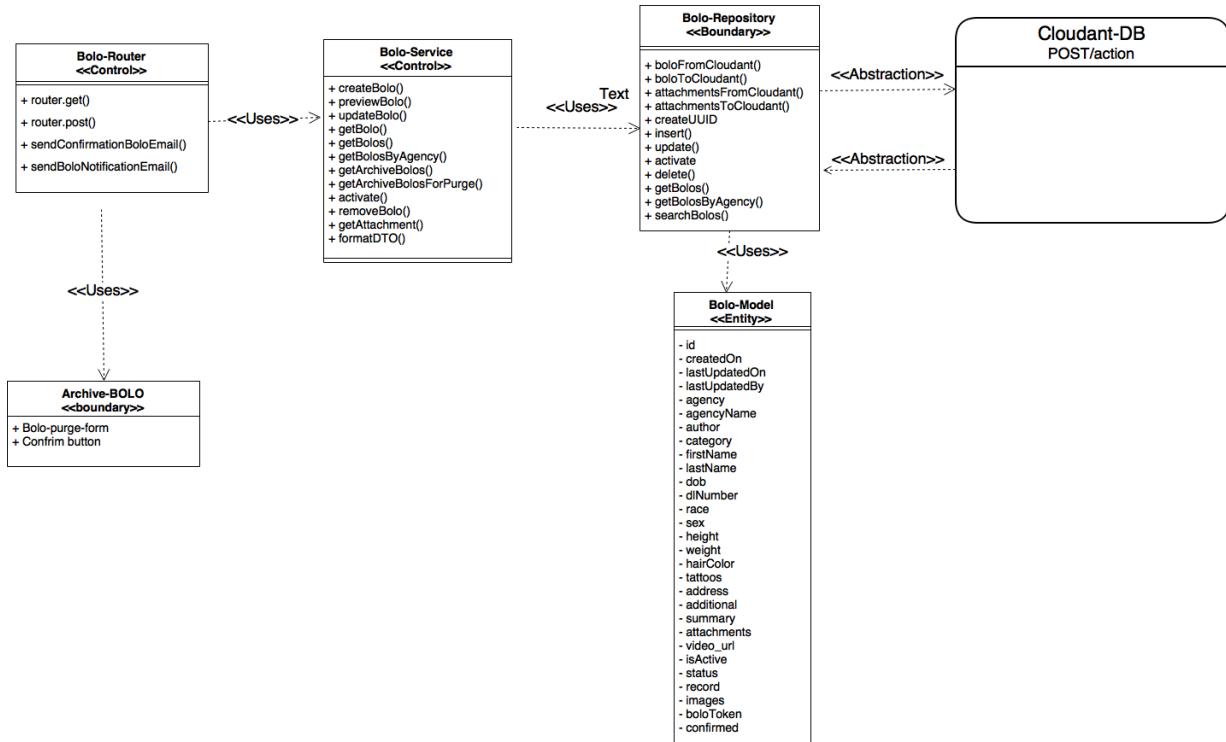
User Story #879 Confirm BOLO via email after creation

- Figure sp2-4



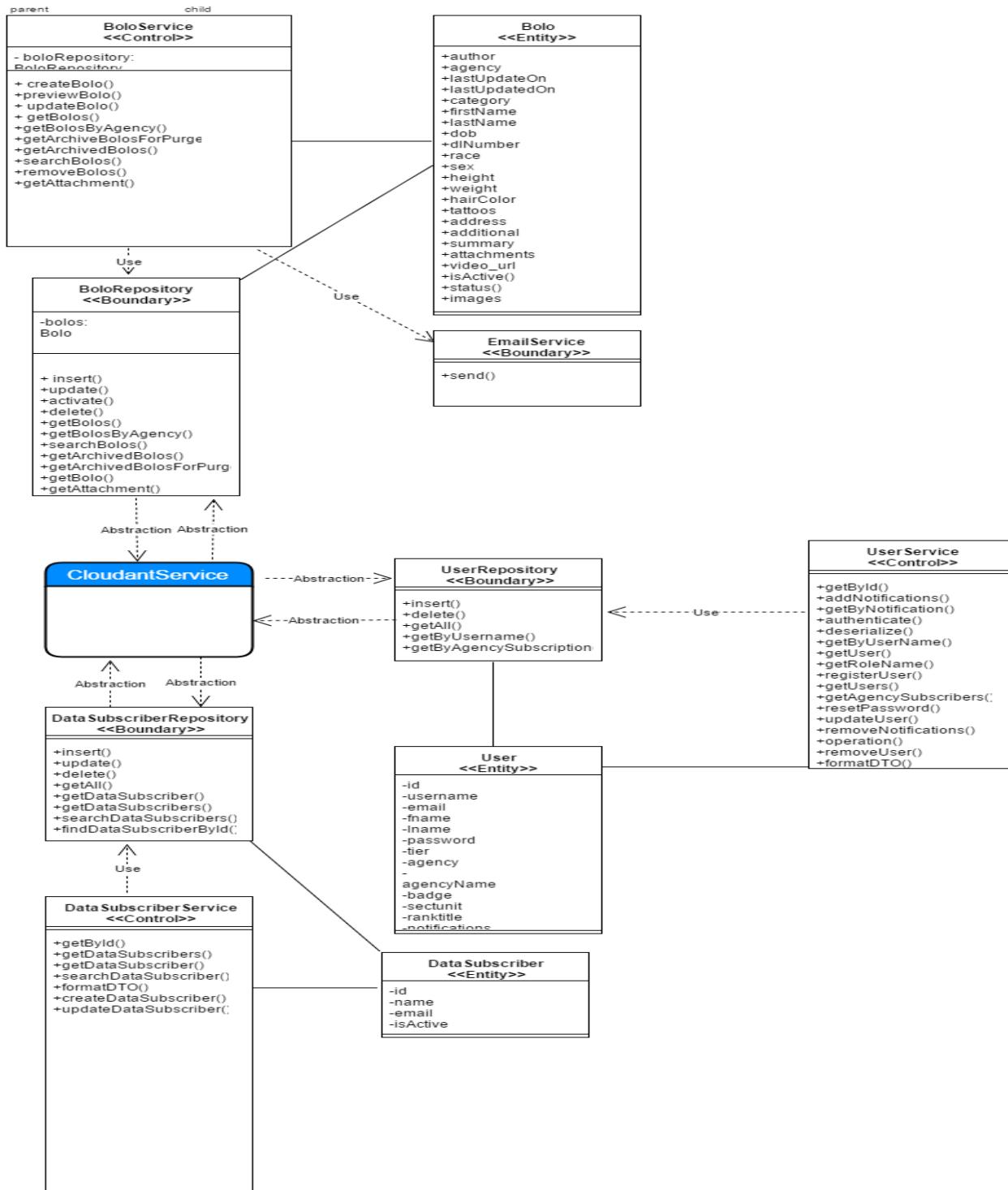
User Story #891 Prevent password from displaying in url

- Figure sp2-5



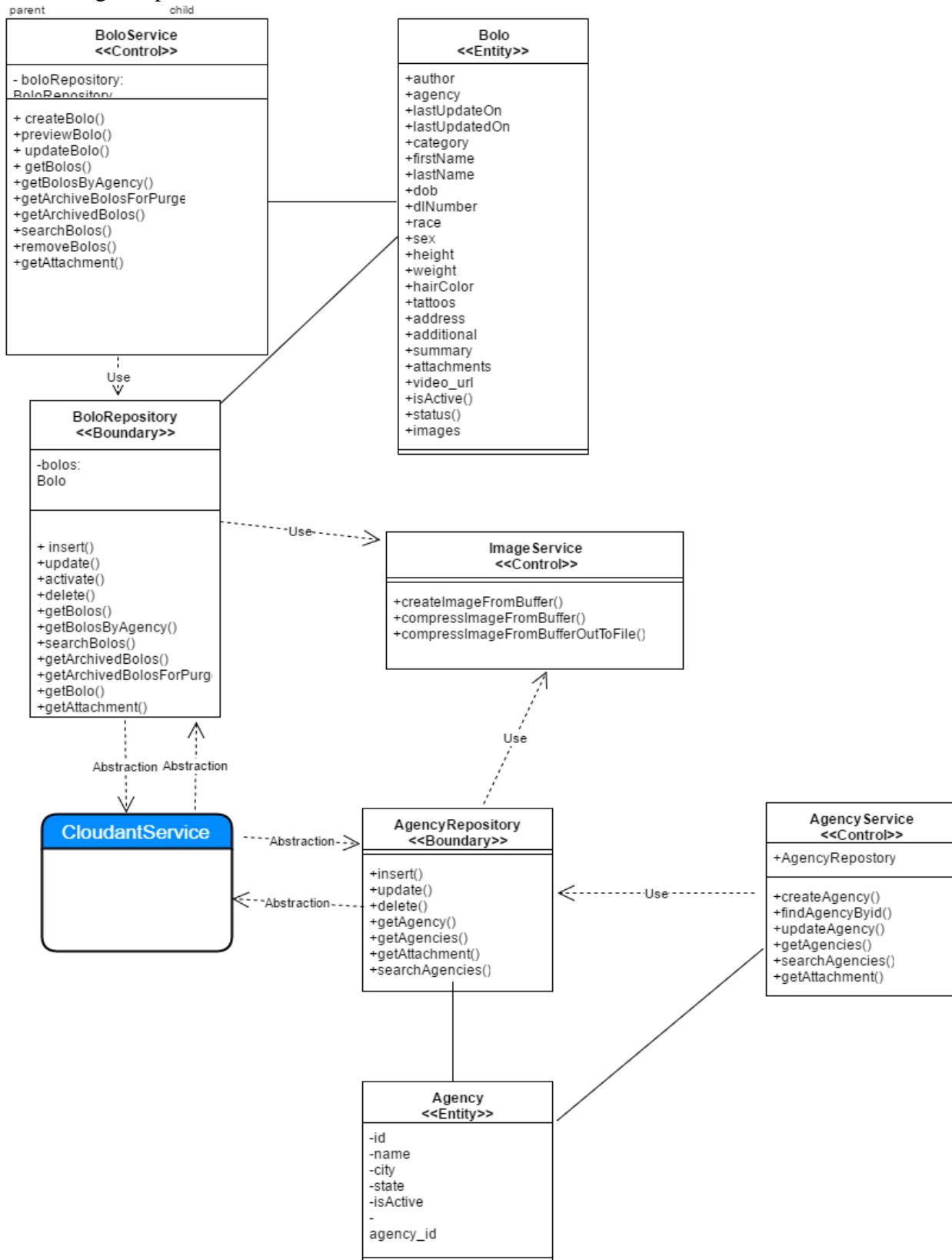
User Story #880 Send feed of BOLOs as JSON documents

- Figure sp2-6



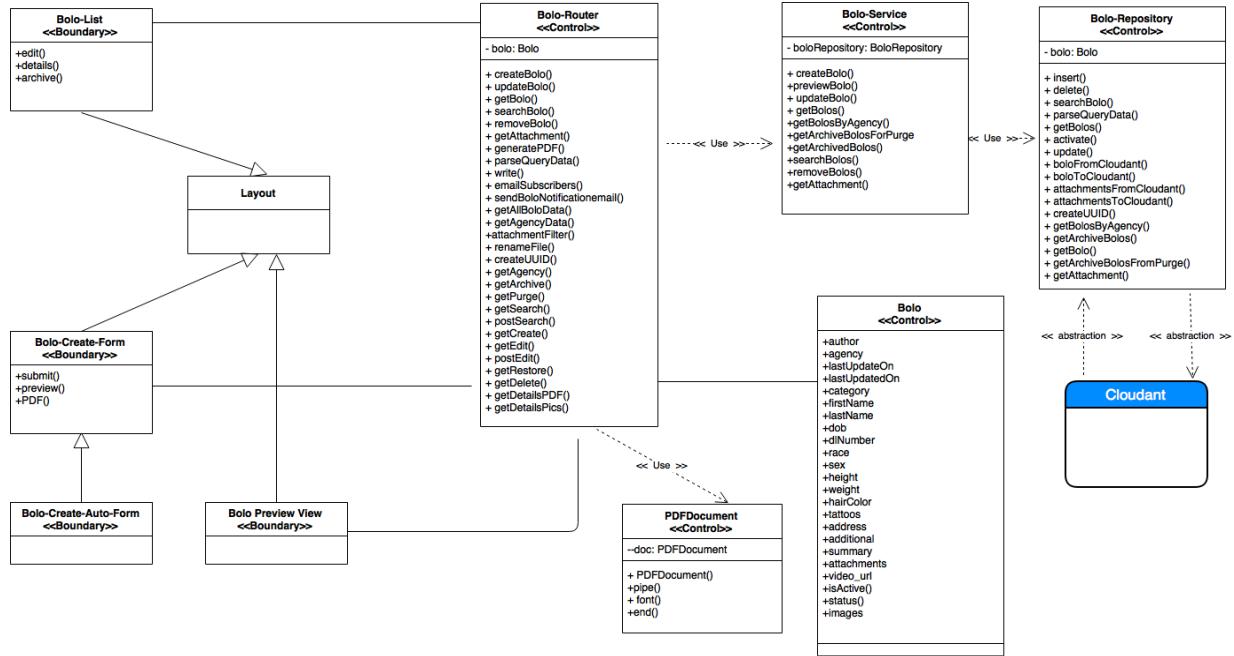
User Story #920 Compress images upon upload

- Figure sp2-7

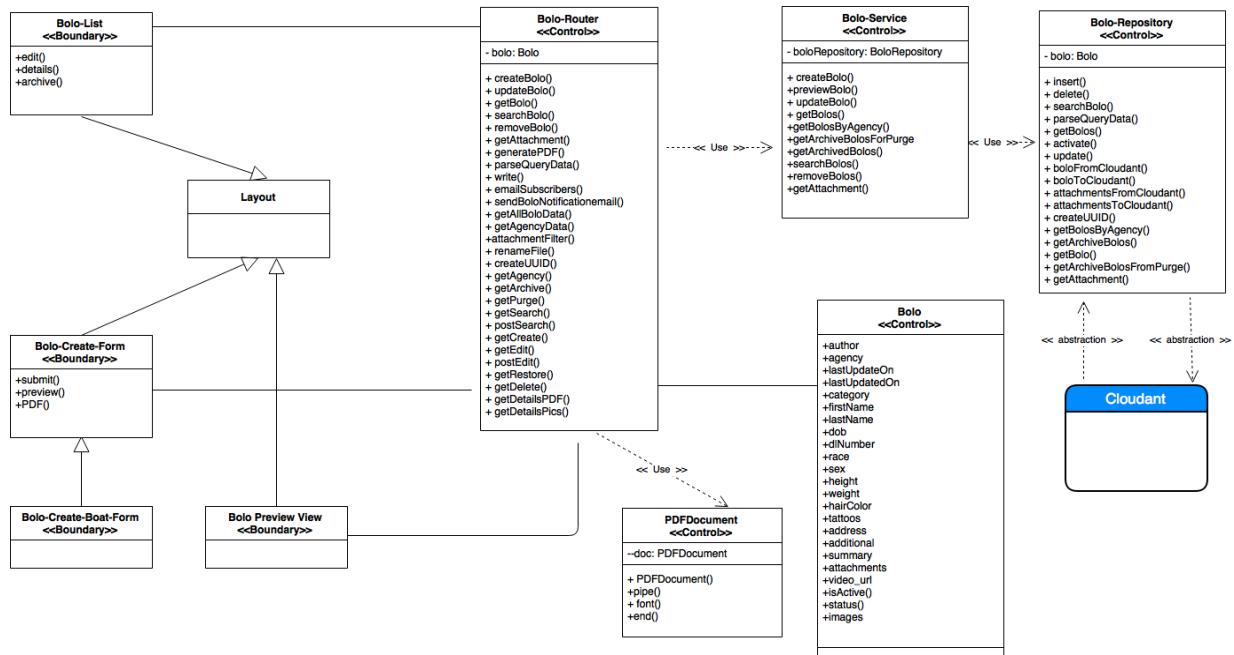


User Story #896 Create specific Bolo for Theft-Auto

- Figure sp2-8

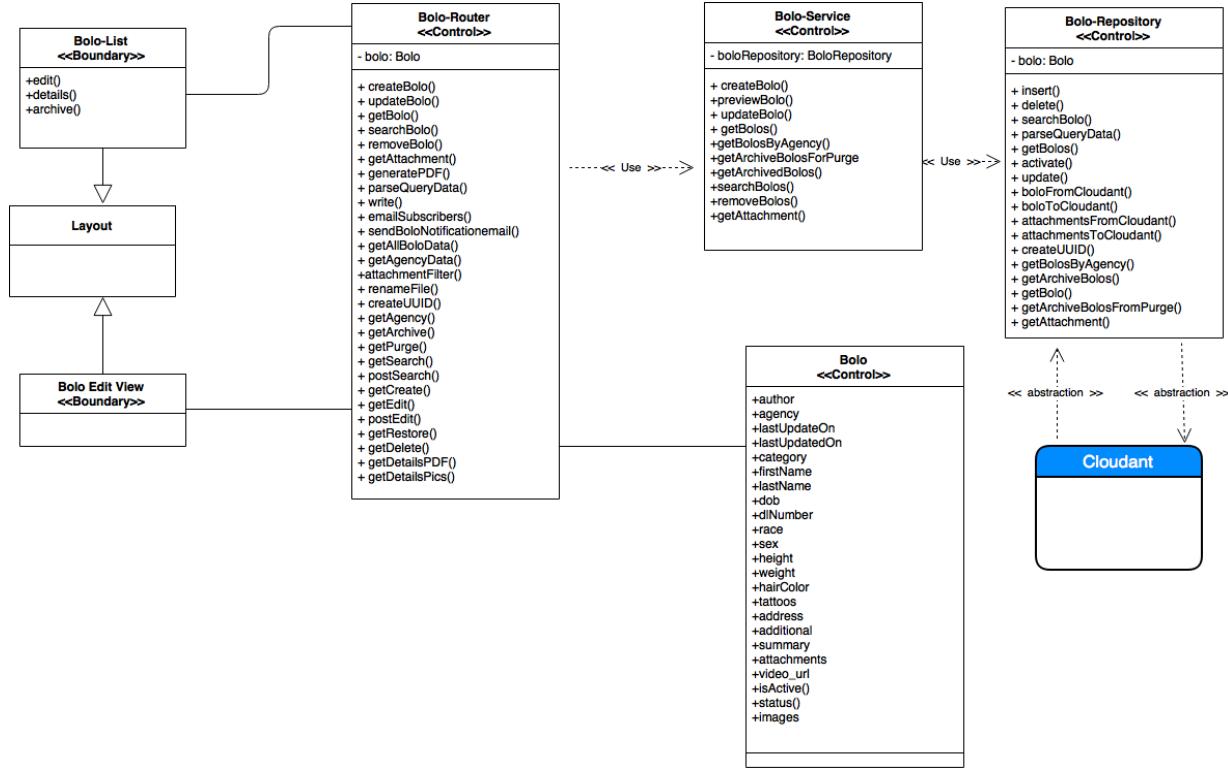
**User Story #932** View Bolo Details for Theft-Auto

- Figure sp2-9

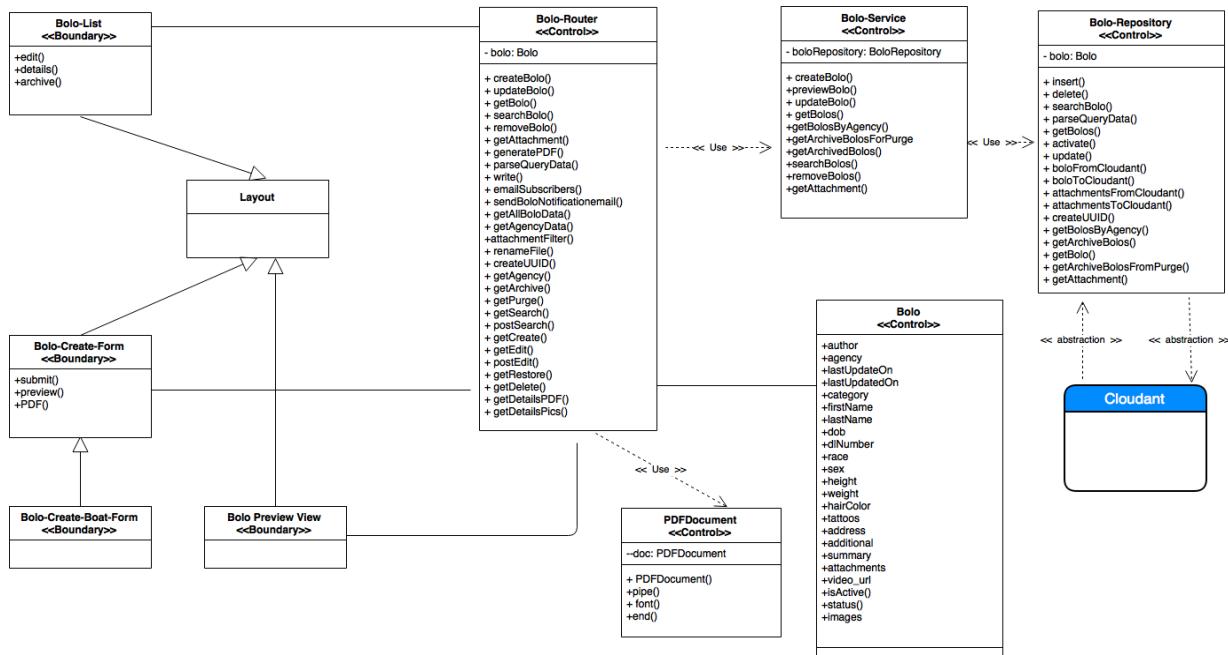


User Story #933 Edit bolo for Theft-Auto

- Figure sp2-10

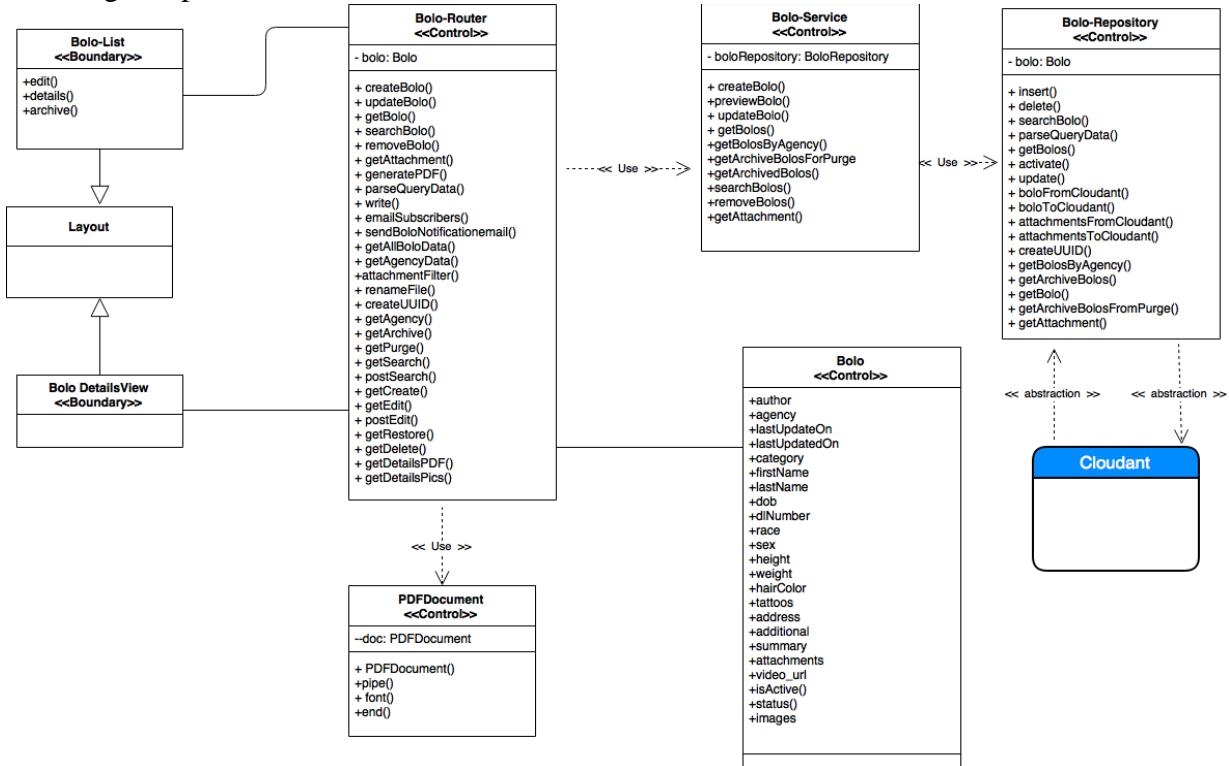
**User Story #936** Create specific Bolo for Theft-Boat

- Figure sp2-11

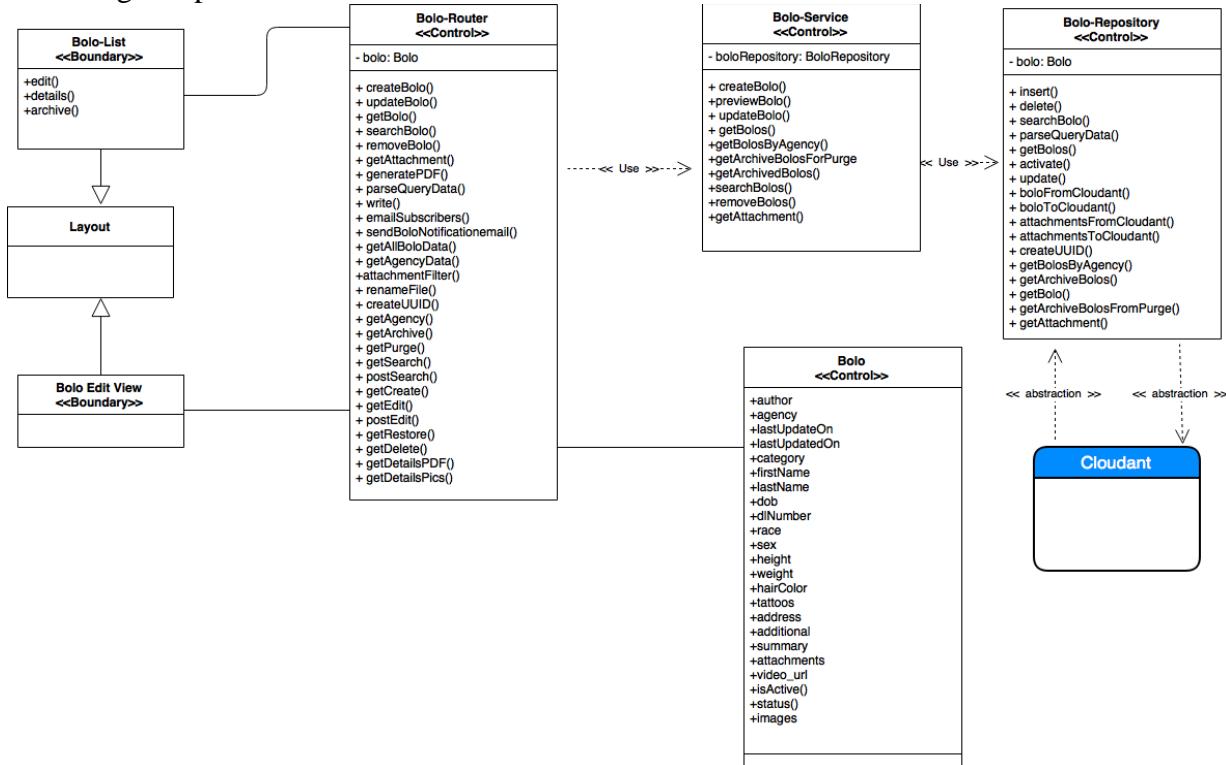


User Story #937 View Bolo Details for Theft-Boat

- Figure sp2-12

**User Story #938** Edit Bolo for Theft-Boat

- Figure sp2-13

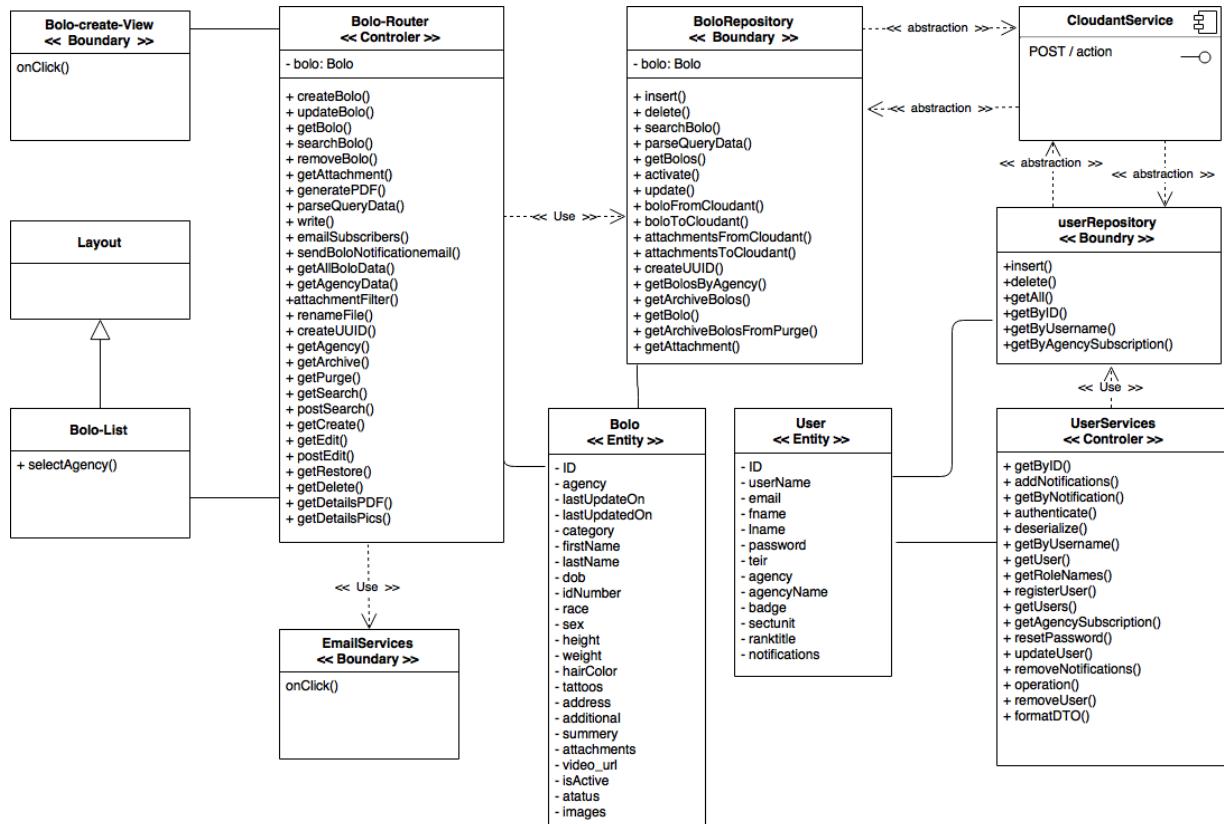


Sprint 3

(06/20/2016 – 07/03/2016)

User Story #934 Remove empty fields from PDF bolo for display

- Figure sp3-1

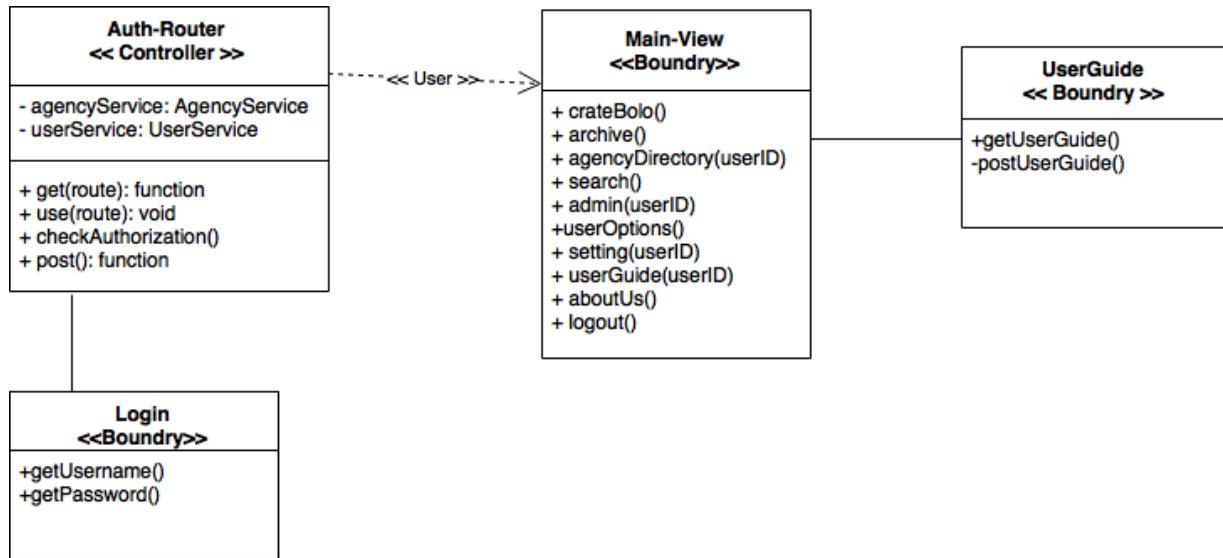


User Story #935 Add drop down menu for links such as settings, user guide, logout and others to be added at a later time

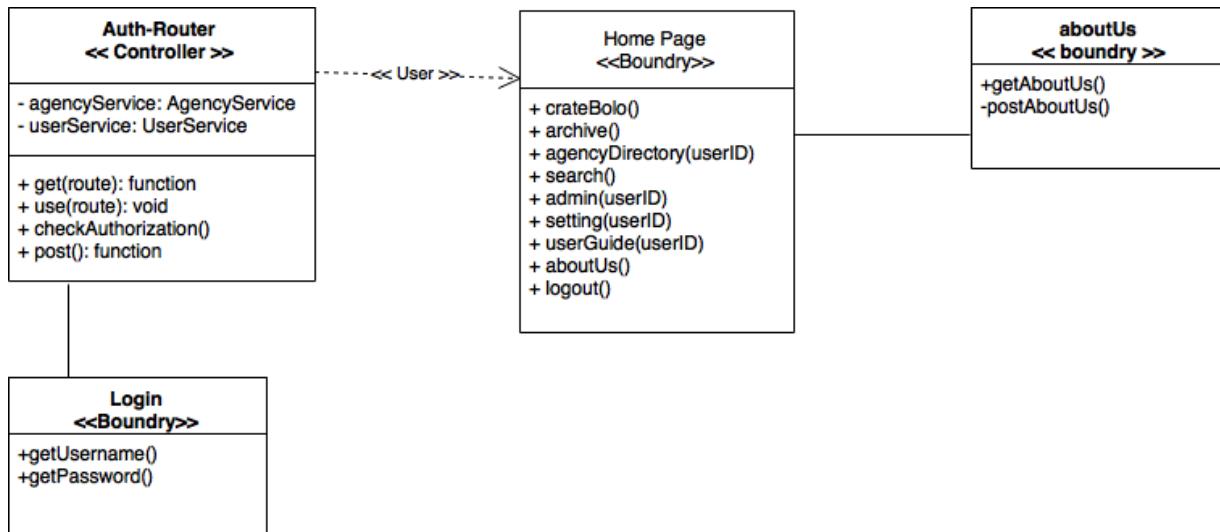
- No diagrams

User Story #1006 Add a user guide page for each tier

- Figure sp3-2

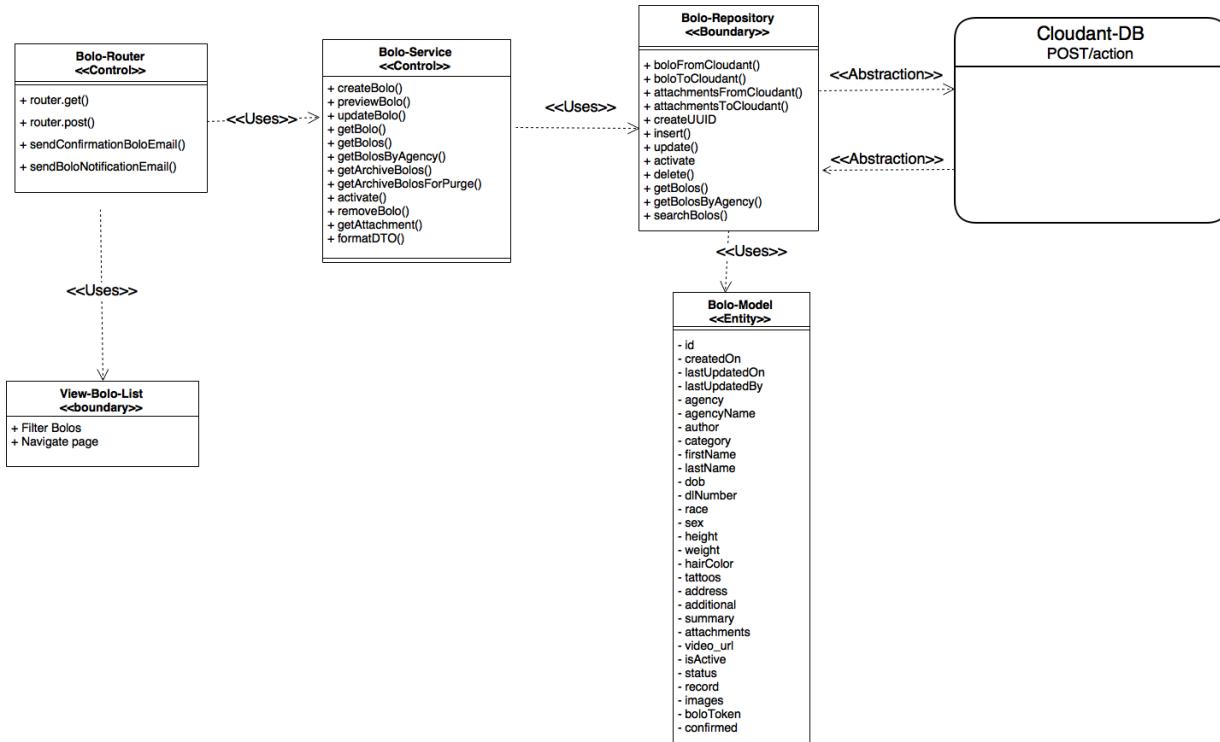
**User Story #1046** Add an about us page

- Figure sp3-3



User Story #1011 Filter BOLOS by author and reformat the dropdown

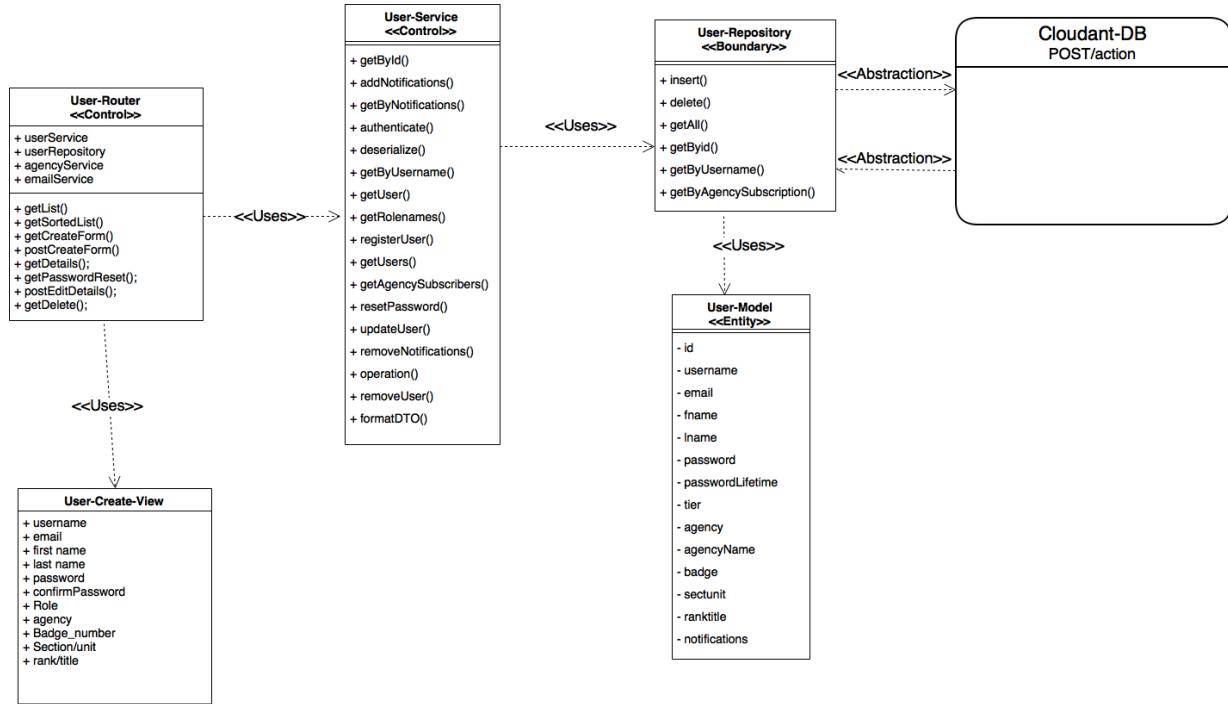
- Figure sp3-4

**User Story #1009** Automate database creation via scripts

- No diagrams

User Story #1008 Prevent user email domain from being something other than their agency's domain

- Figure sp3-5

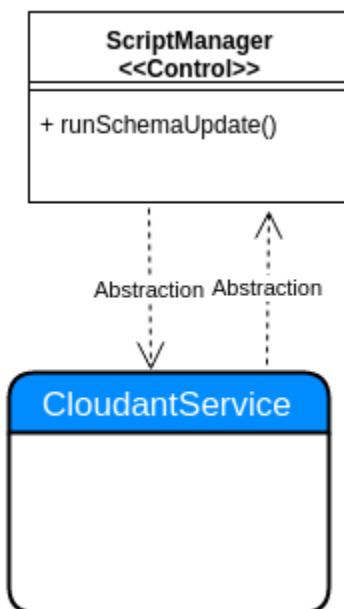


User Story #889 Change bolo email to no-reply

- No diagrams

User Story #931 Create script to reset DB Schema

- Figure sp3-6

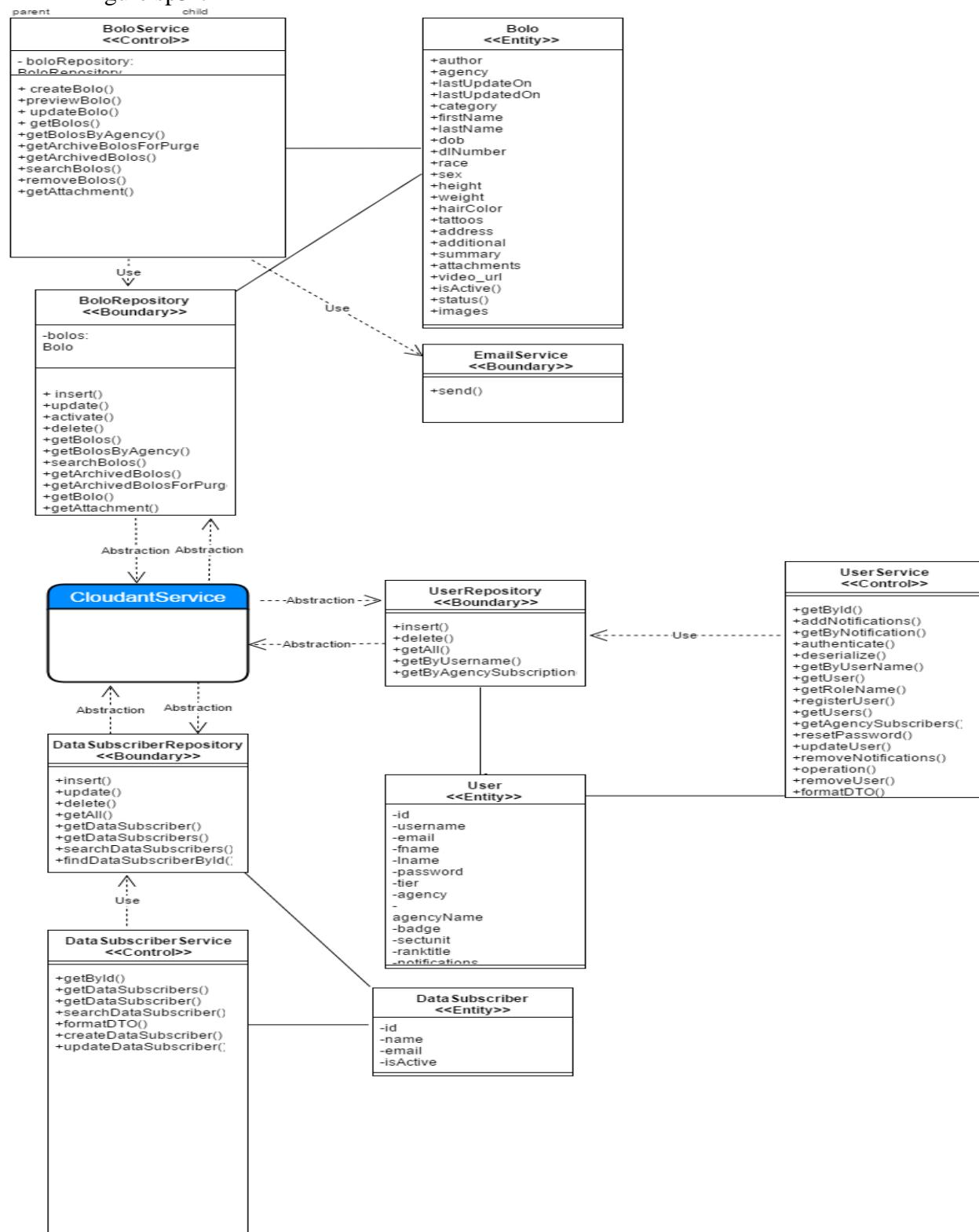


User Story #985 Enhance ImageService

- No diagrams

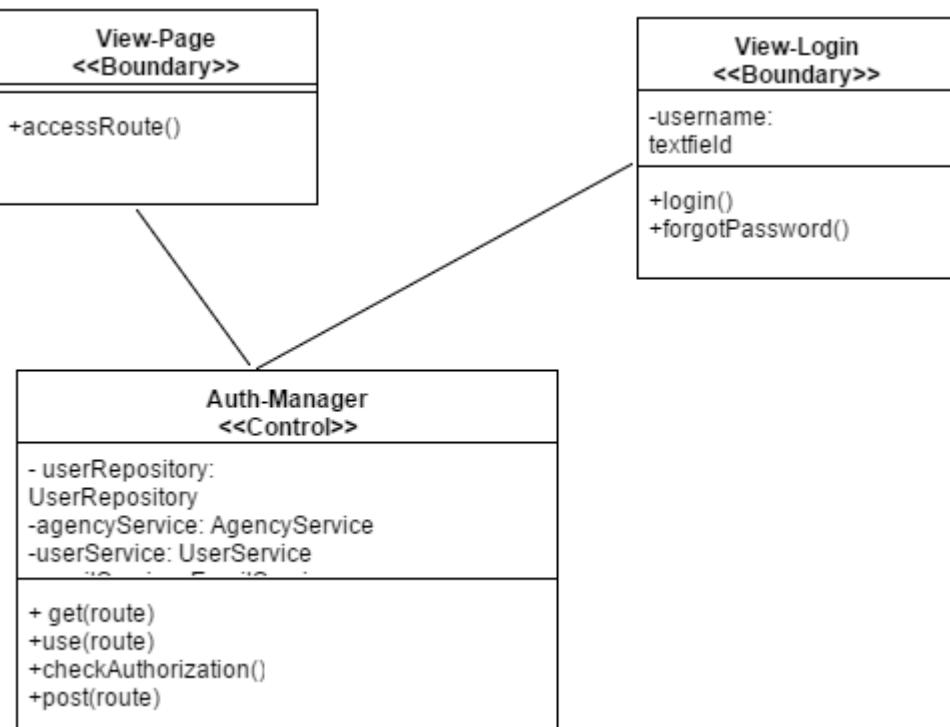
User Story #986 Unsubscribe from BOLO emails

- Figure sp3-7



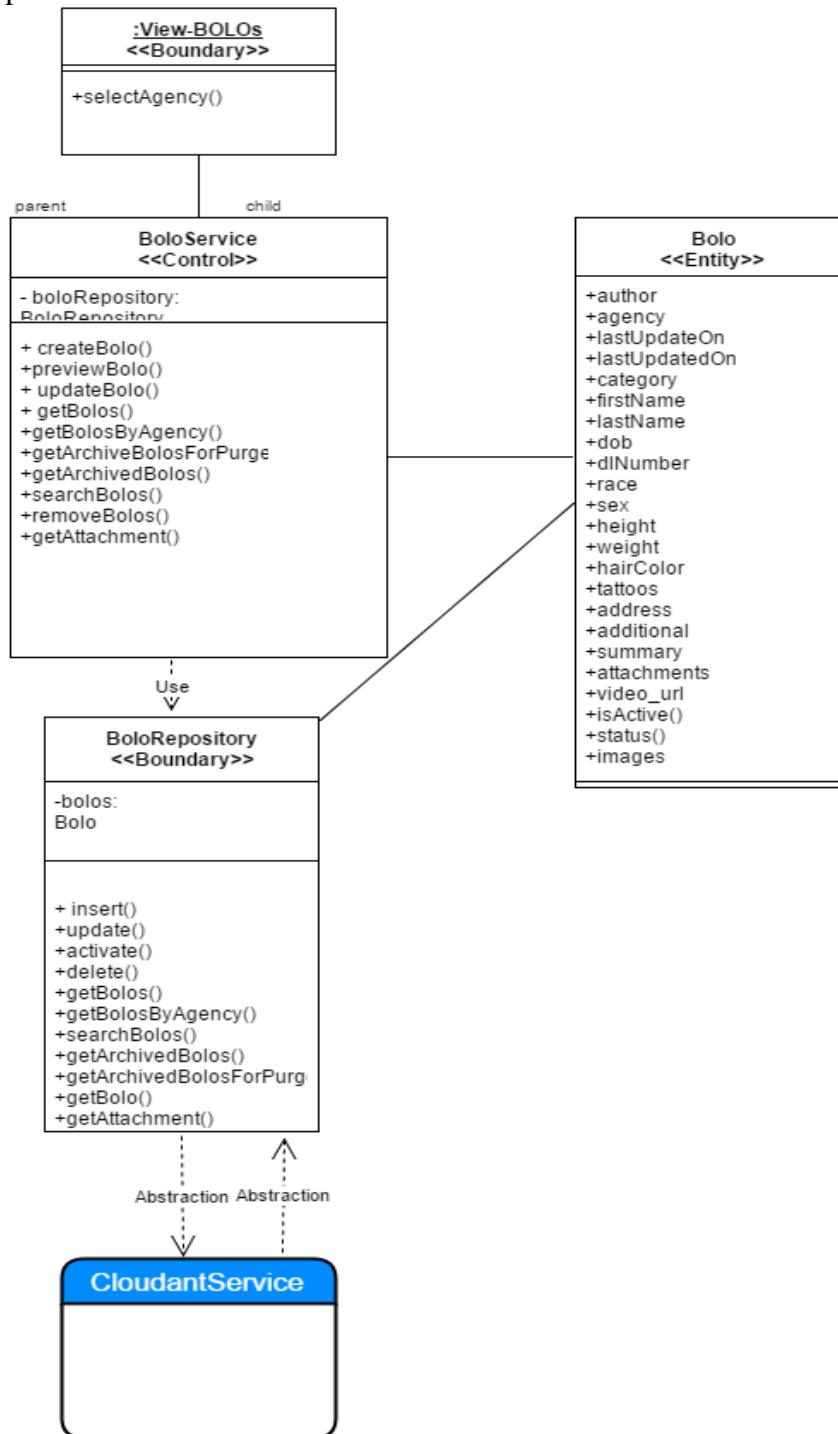
User Story #1001 Implement routes with authentication

- Figure sp3-8



User Story #1007 Redesign Filter by Agencies in Home page

- Figure sp3-9

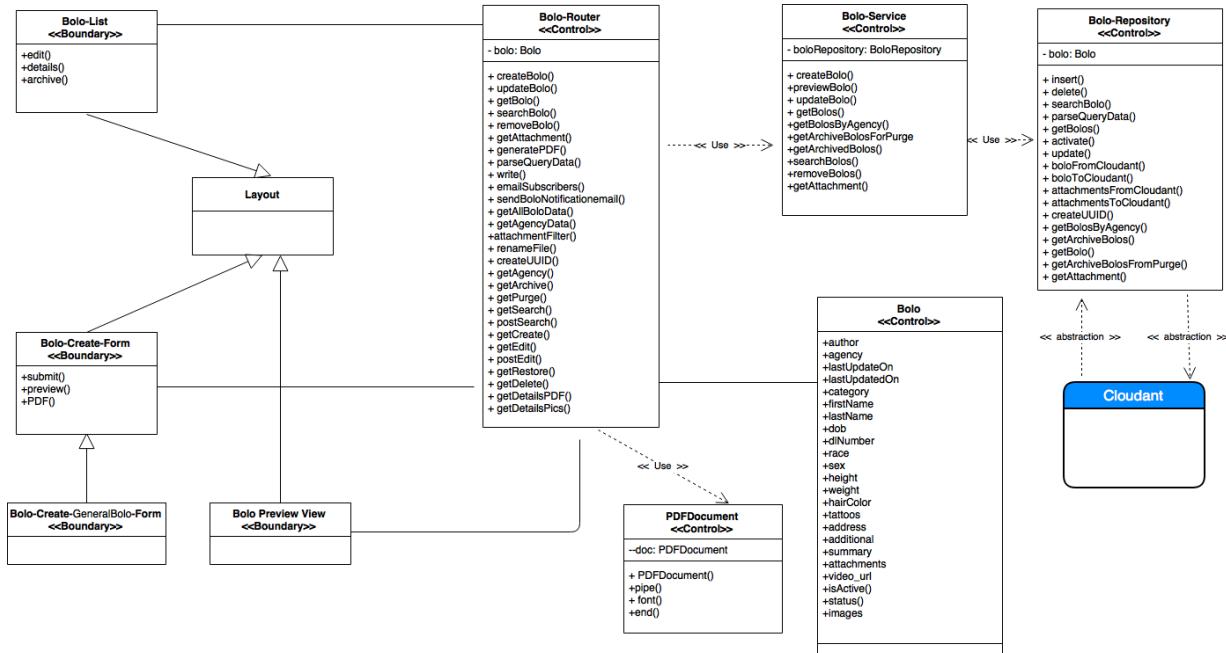


User Story #1033 Fix several bugs

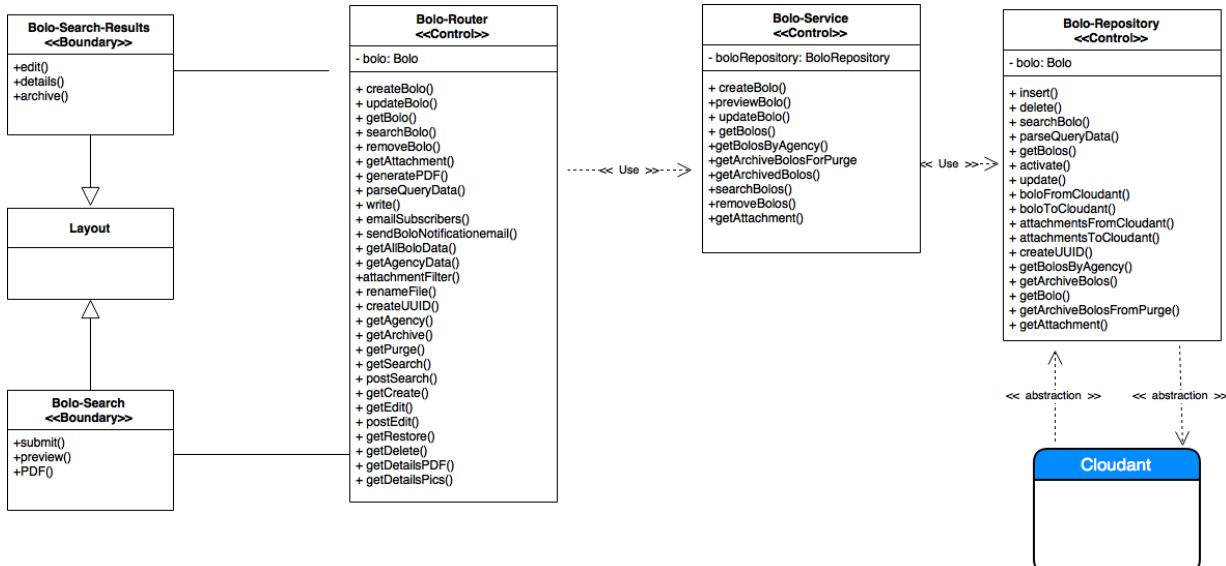
- No diagrams

User Story #990 Redesign and add validations for General Bolo Template

- Figure sp3-10

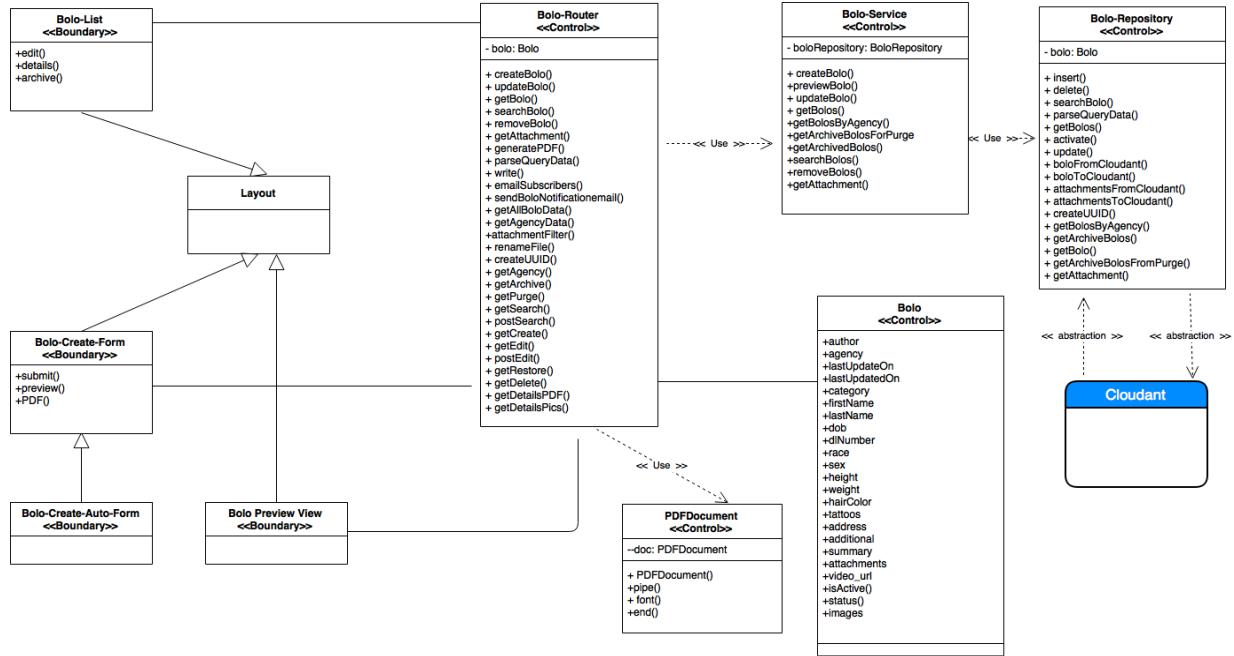
**User Story #981** Implement Search for New Bolo Templates

- Figure sp3-11

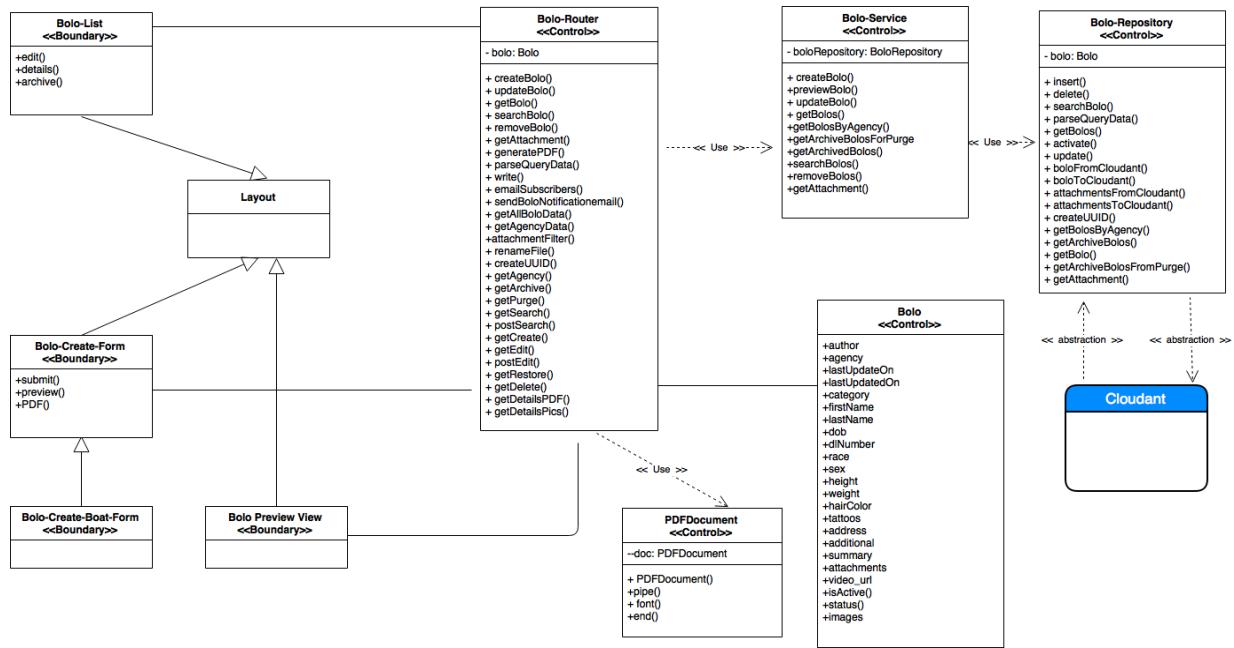


User Story #991 Redesign and add validations for Theft Auto Template

- Figure sp3-12

**User Story #992 Redesign and add validations for Theft Boat Template**

- Figure sp3-13

**User Story #1030 Delete the Ongoing Status from Bolo**

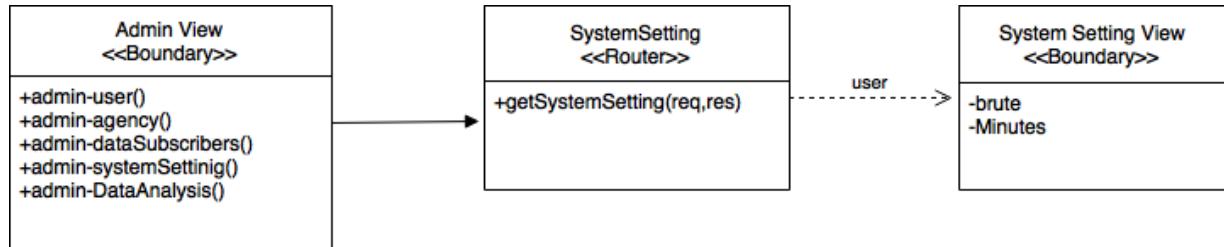
- No diagrams

Sprint 4

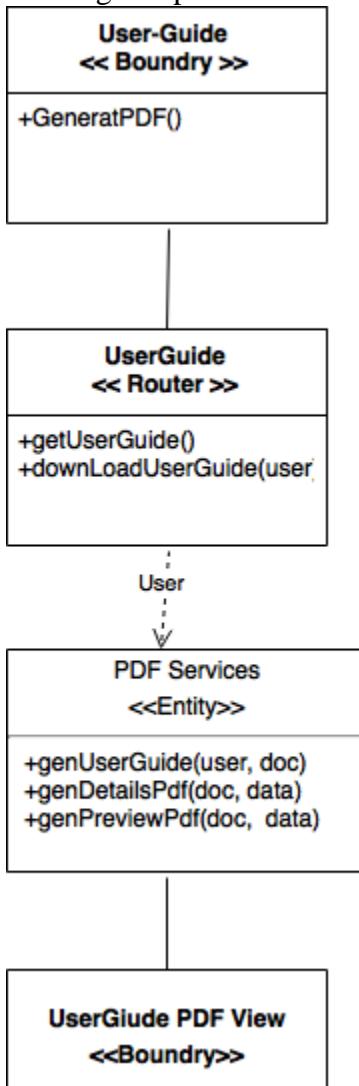
(07/04/2016 – 07/17/2016)

User Story #1010 Create a front end page for root to customize system settings

- Figure sp4-1

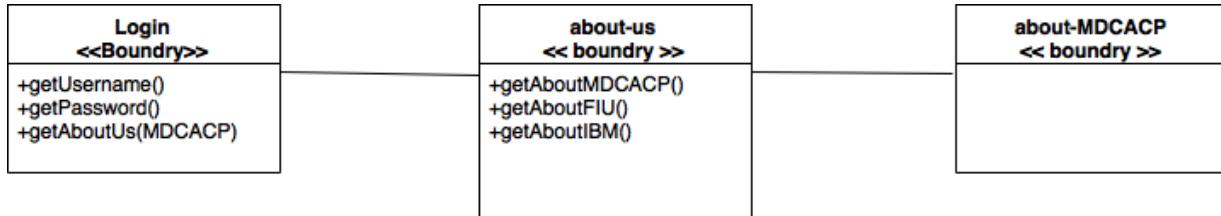
**User Story #1096** Implement a link to download a PDF of the user's guide based on user's tier

- Figure sp4-2



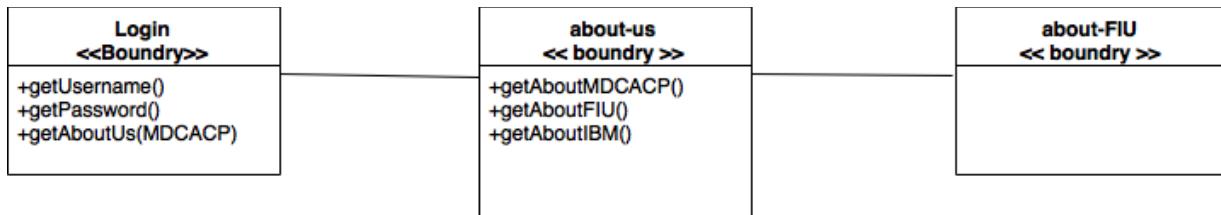
User Story #1097 Implement an About Miami Dade County Association of Chief of Police (MDCACP) page

- Figure sp4-3



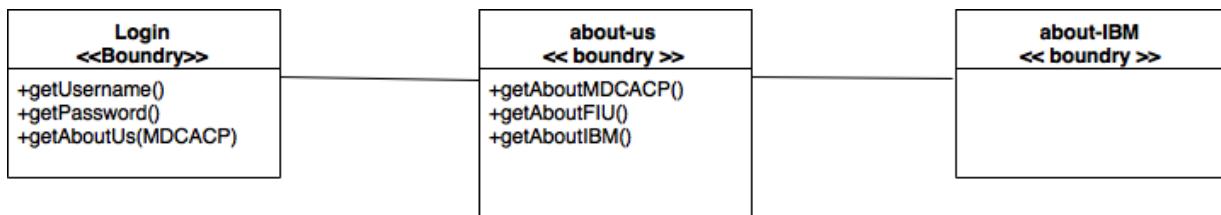
User Story #1098 Create an about us page for Florida International University's (FIU) contribution

- Figure sp4-4



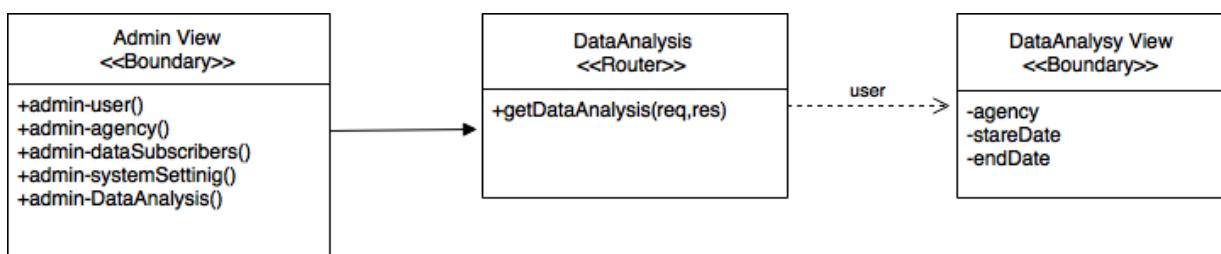
User Story #1099 Create an about us page for IBM's contribution

- Figure sp4-5



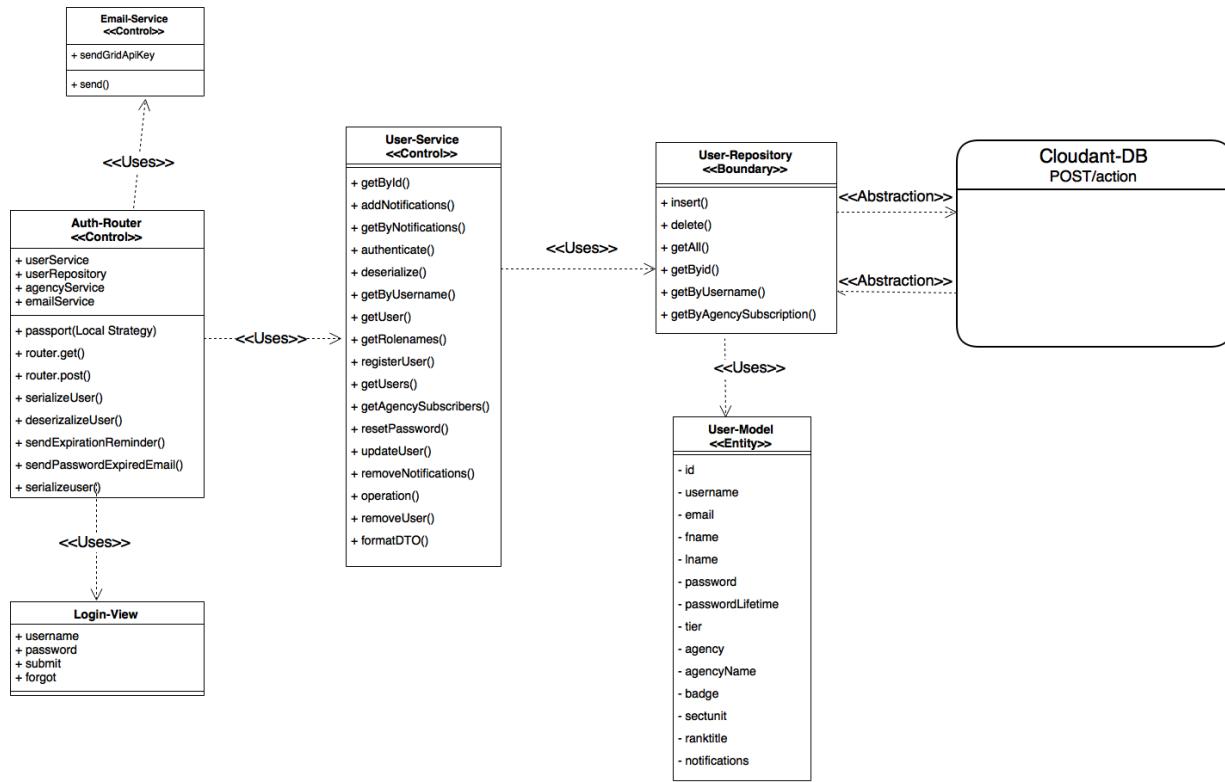
User Story #1100 Create a page where root can retrieve data for analysis

- Figure sp4-6

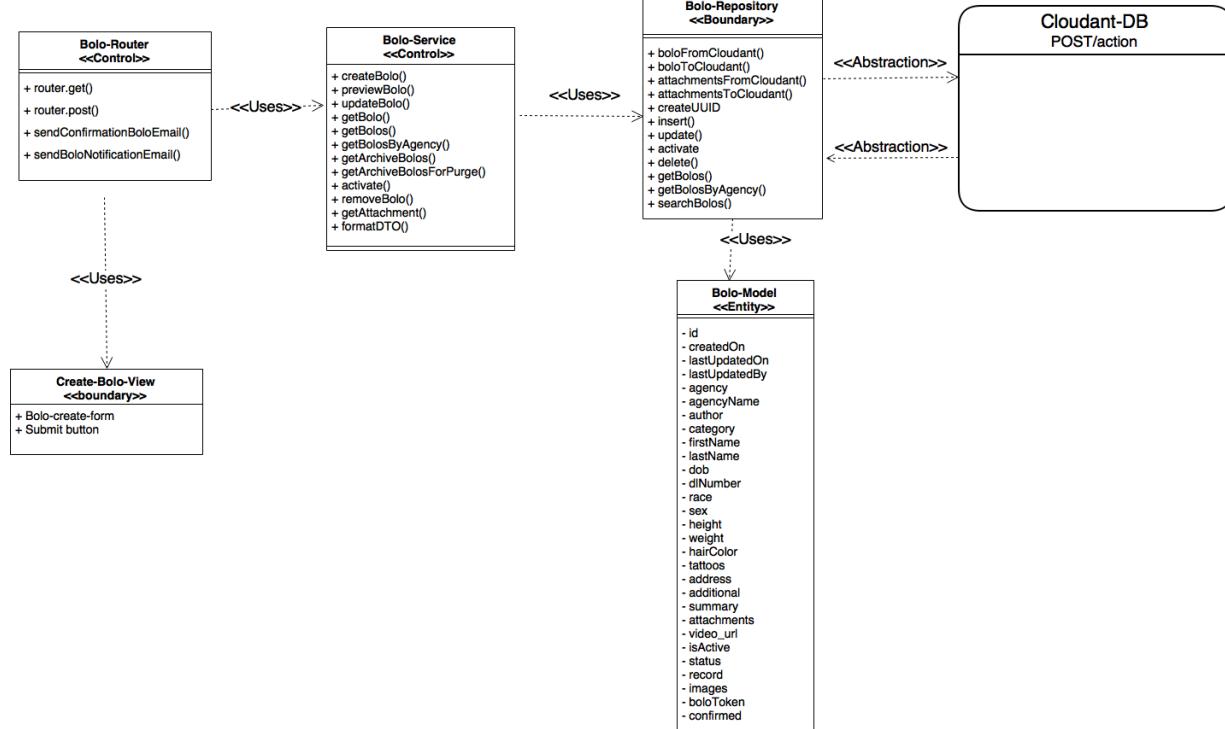


User Story #1014 Lock user account after 10 incorrect login attempts

- Figure sp4-7

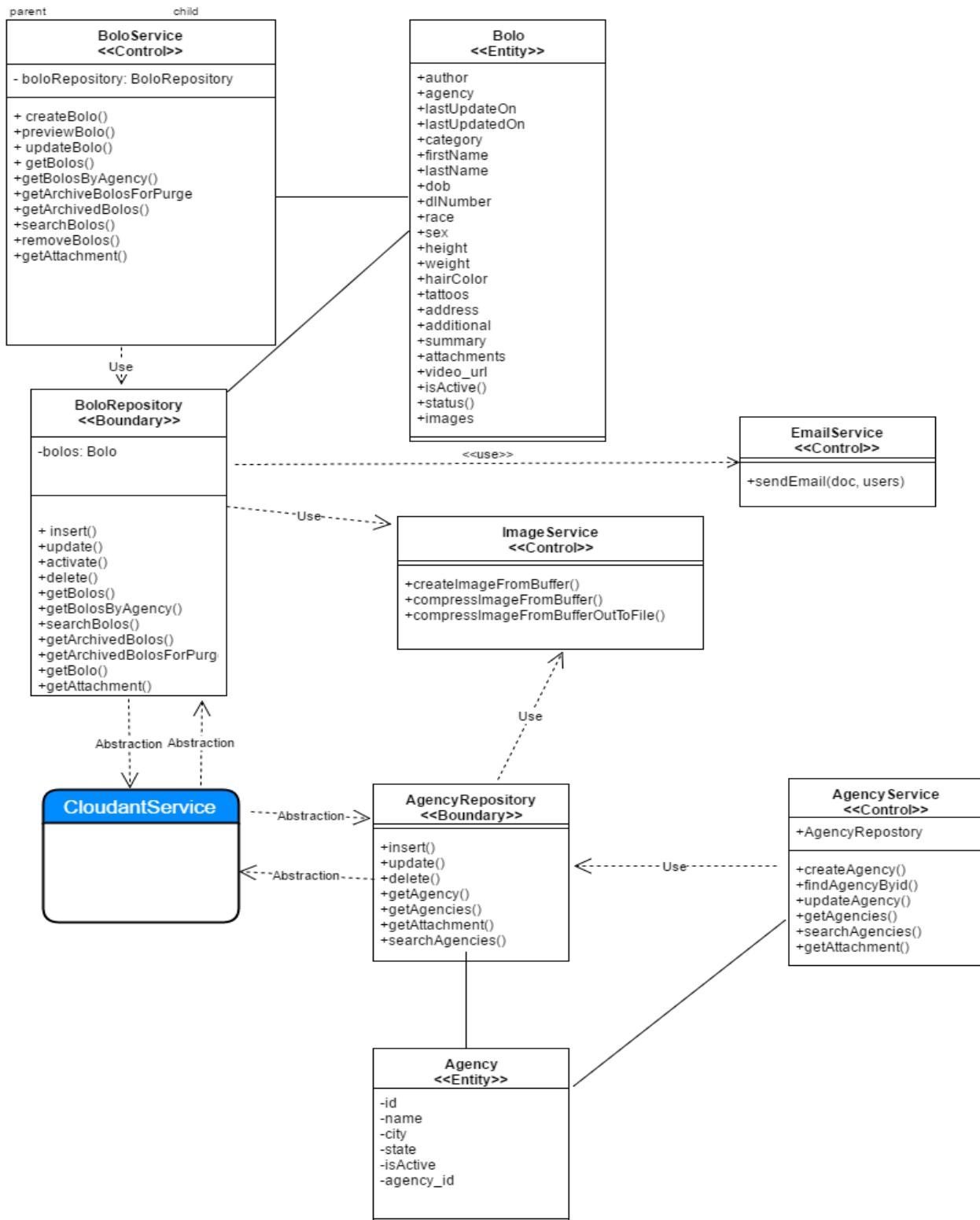
**User Story #1038** Filter by multiple agencies in bolo list page

- Figure sp4-8



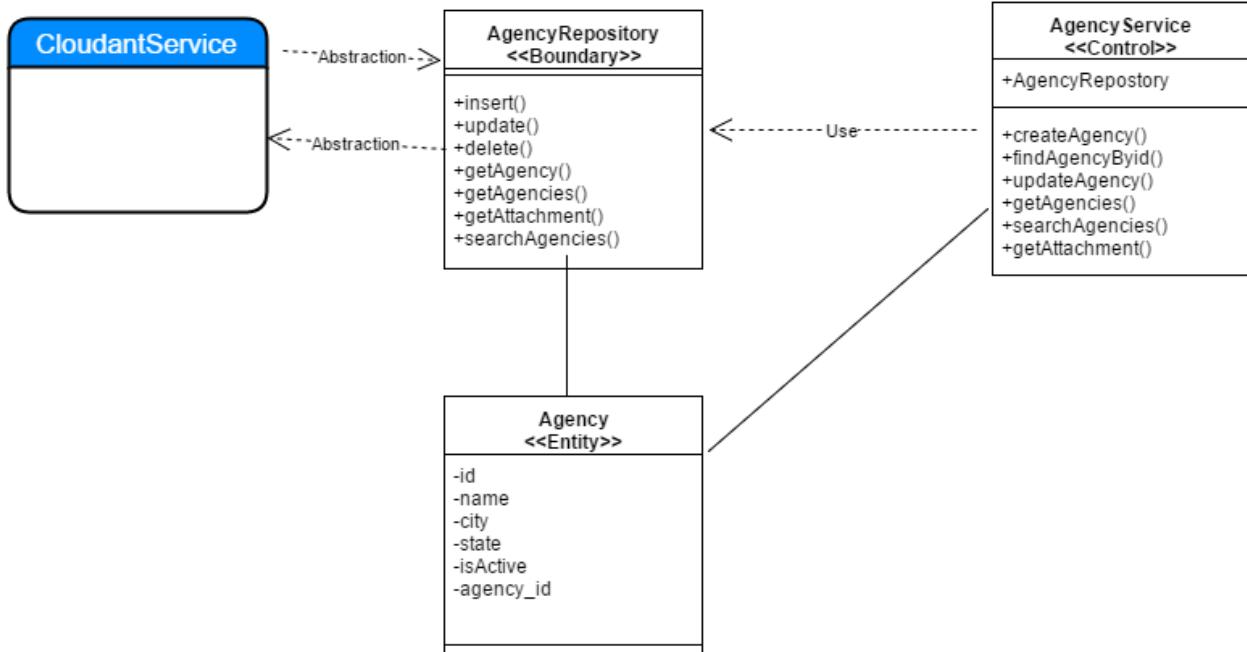
User Story #890 Implement Watermarks for agencies

- Figure sp4-9

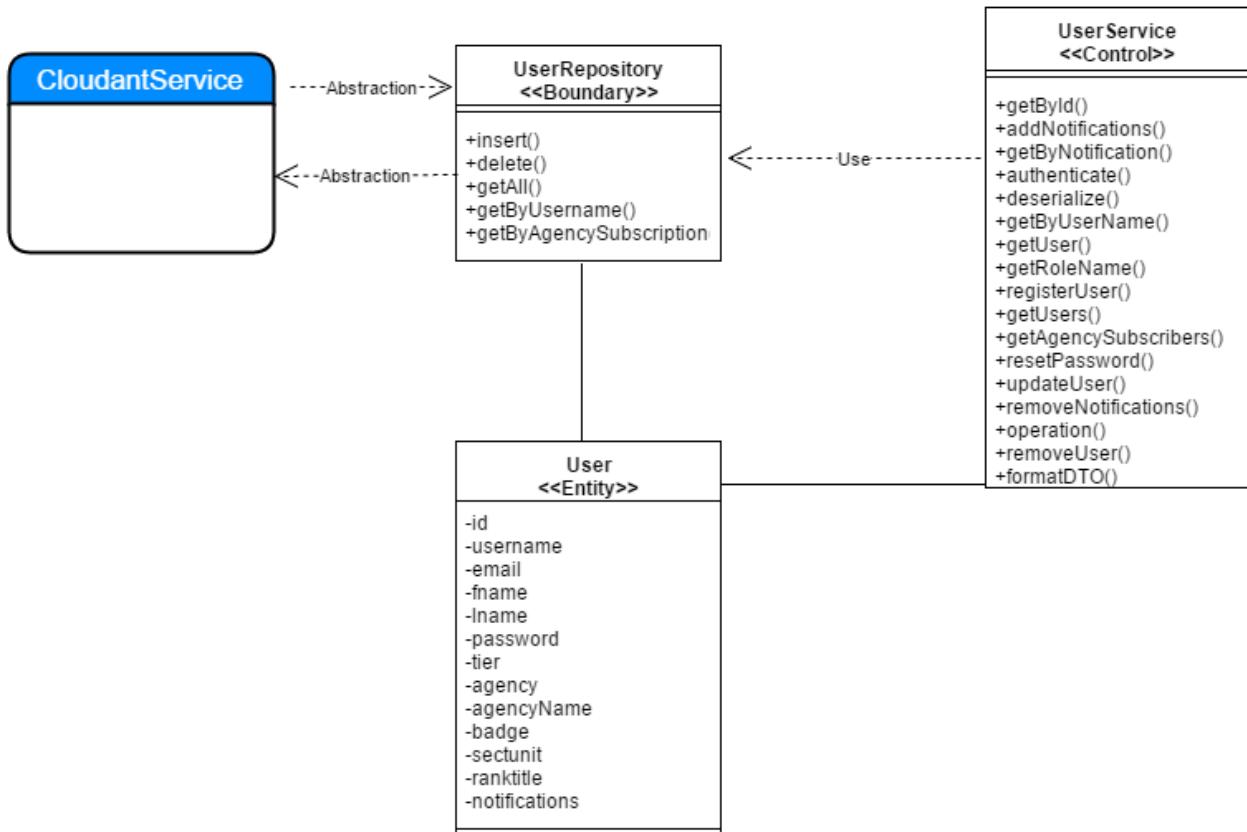


User Story #1037 Allow Tier 3 users to control Agency settings

- Figure sp4-10

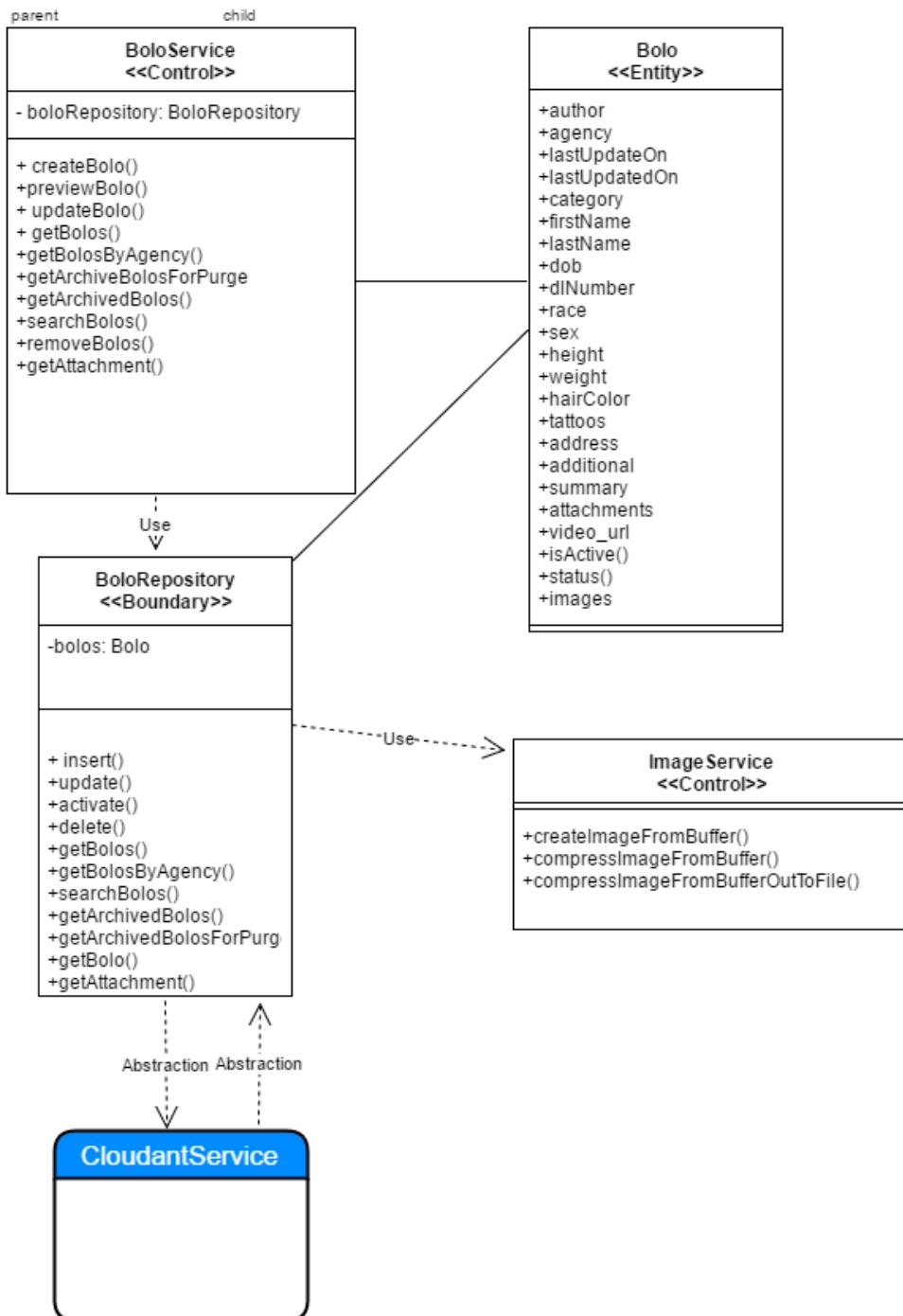
**User Story #1081** Prevent Tier 3 users from granting Root access

- Figure sp4-11



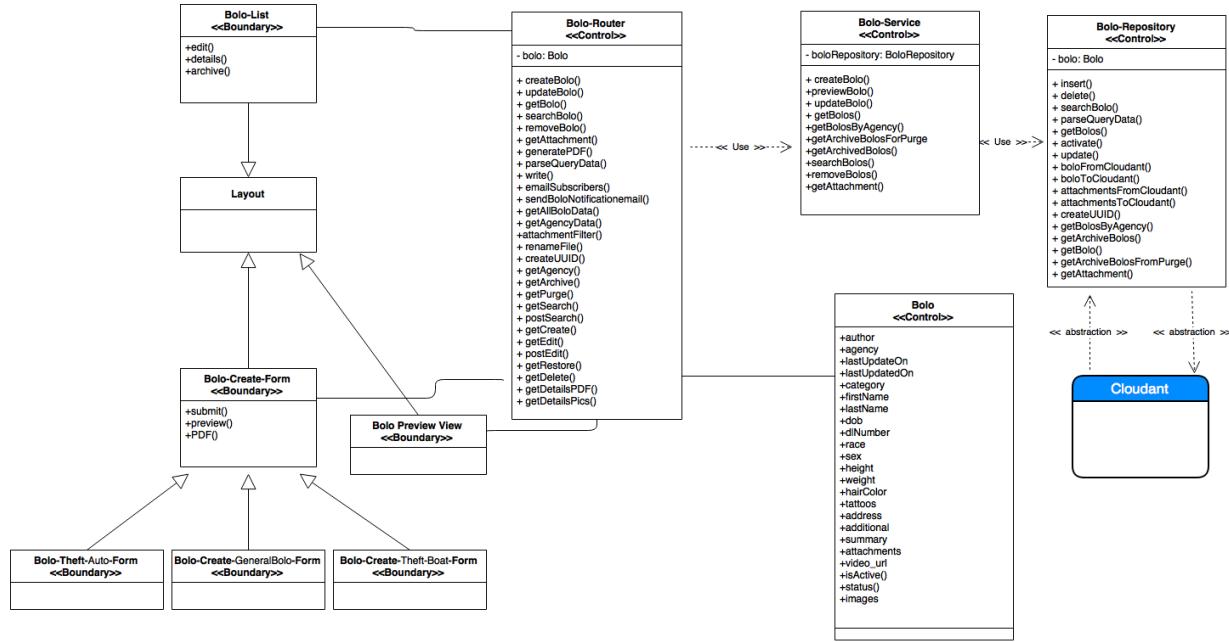
User Story #1083 Prevent Officers from previewing PDFs before confirmation

- Figure sp4-12



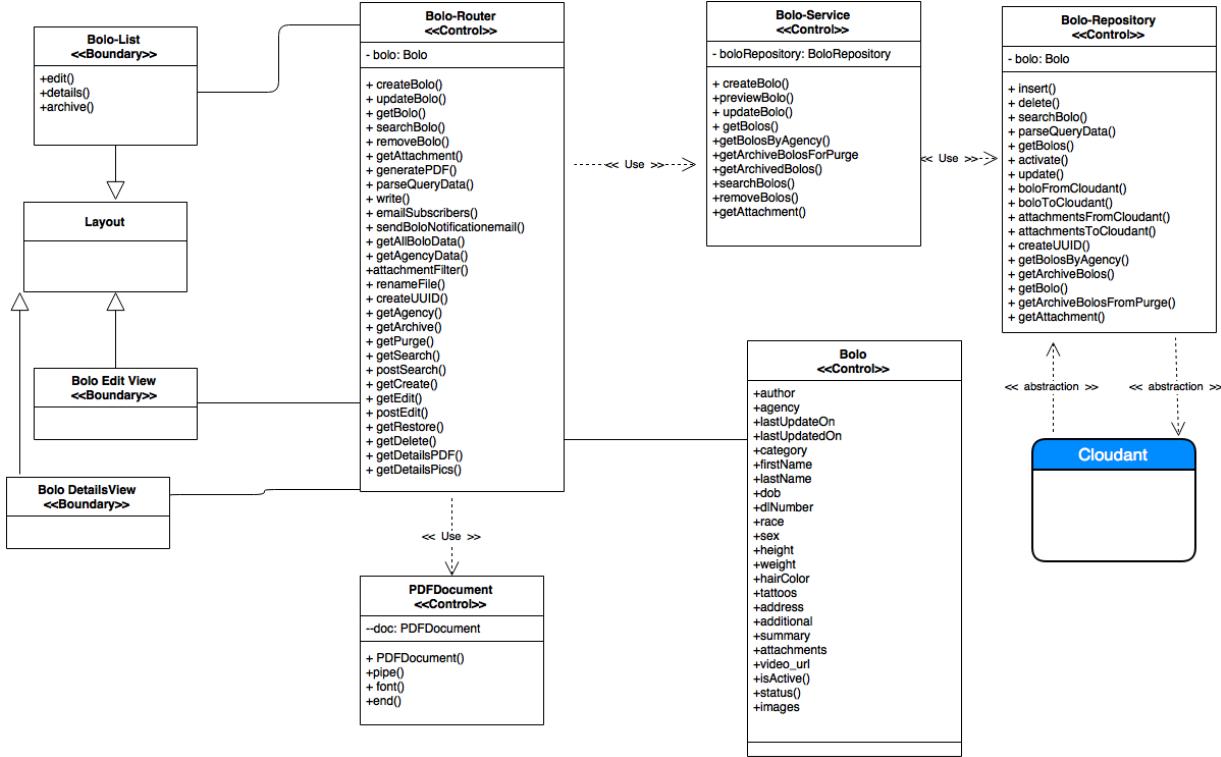
User Story #1087 Implement time retrieval points for data analysis for Create Bolo (General - Auto - Boat)

- Figure sp4-13



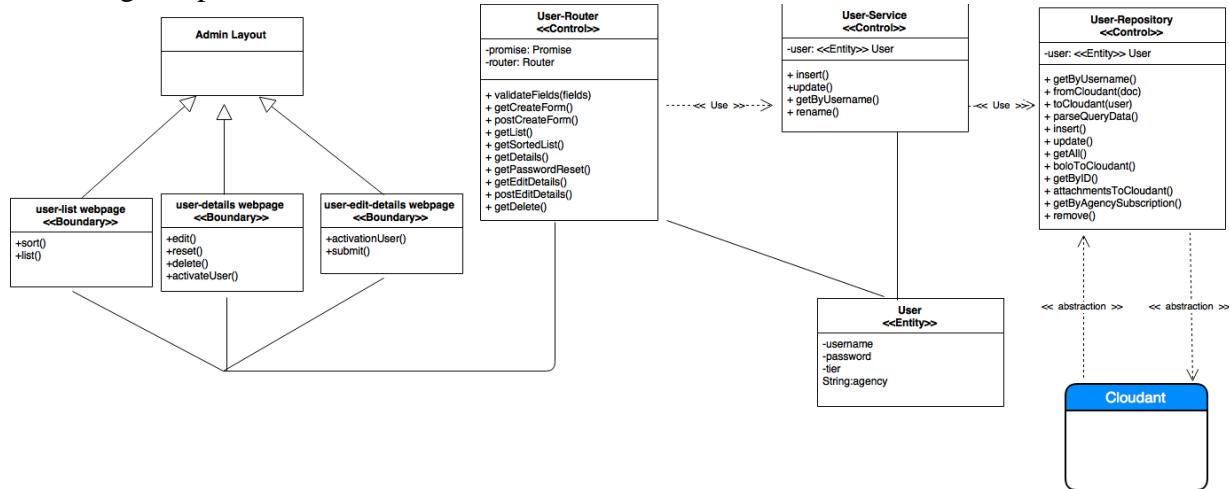
User Story #1119 Implement time retrieval points for data analysis for Edit Bolo (General - Auto - Boat)

- Figure sp4-14



User Story #1088 Deactivate and Activate User Accounts from Root and Administrator

- Figure sp4-15

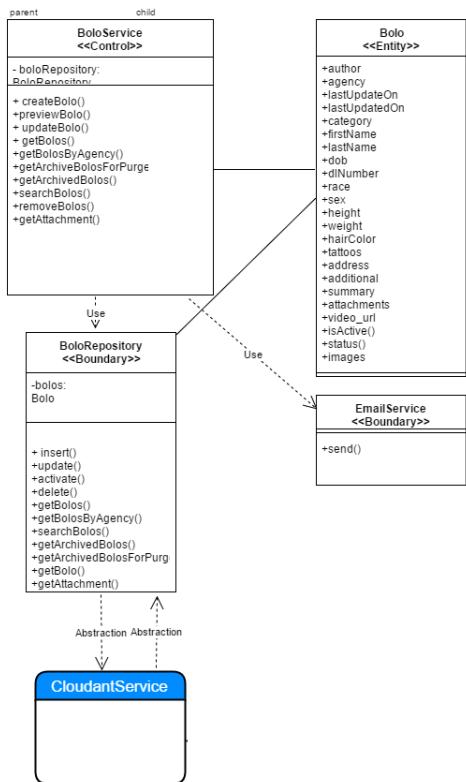


Sprint 5

(07/18/2016 – 07/31/2016)

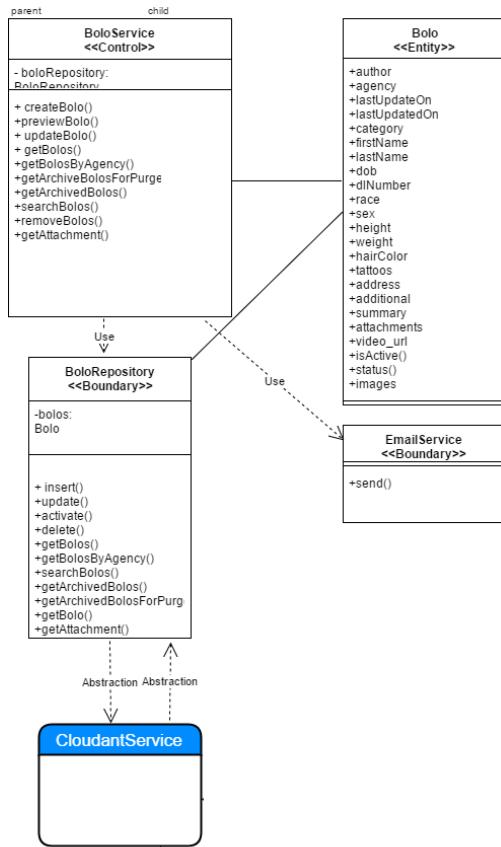
User Story #1094 Implement confirmation of BOLO updates

- Figure sp5-1



User Story #1155 Change PDF labels

- Figure sp5-2



User Story #1086 Change Interactive Edit Menu to Static Label for Status. Keep Data Field Contents After Validations When a New User and a New Agency is Created. Add New Aesthetic for Bolo Buttons

- No diagrams

User Story #1089 Show Edit and Archive only for Root and Administrators and Only View for Users. Create the functionality to go back for Details for Bolos (General, Auto and Boat). Create the ability for view a Bolo when it is Archived, and show edit and restore for Root

- No diagrams

User Story #1163 Connect system setting page to backend

- No diagrams

User Story #1164 connect data analysis page to backend

- No diagrams

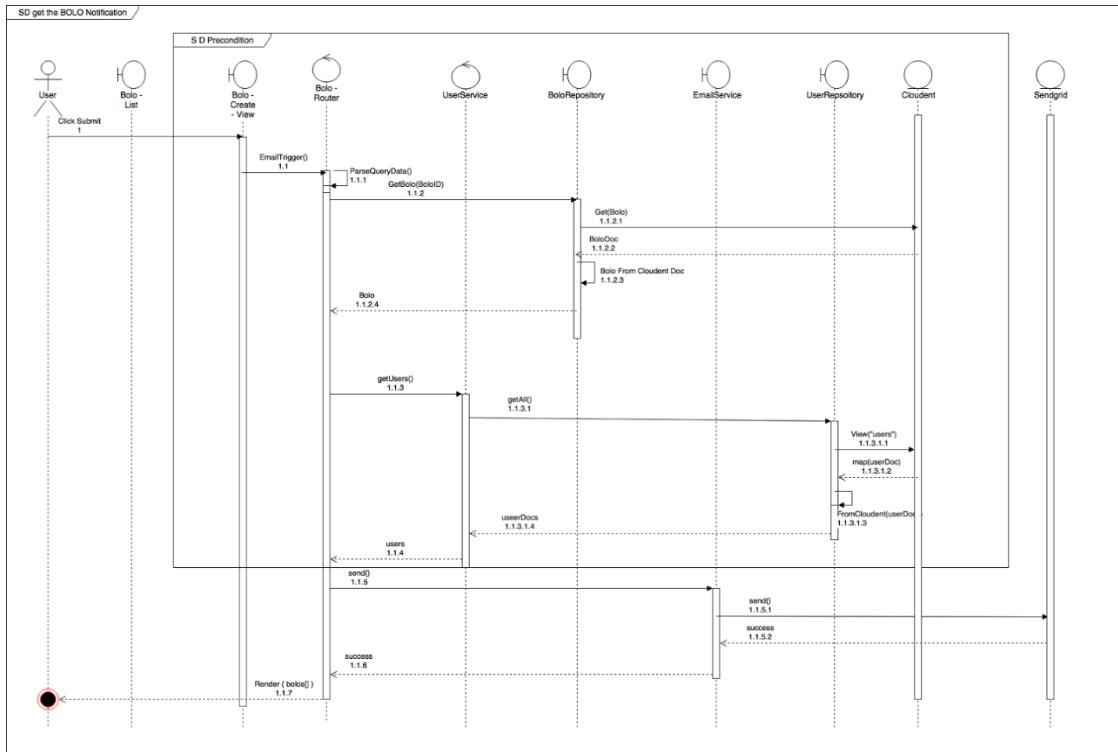
Dynamic UML Diagrams

Sprint 1

(05/23/2016 - 06/05/2016)

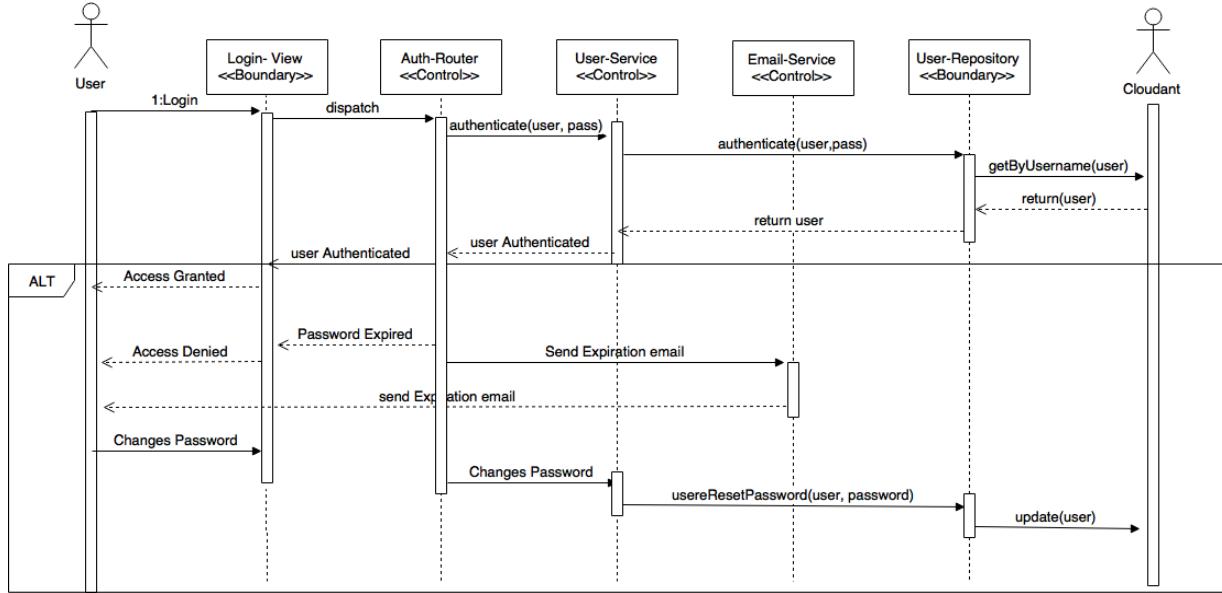
User Story #887 Remove unnecessary data from email alert

- Figure sp1-1

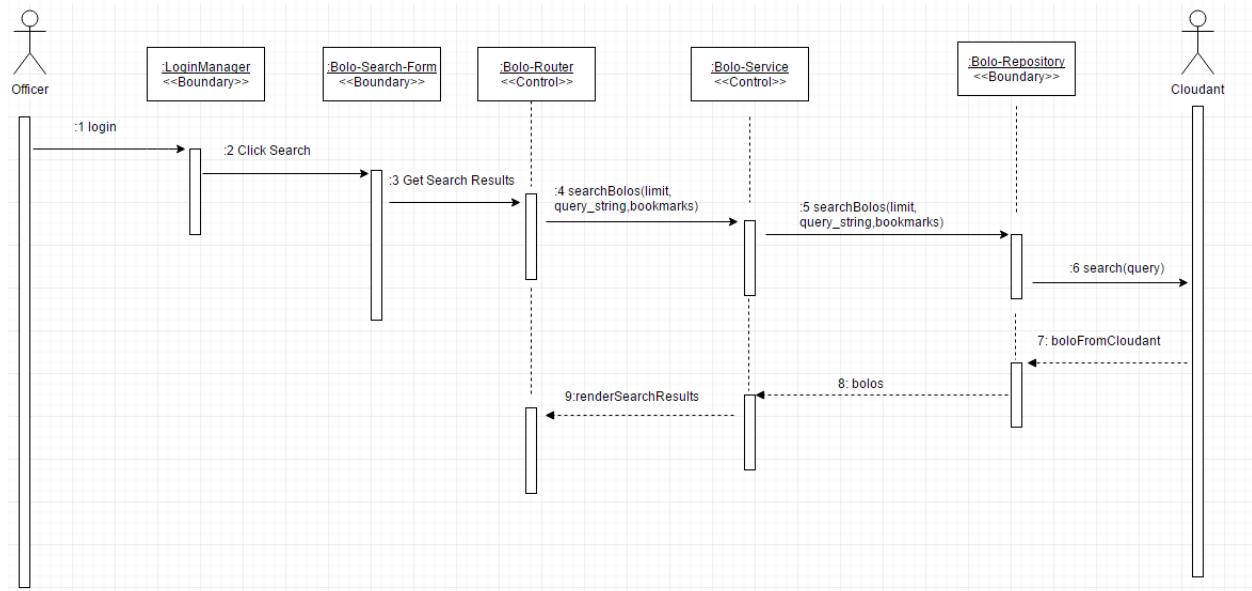


User Story #892 Expire passwords in 90 days

- Figure sp1-2

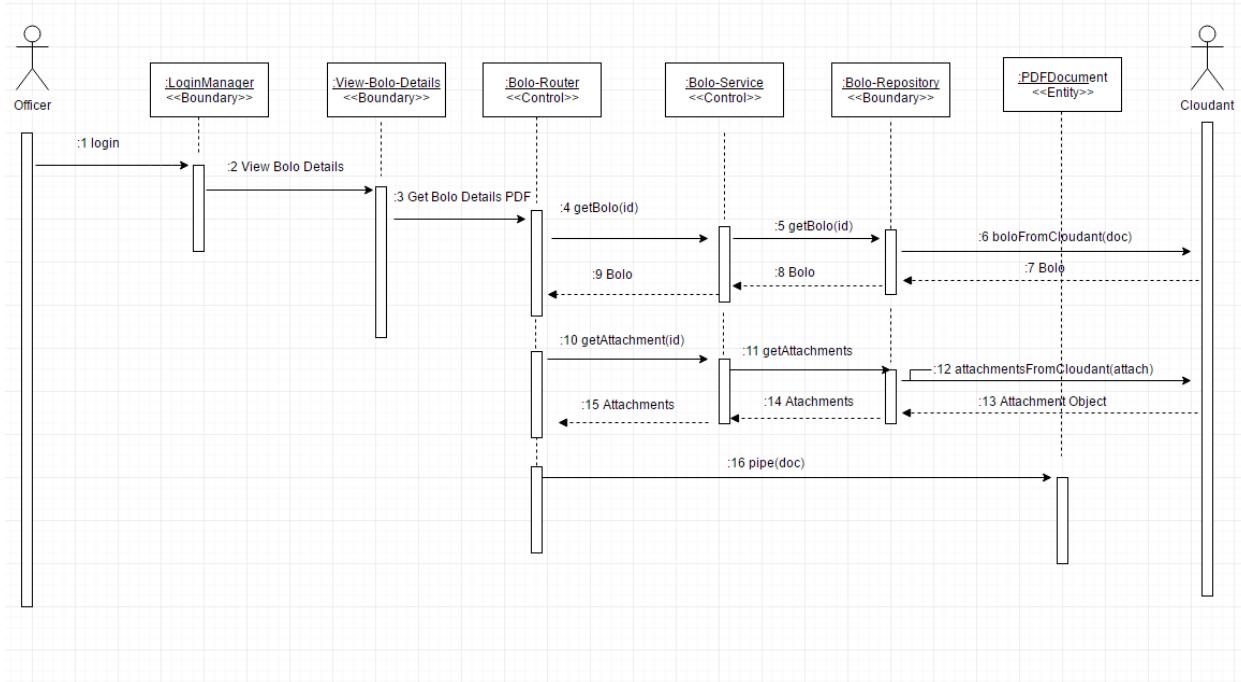
**User Story #882** Implement WildCard search field

- Figure sp1-3



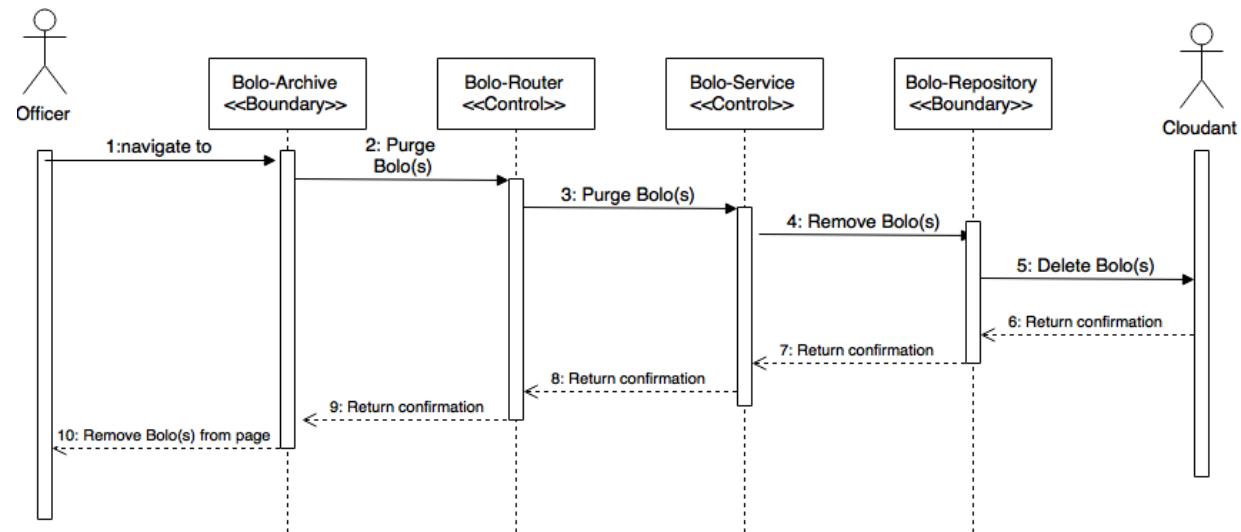
User Story #888 Open PDF documents in new tab

- Figure sp1-4



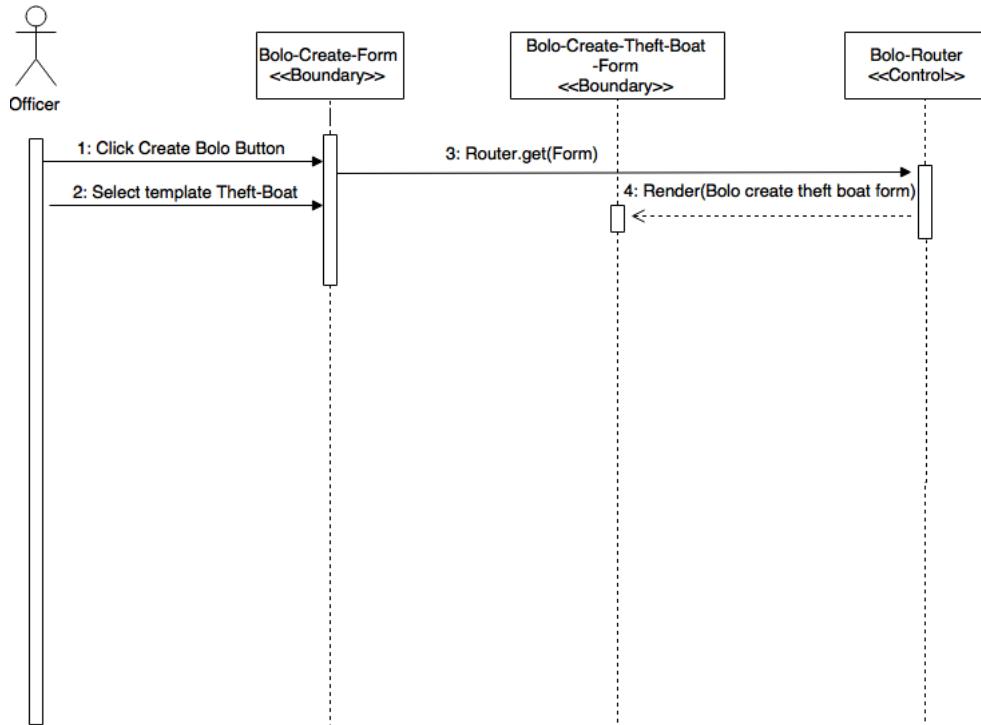
User Story #894 Update all Pages to Bolo v5.0

- Figure sp1-5

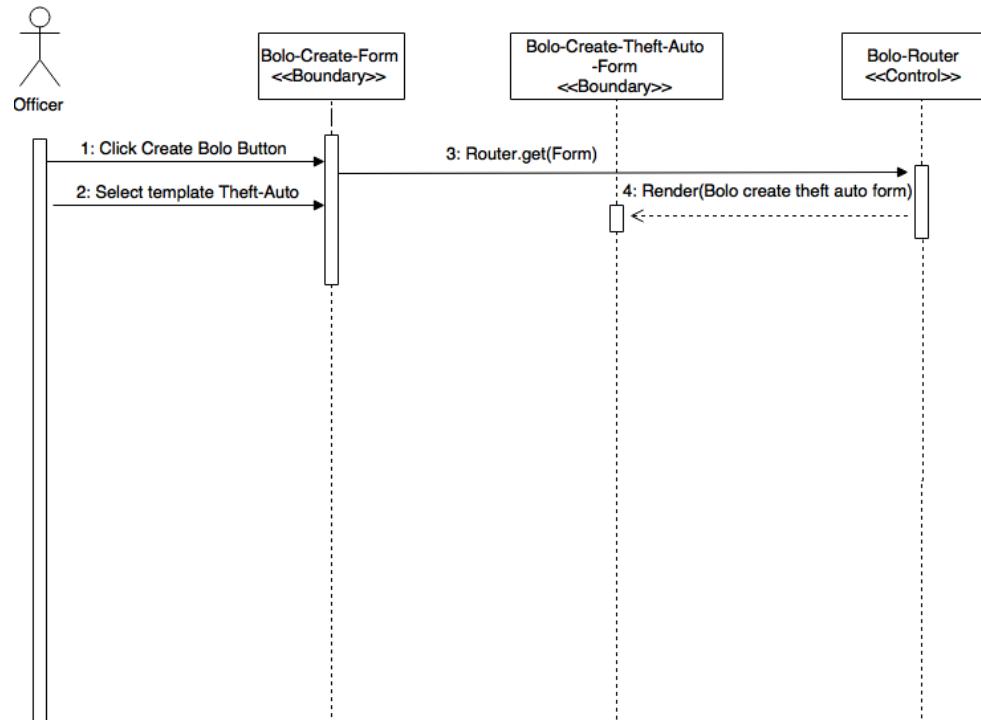


User Story #895 Create template for Theft-Boat BOLO

- Figure sp1-6

**User Story #881** Create template for Theft-Auto BOLO

- Figure sp1-7

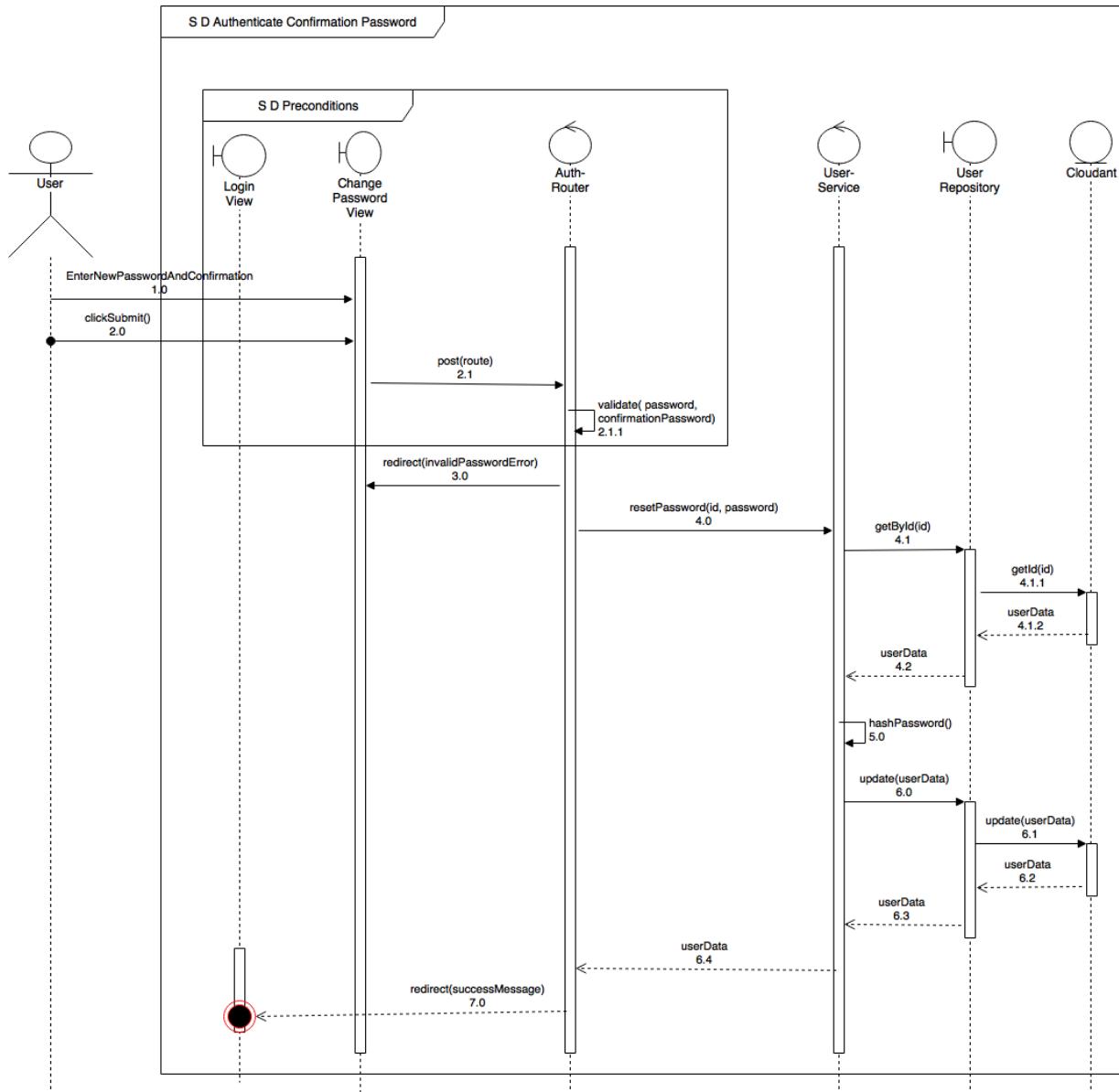


Sprint 2

(06/06/2016 - 06/19/2016)

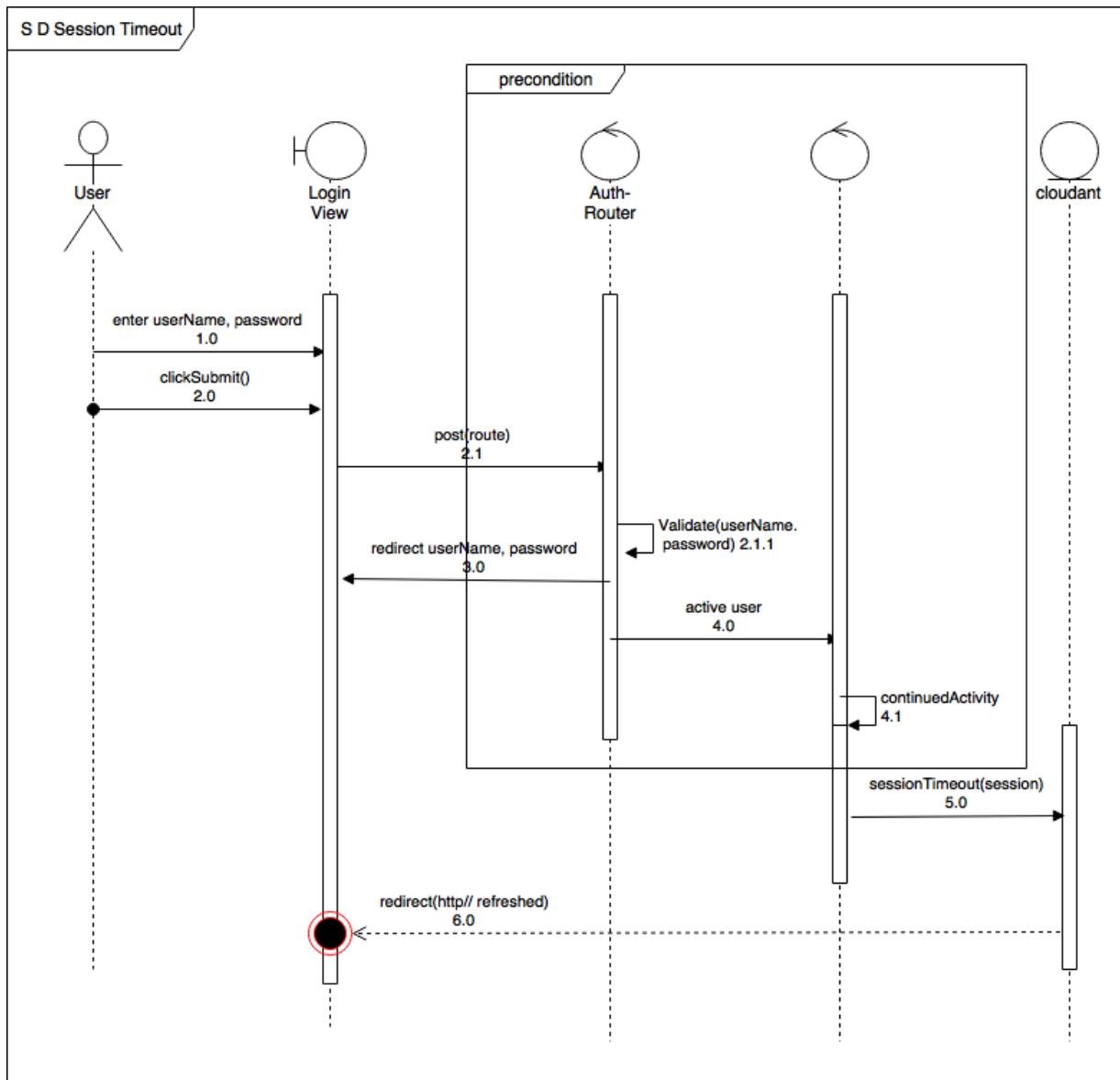
User Story #893 Authenticate password reset confirmation

- Figure sp2-1



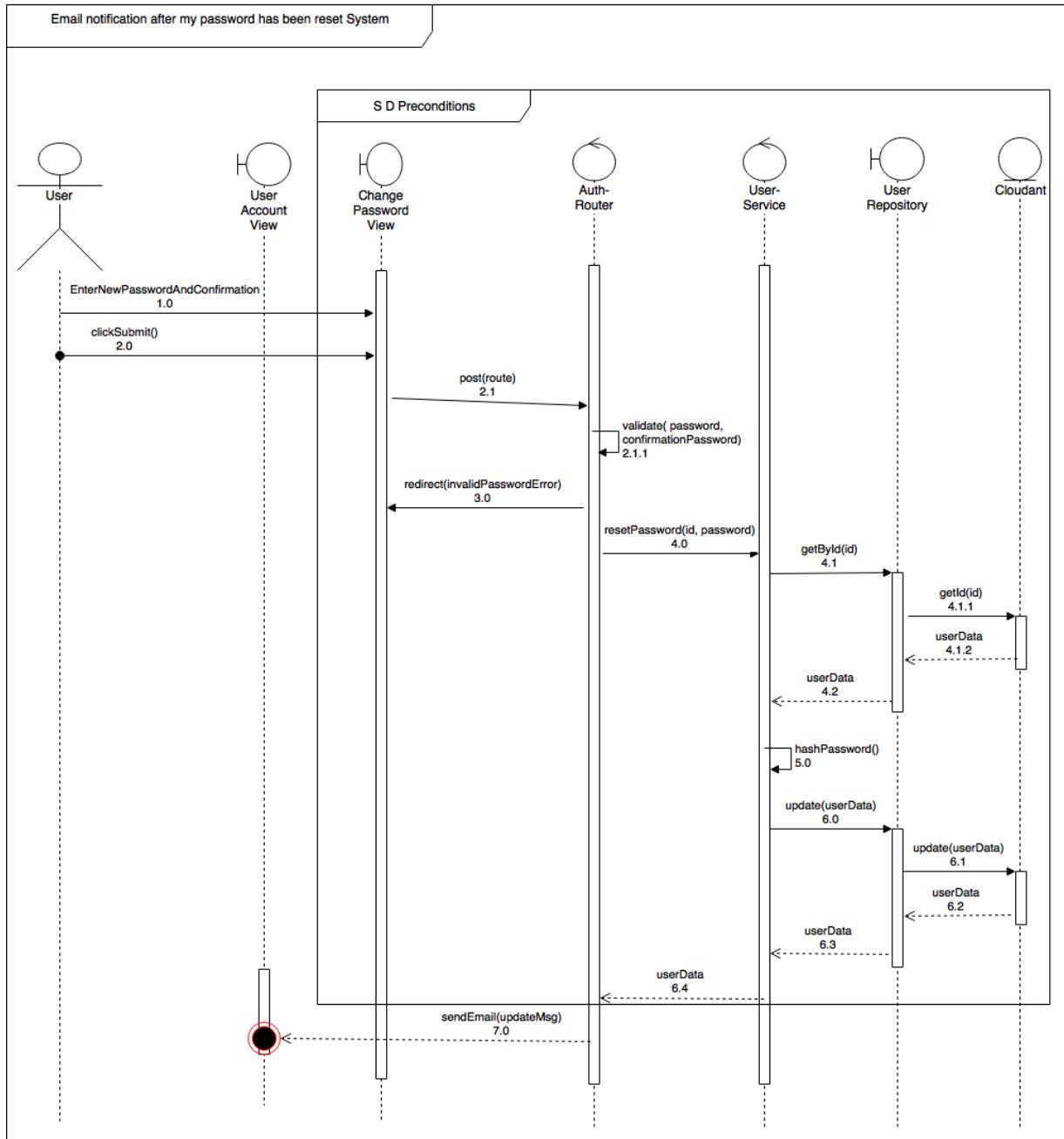
User Story #919 Adjust timeout session

- Figure sp2-2



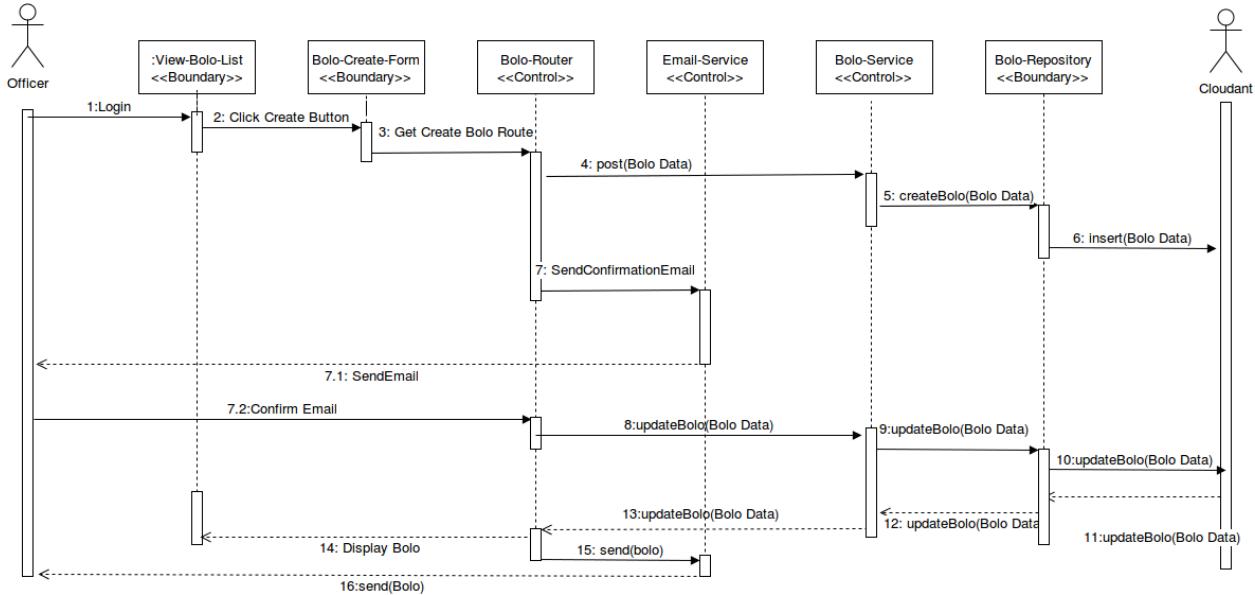
User Story #930 Send email notification after password has been reset

- Figure sp2-3

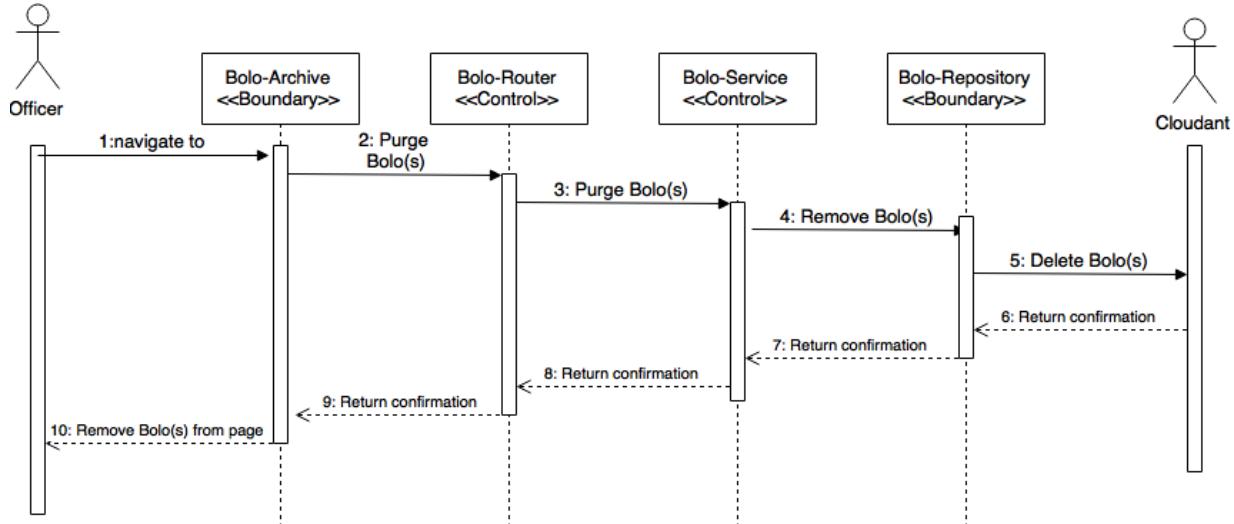


User Story #879 Confirm BOLO via email after creation

- Figure sp2-4

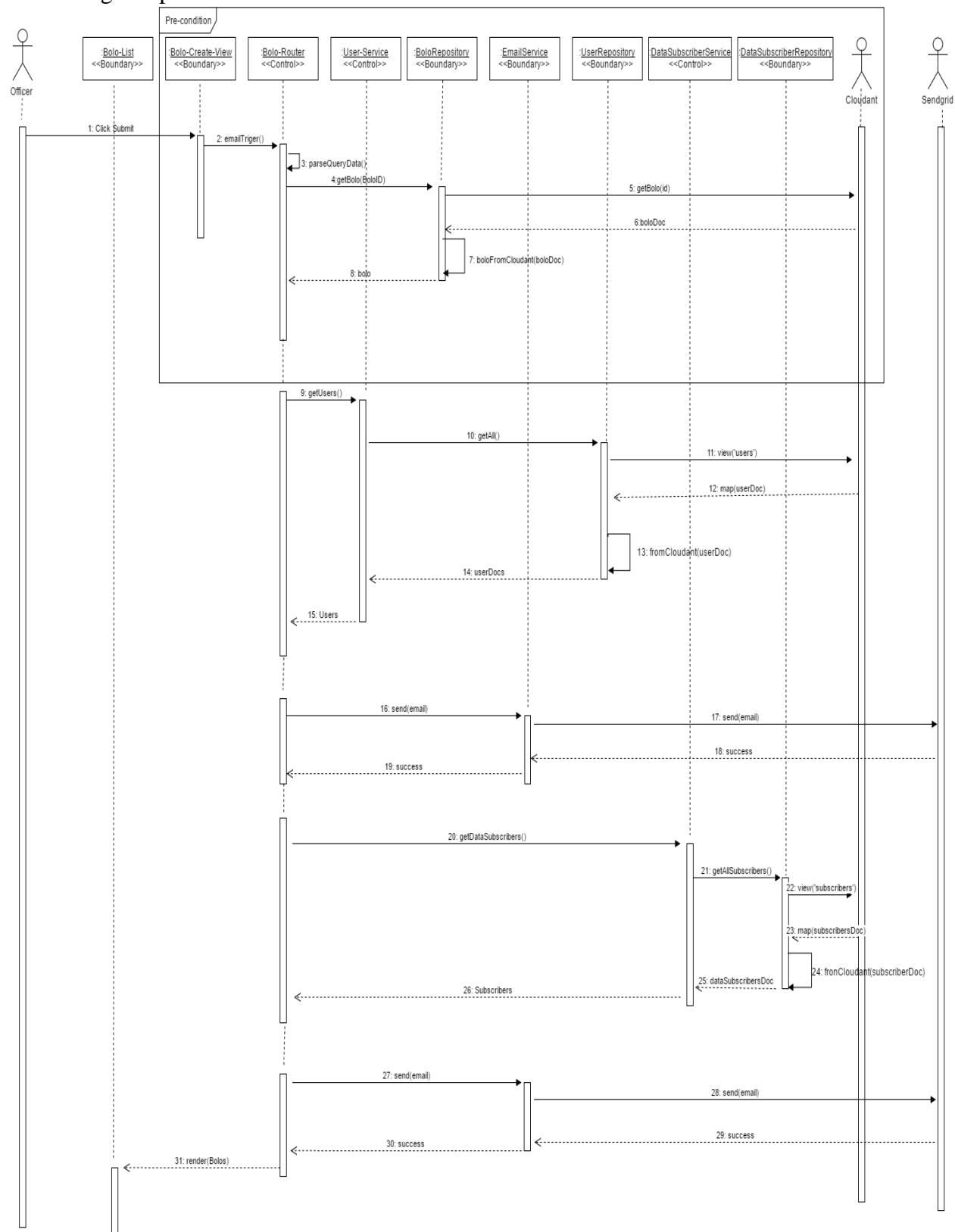
**User Story #891** Prevent password from displaying in url

- Figure sp2-5



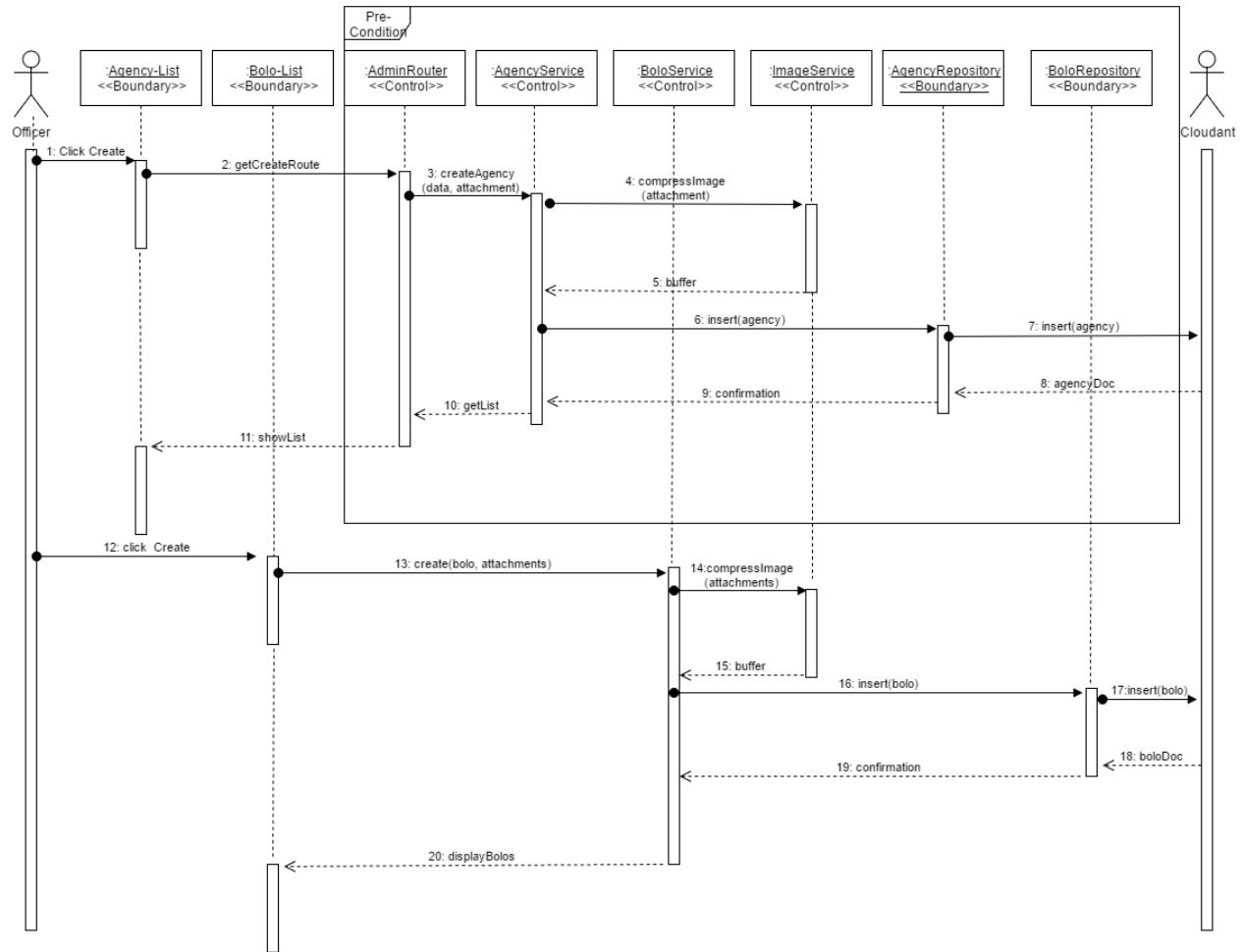
User Story #880 Send feed of BOLOs as JSON documents

- Figure sp2-6

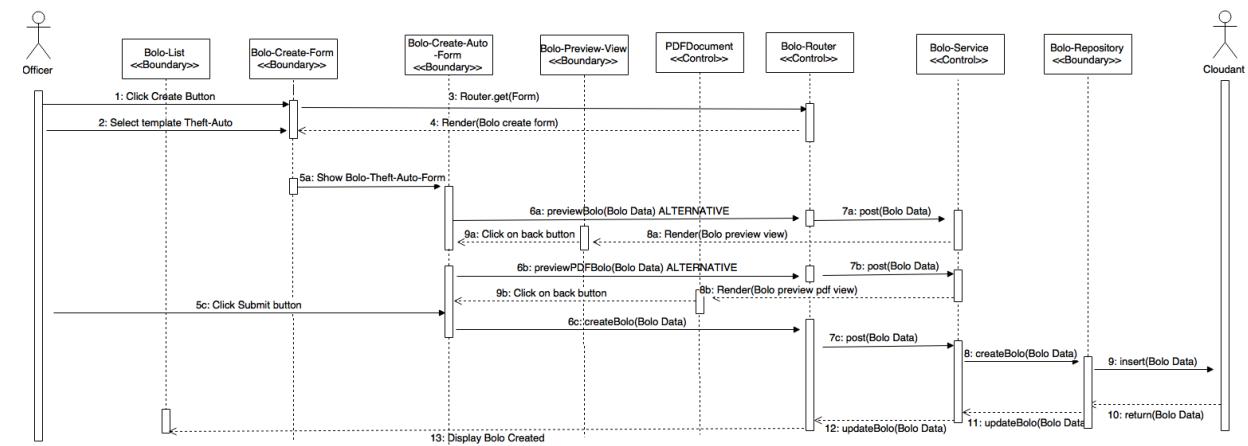


User Story #920 Compress images upon upload

- Figure sp2-7

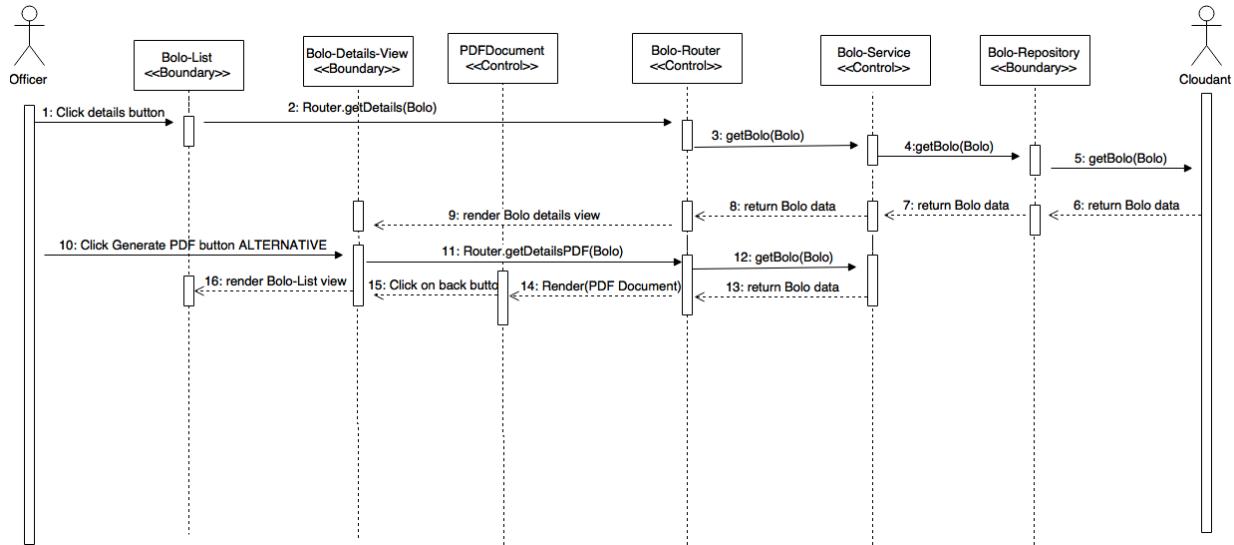
**User Story #896** Create specific Bolo for Theft-Auto

- Figure sp2-8

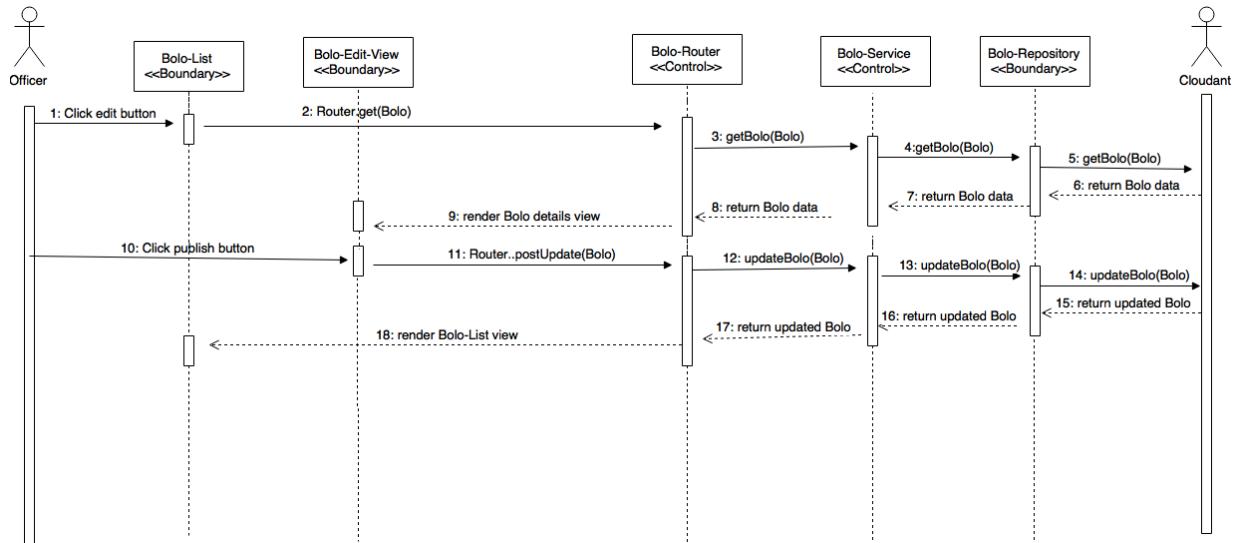


User Story #932 View Bolo Details for Theft-Auto

- Figure sp2-9

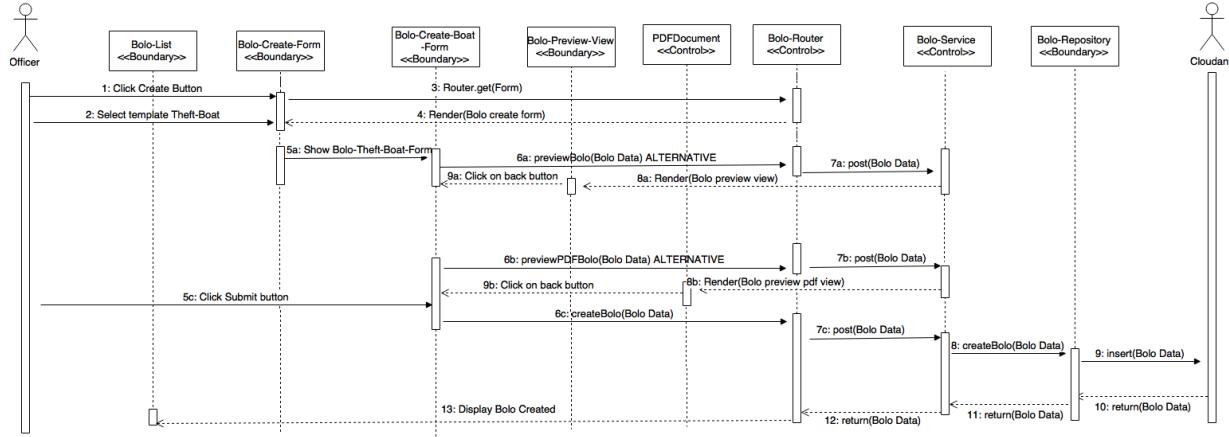
**User Story #933** Edit bolo for Theft-Auto

- Figure sp2-10

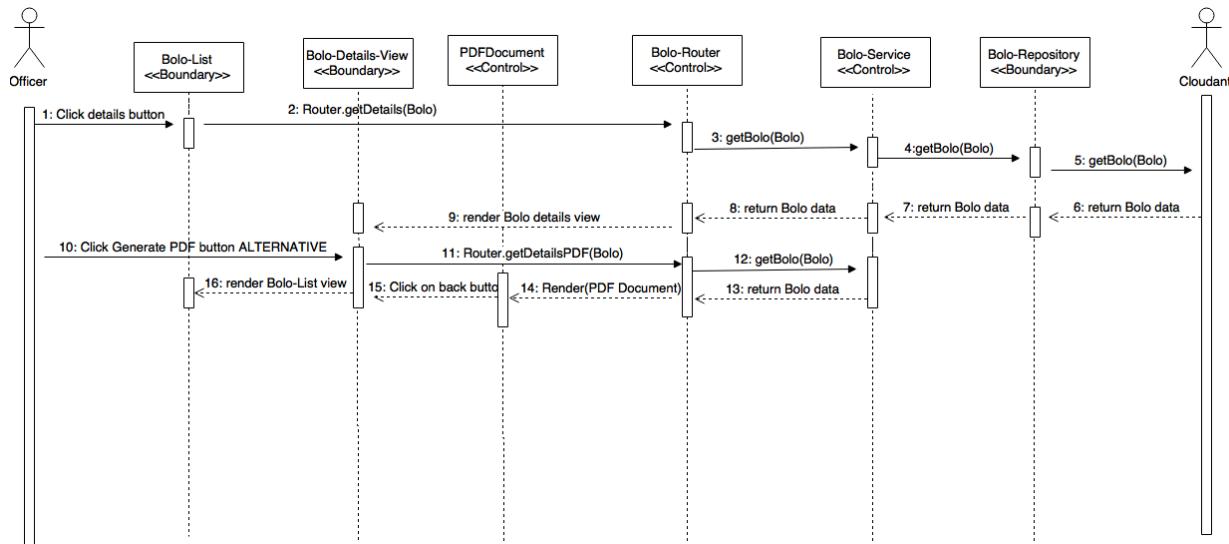


User Story #936 Create specific Bolo for Theft-Boat

- Figure sp2-11

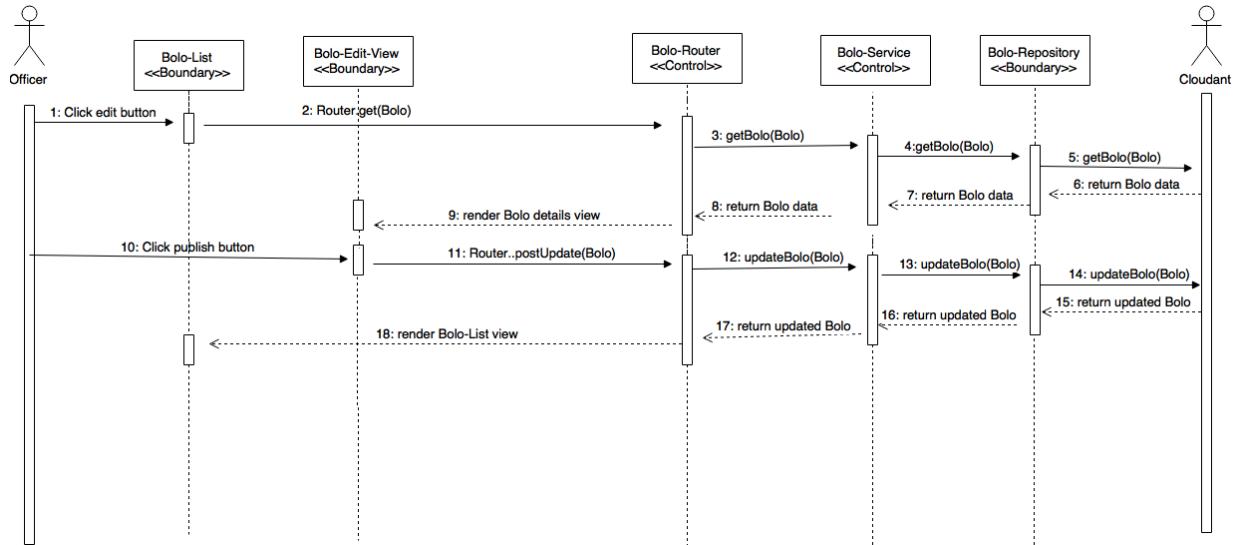
**User Story #937** View Bolo Details for Theft-Boat

- Figure sp2-12



User Story #938 Edit Bolo for Theft-Boat

- Figure sp2-13

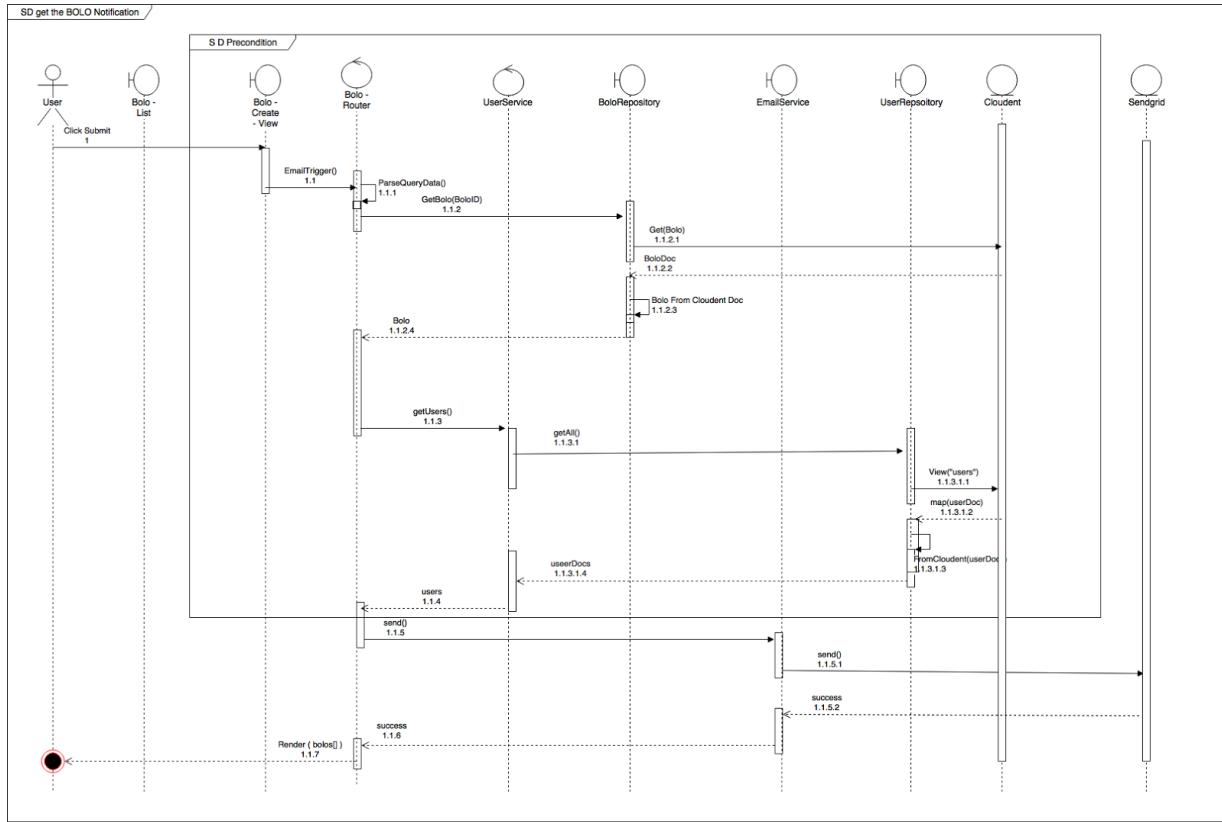


Sprint 3

(06/20/2016 – 07/03/2016)

User Story #934 Remove empty fields from PDF bolo for display

- Figure sp3-1

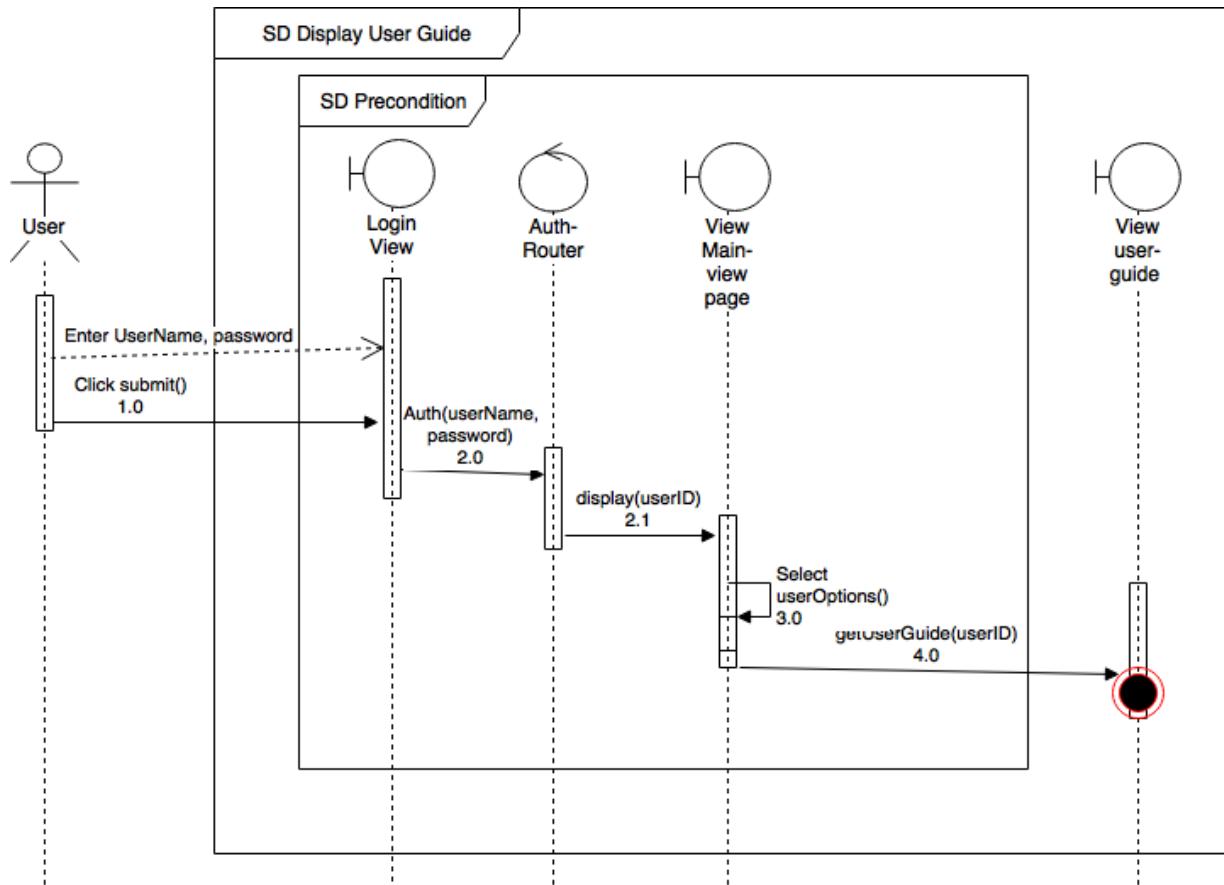


User Story #935 Add drop down menu for links such as settings, user guide, logout and others to be added at a later time

- No diagrams

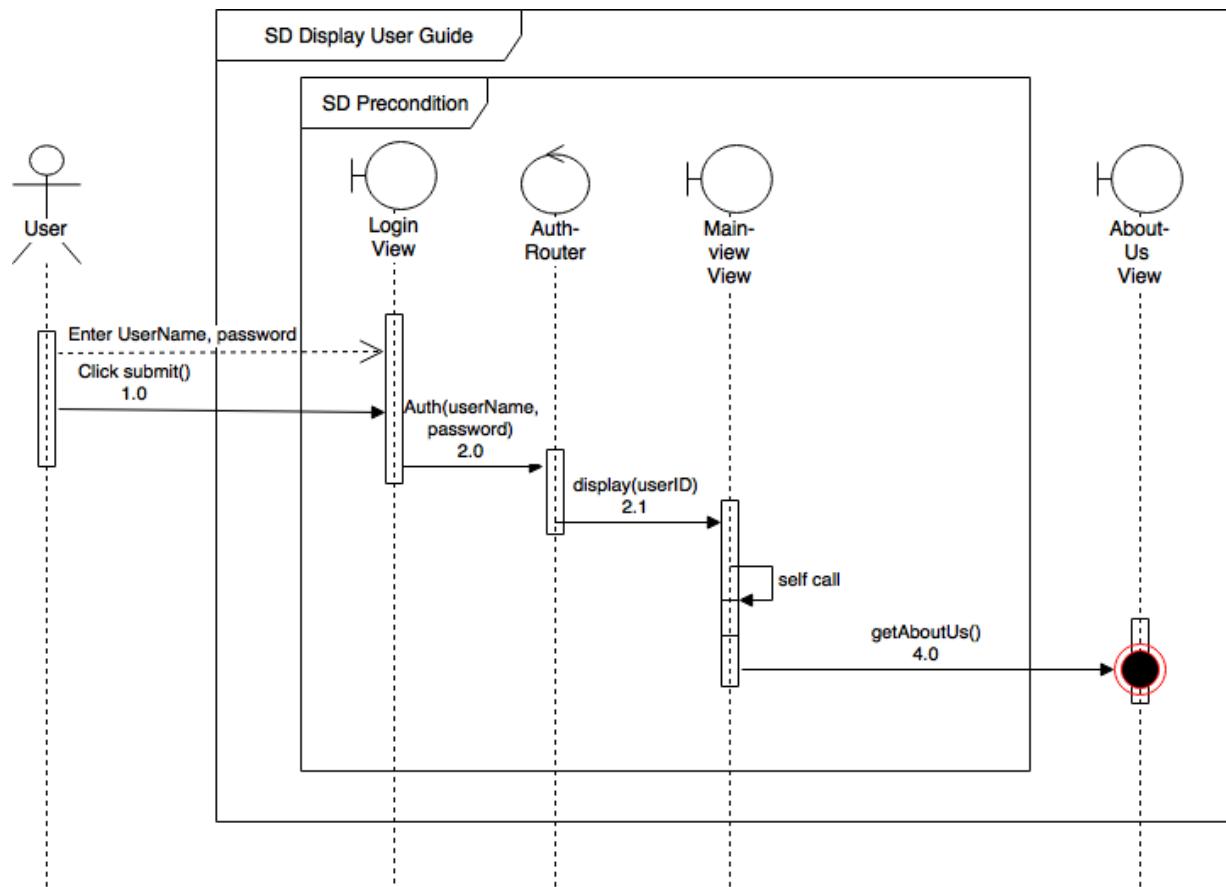
User Story #1006 Add a user guide page for each tier

- Figure sp3-2



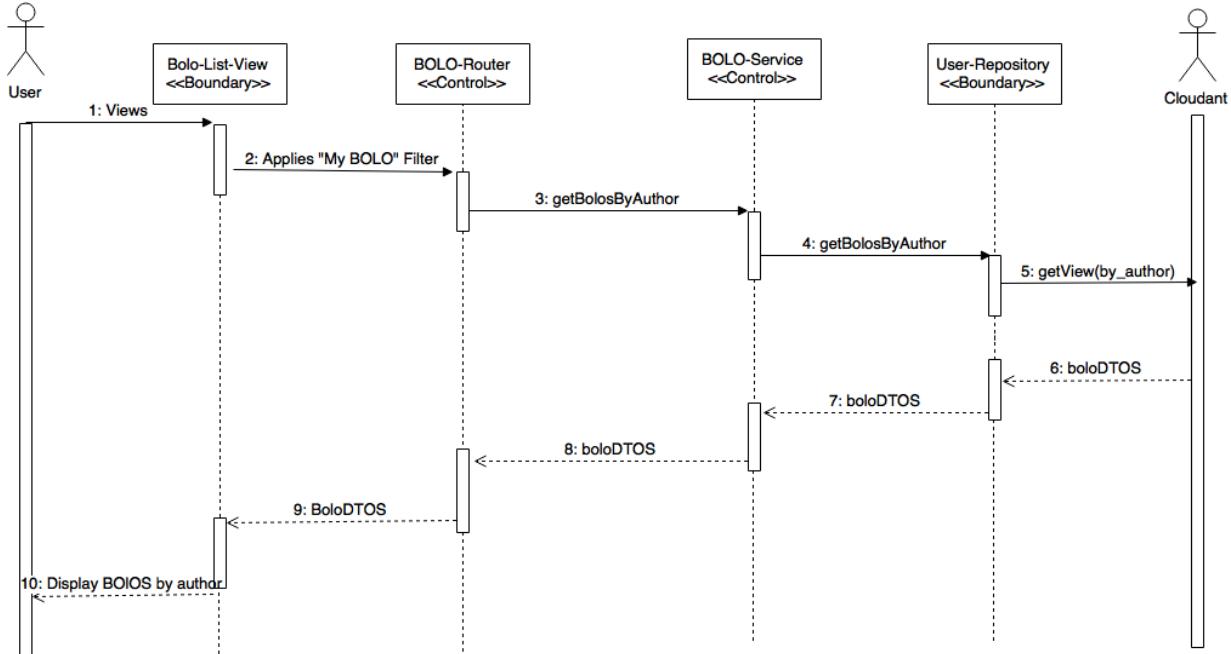
User Story #1046 Add an about us page

- Figure sp3-3



User Story #1011 Filter BOLOS by author and reformat the dropdown

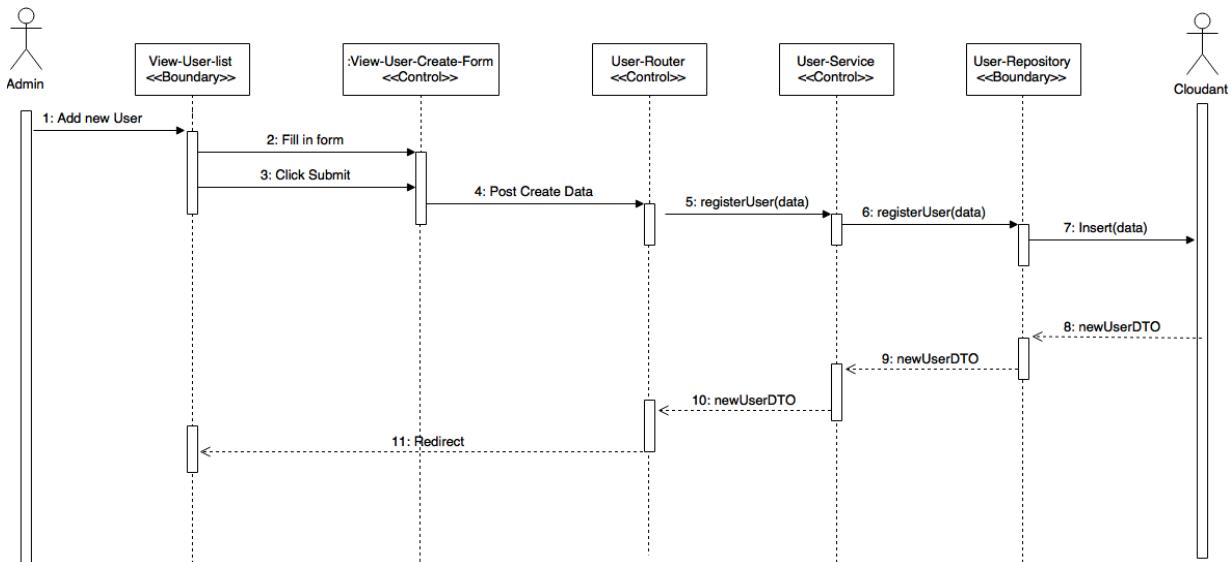
- Figure sp3-4

**User Story #1009** Automate database creation via scripts

- No diagrams

User Story #1008 Prevent user email domain from being something other than their agency's domain

- Figure sp3-5

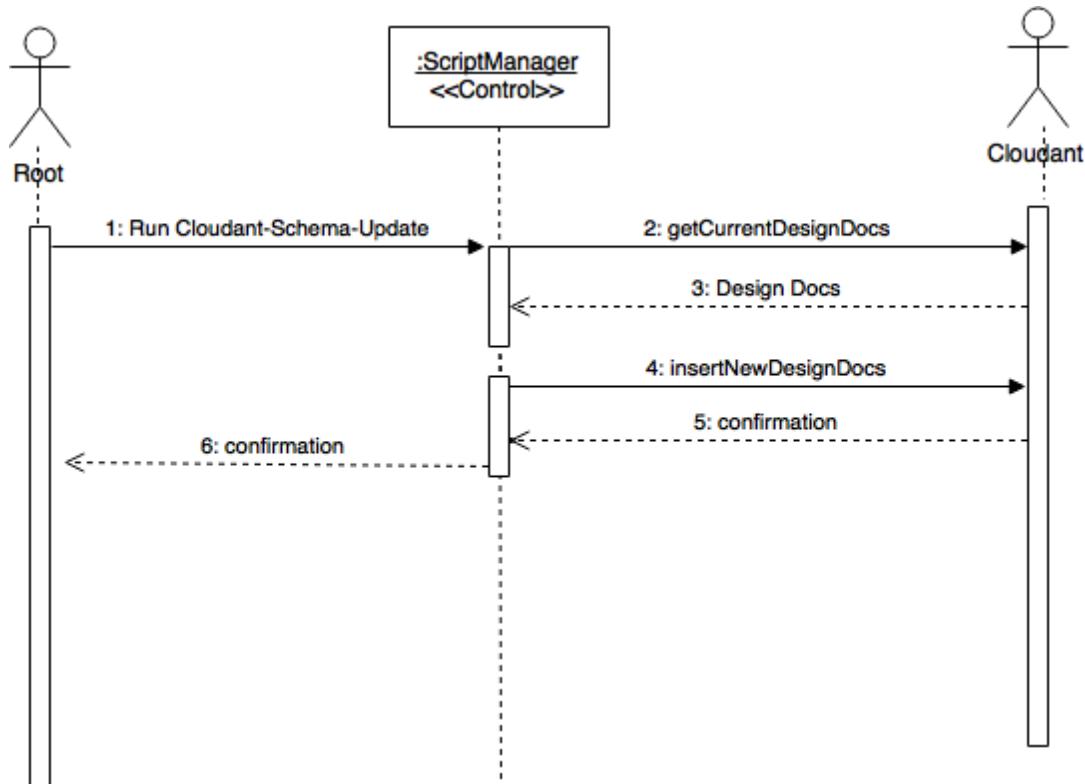


User Story #889 Change bolo email to no-reply

- No diagrams

User Story #931 Create script to reset DB Schema

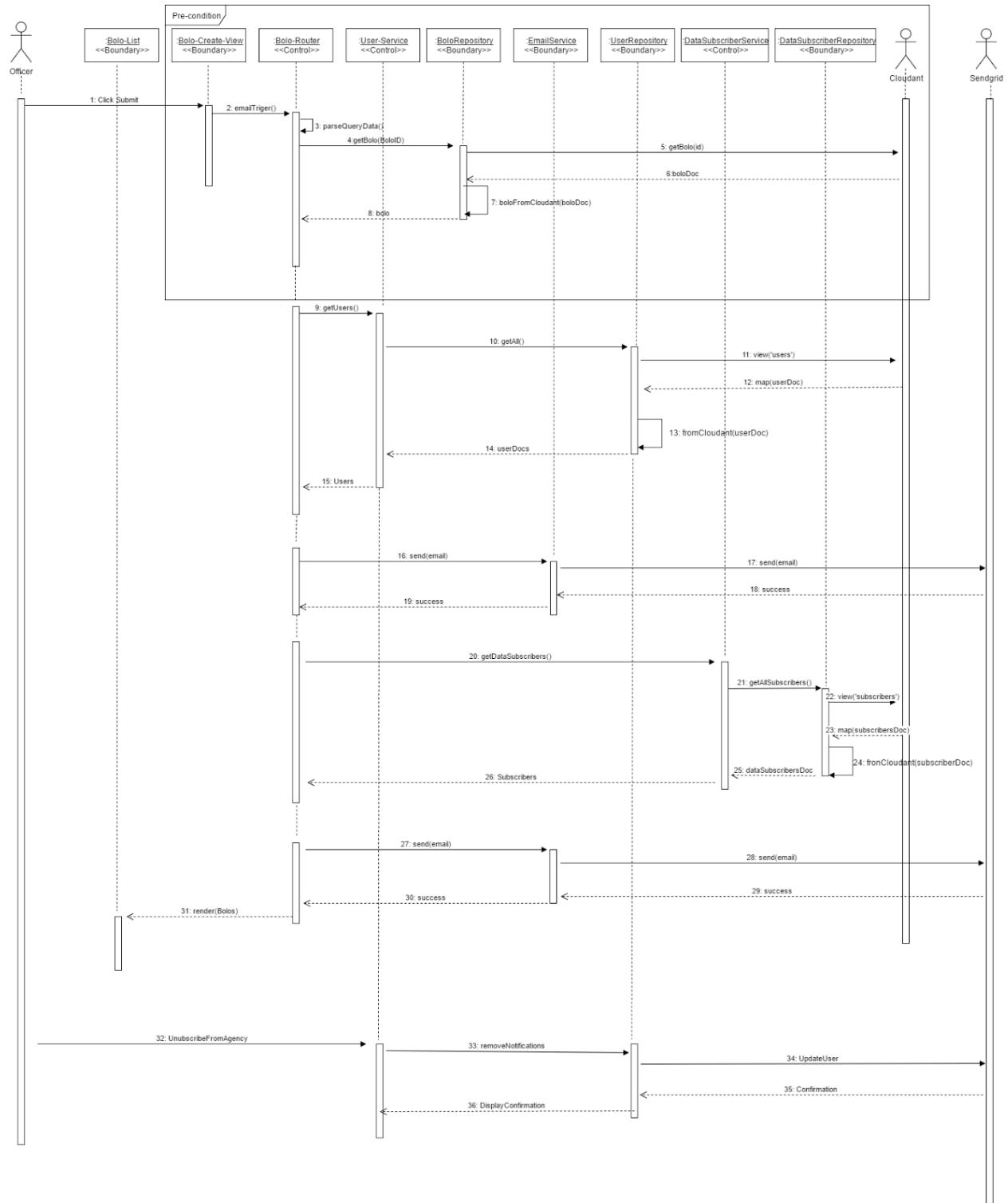
- Figure sp3-6

**User Story #985** Enhance ImageService

- No diagrams

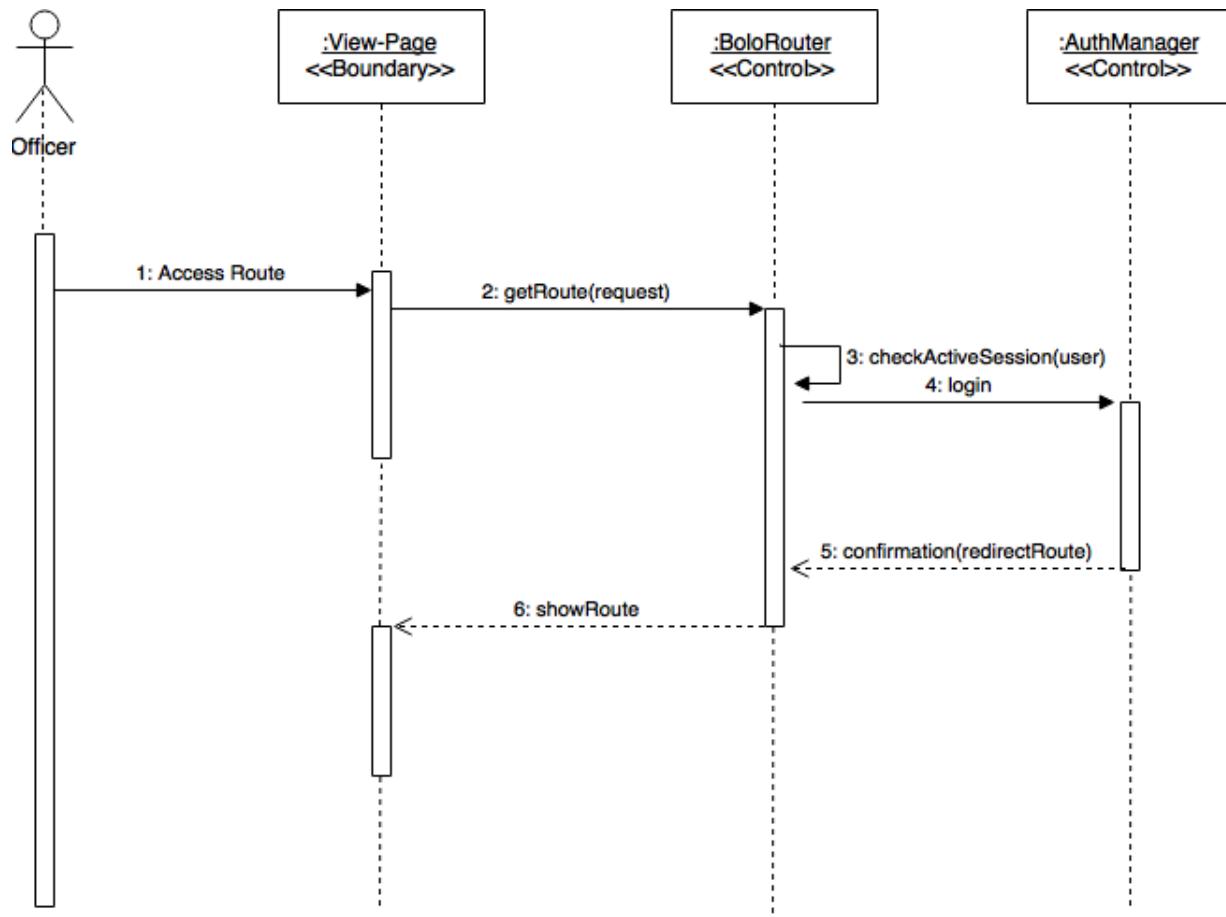
User Story #986 Unsubscribe from BOLO emails

- Figure sp3-7



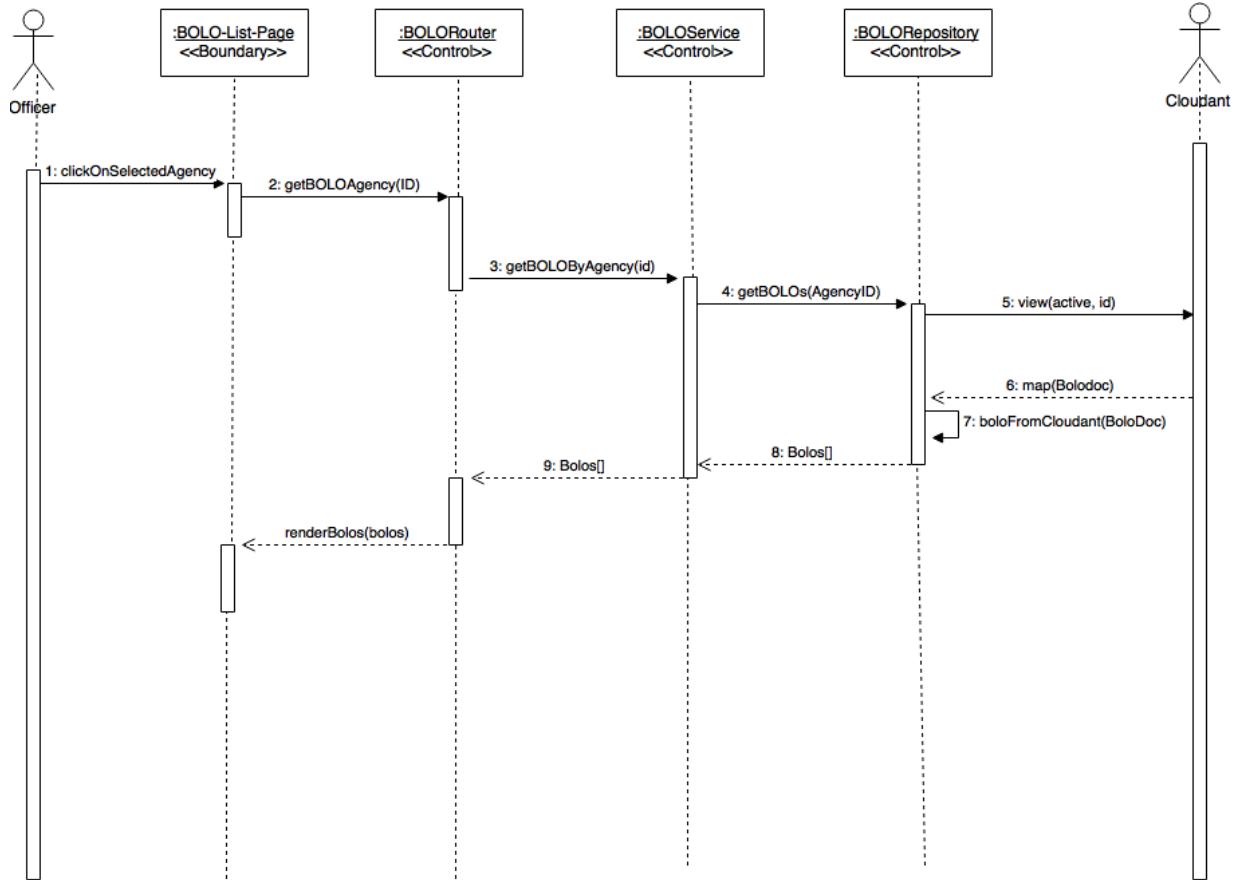
User Story #1001 Implement routes with authentication

- Figure sp3-8



User Story #1007 Redesign Filter by Agencies in Home page

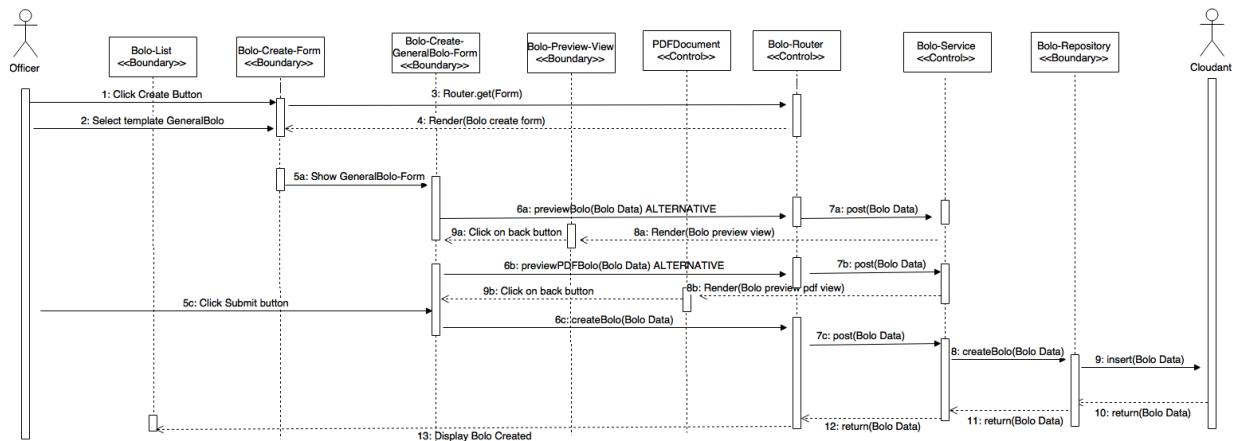
- Figure sp3-9

**User Story #1033** Fix several bugs

- No diagrams

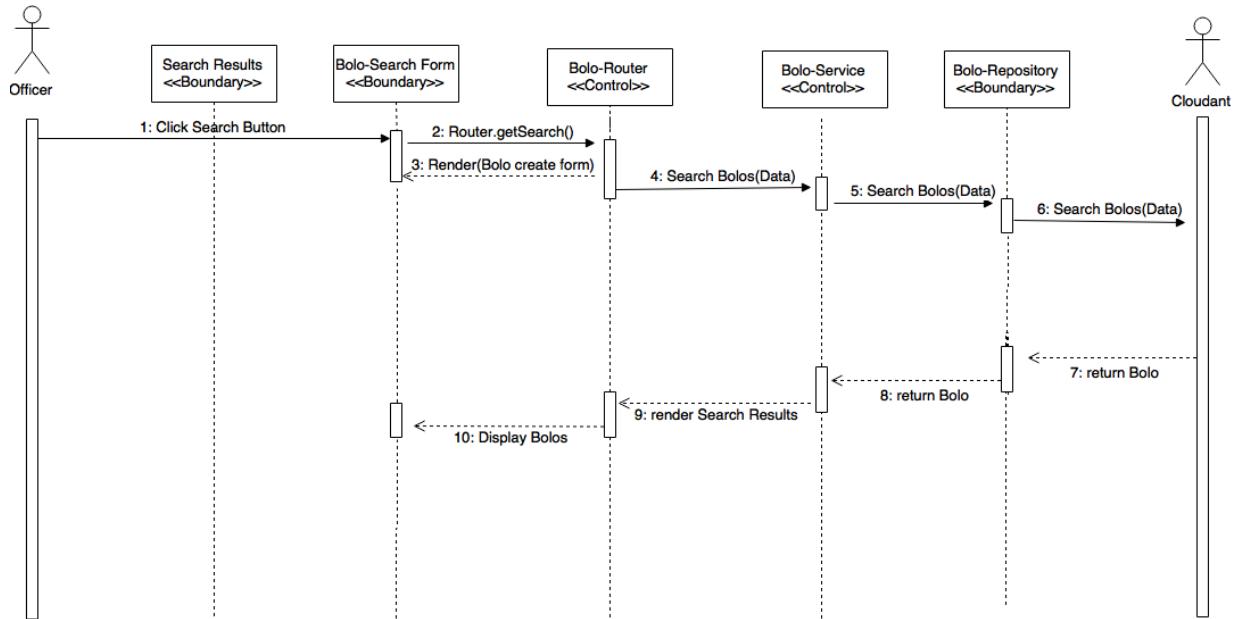
User Story #990 Redesign and add validations for General Bolo Template

- Figure sp3-10

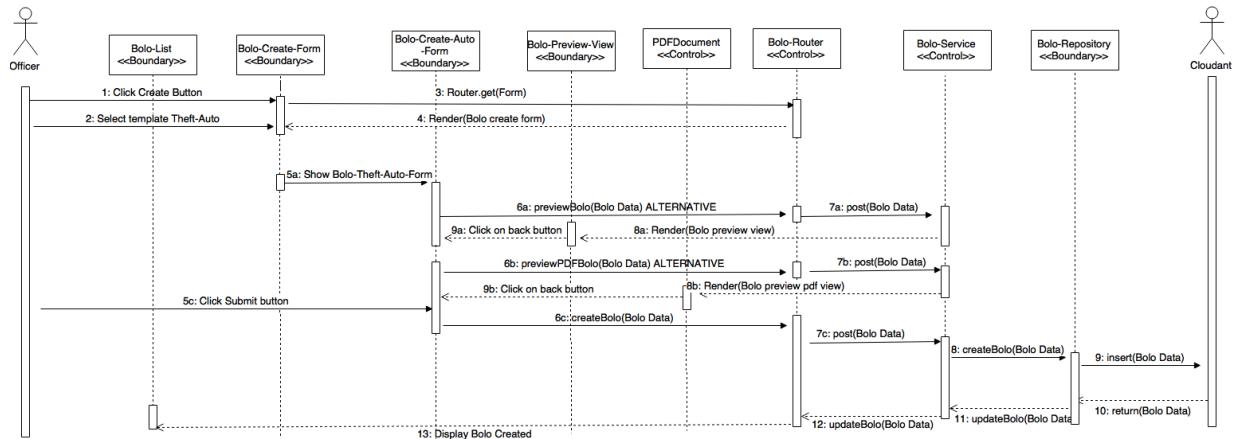


User Story #981 Implement Search for New Bolo Templates

- Figure sp3-11

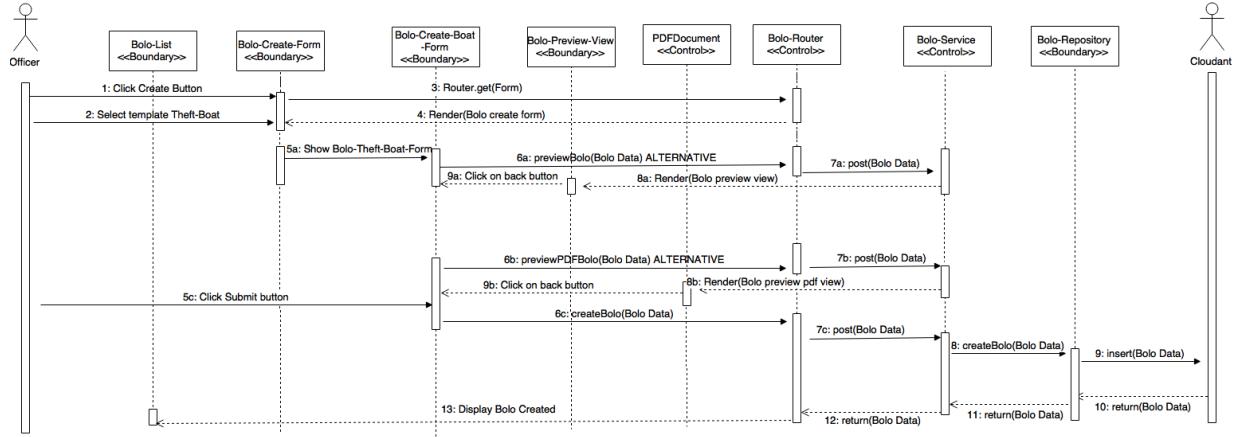
**User Story #991** Redesign and add validations for Theft Auto Template

- Figure sp3-12



User Story #992 Redesign and add validations for Theft Boat Template

- Figure sp3-13

**User Story #1030** Delete the Ongoing Status from Bolo

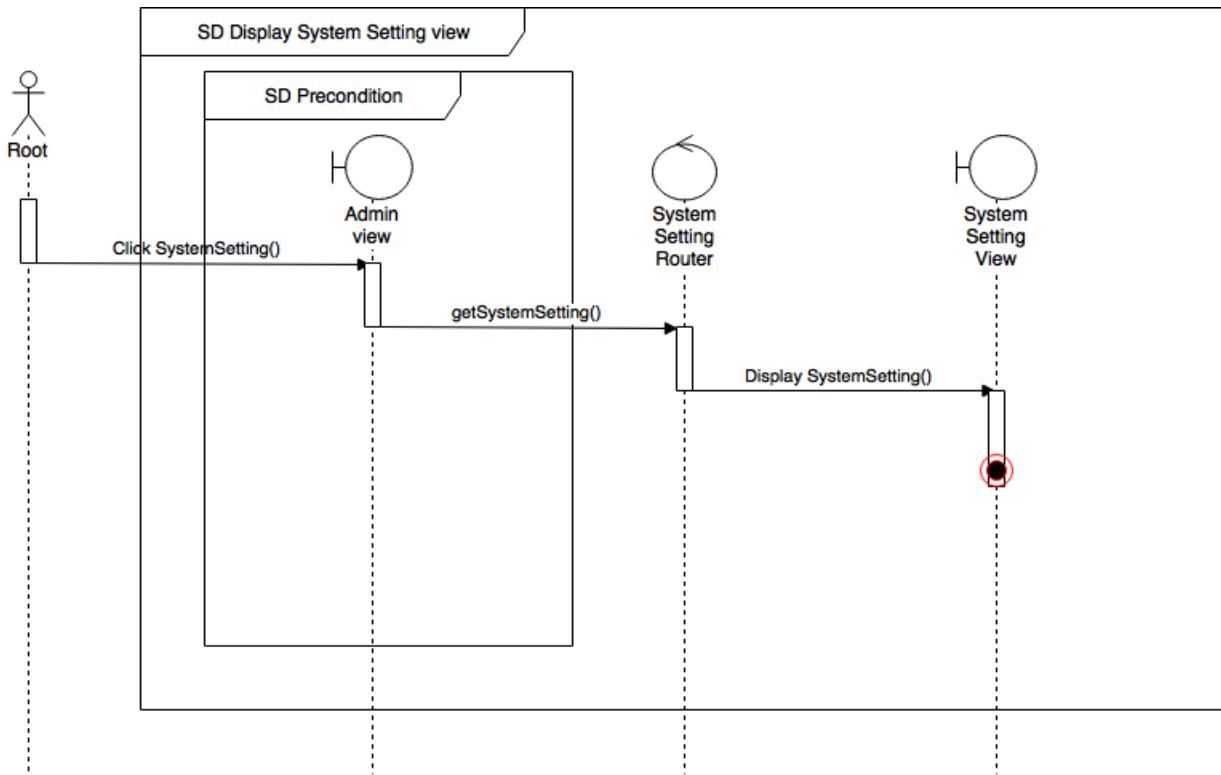
- No diagrams

Sprint 4

(07/04/2016 – 07/17/2016)

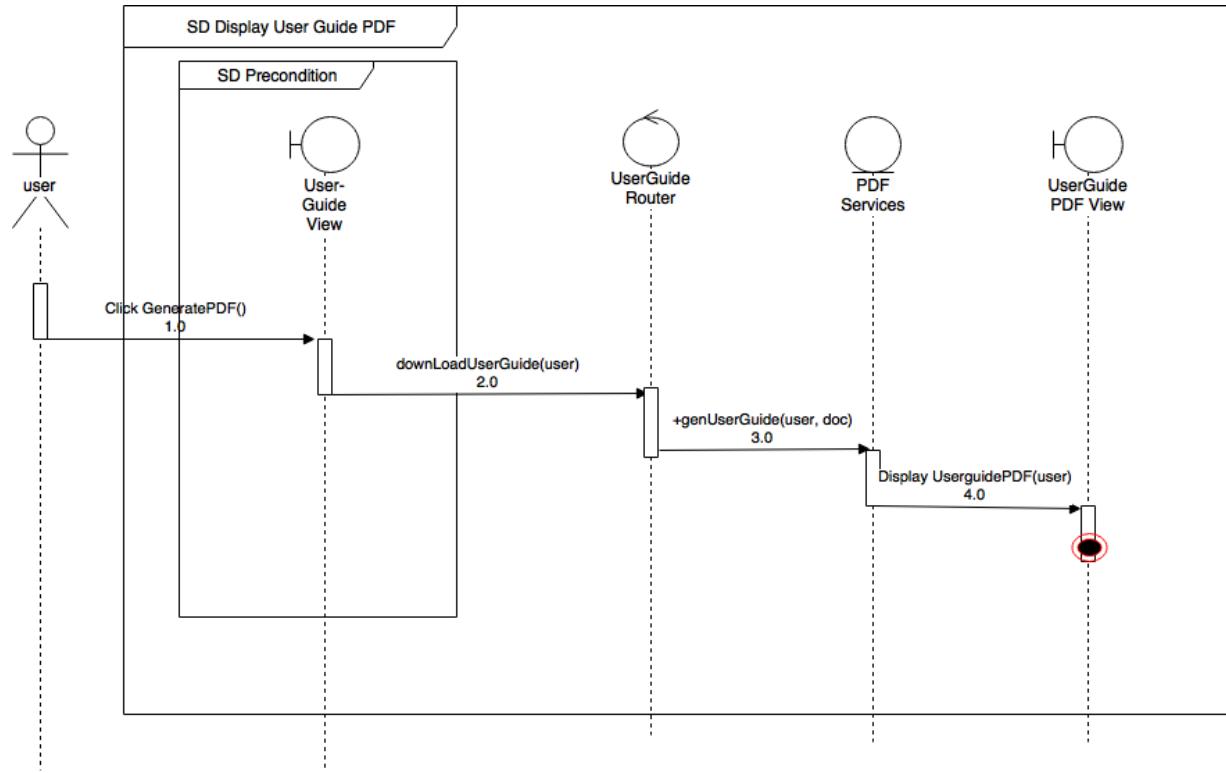
User Story #1010 Create a front end page for root to customize system settings

- Figure sp4-1



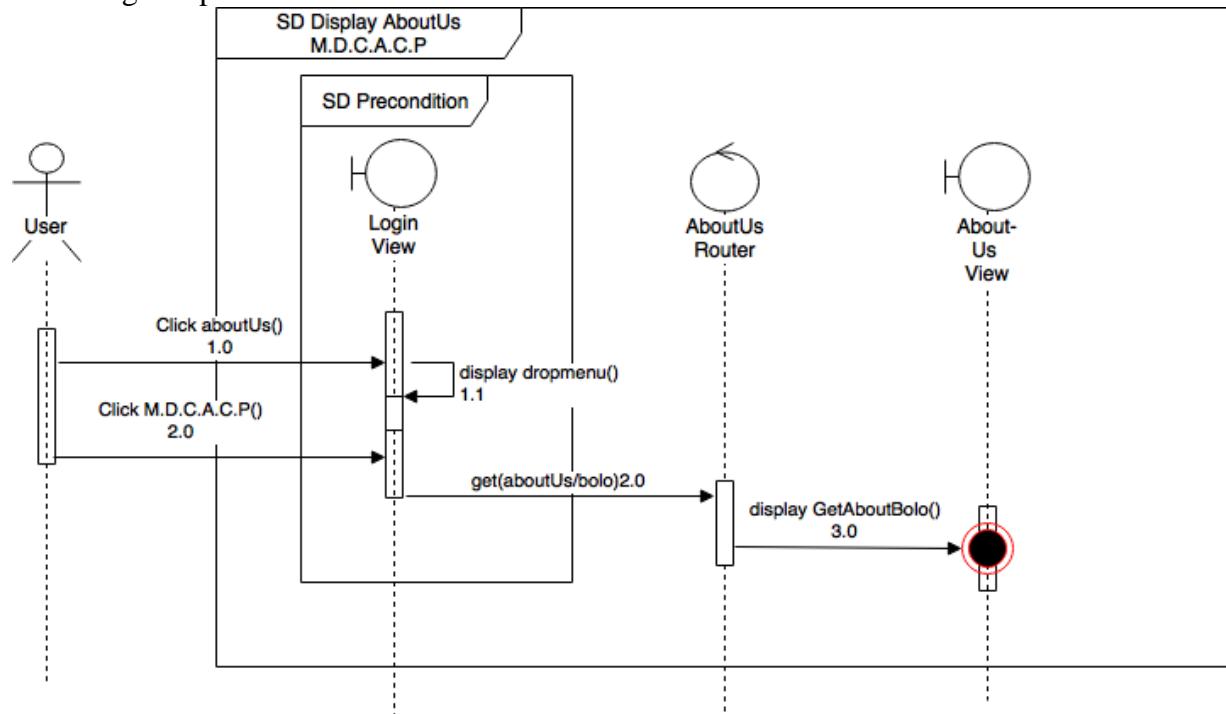
User Story #1096 Implement a link to download a PDF of the user's guide based on user's tier

- Figure sp4-2



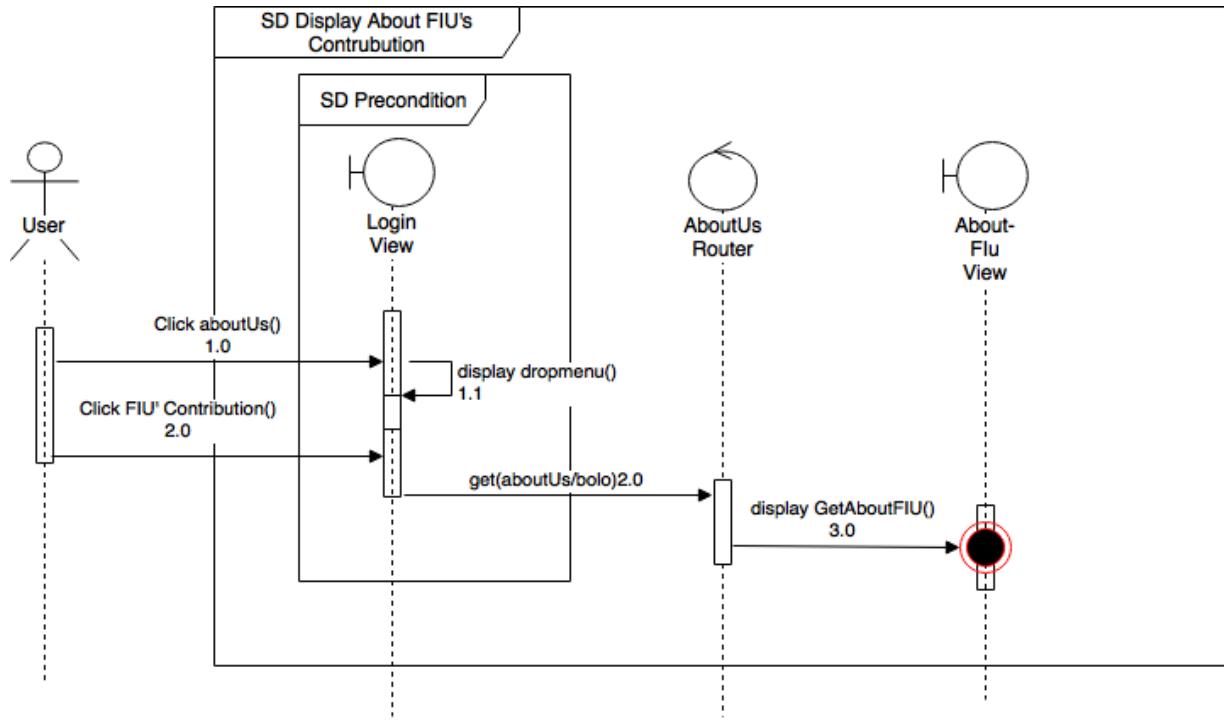
User Story #1097 Implement an About Miami Dade County Association of Chief of Police (MDCACP) page

- Figure sp4-3



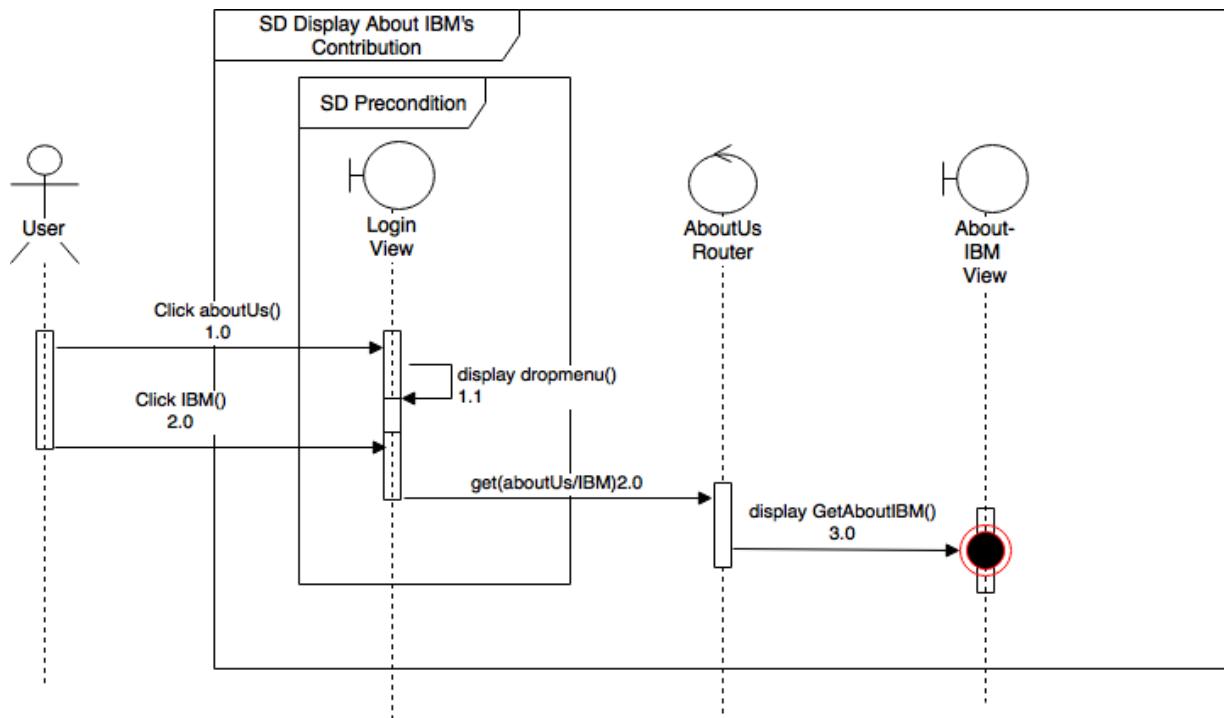
User Story #1098 Create an about us page for Florida International University's (FIU) contribution

- Figure sp4-4



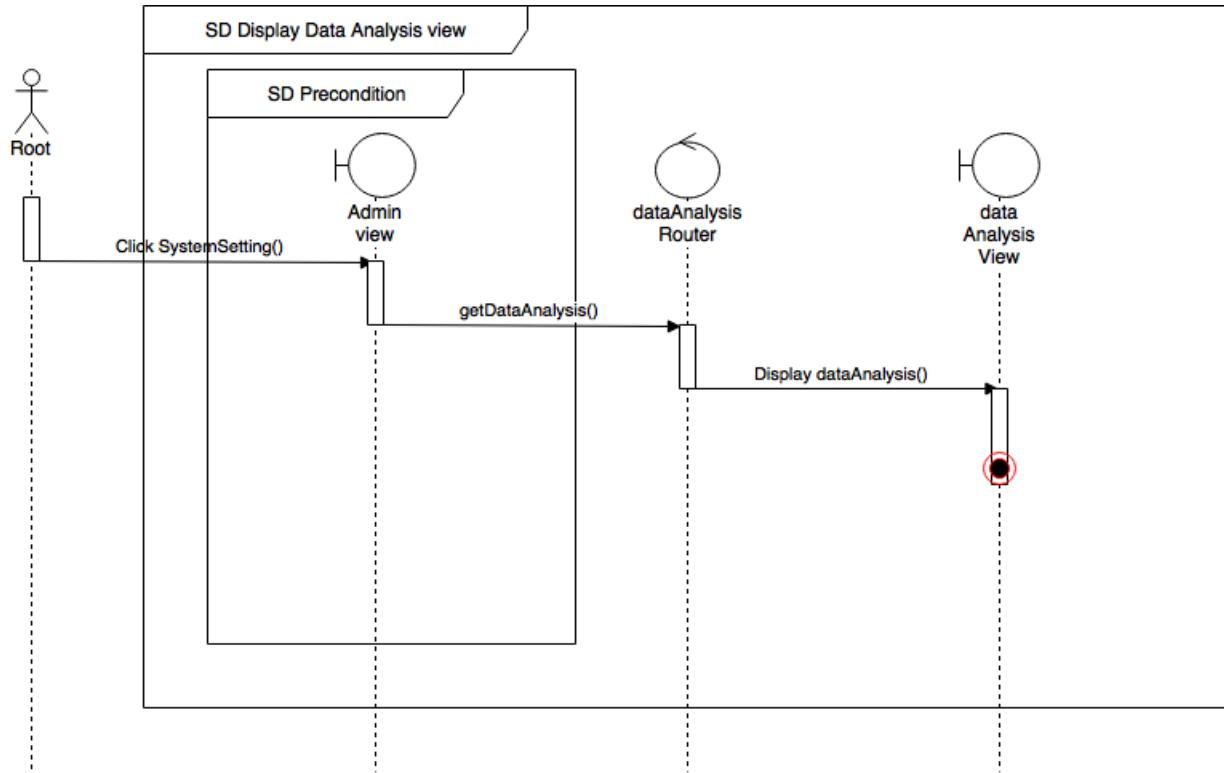
User Story #1099 Create an about us page for IBM's contribution

- Figure sp4-5

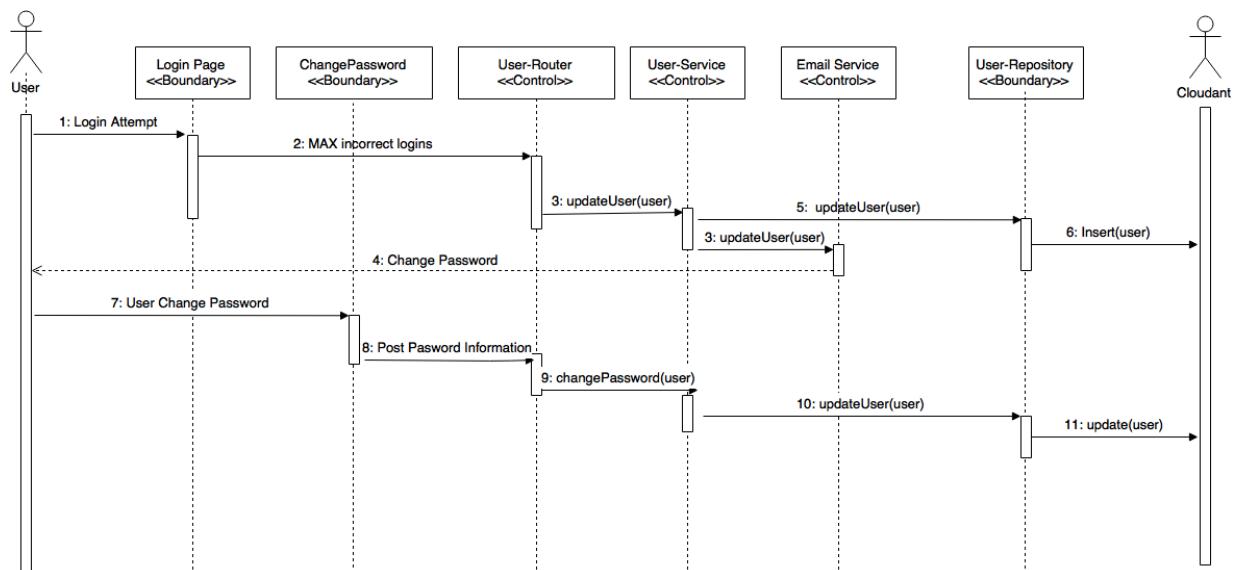


User Story #1100 Create a page where root can retrieve data for analysis

- Figure sp4-6

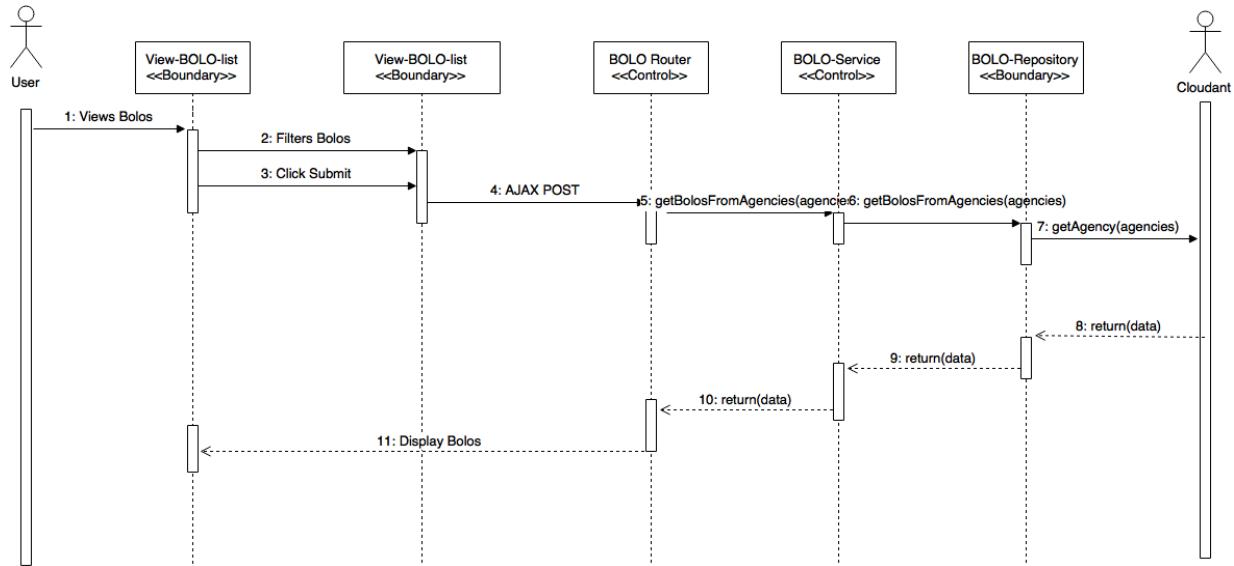
**User Story #1014** Lock user account after 10 incorrect login attempts

- Figure sp4-7



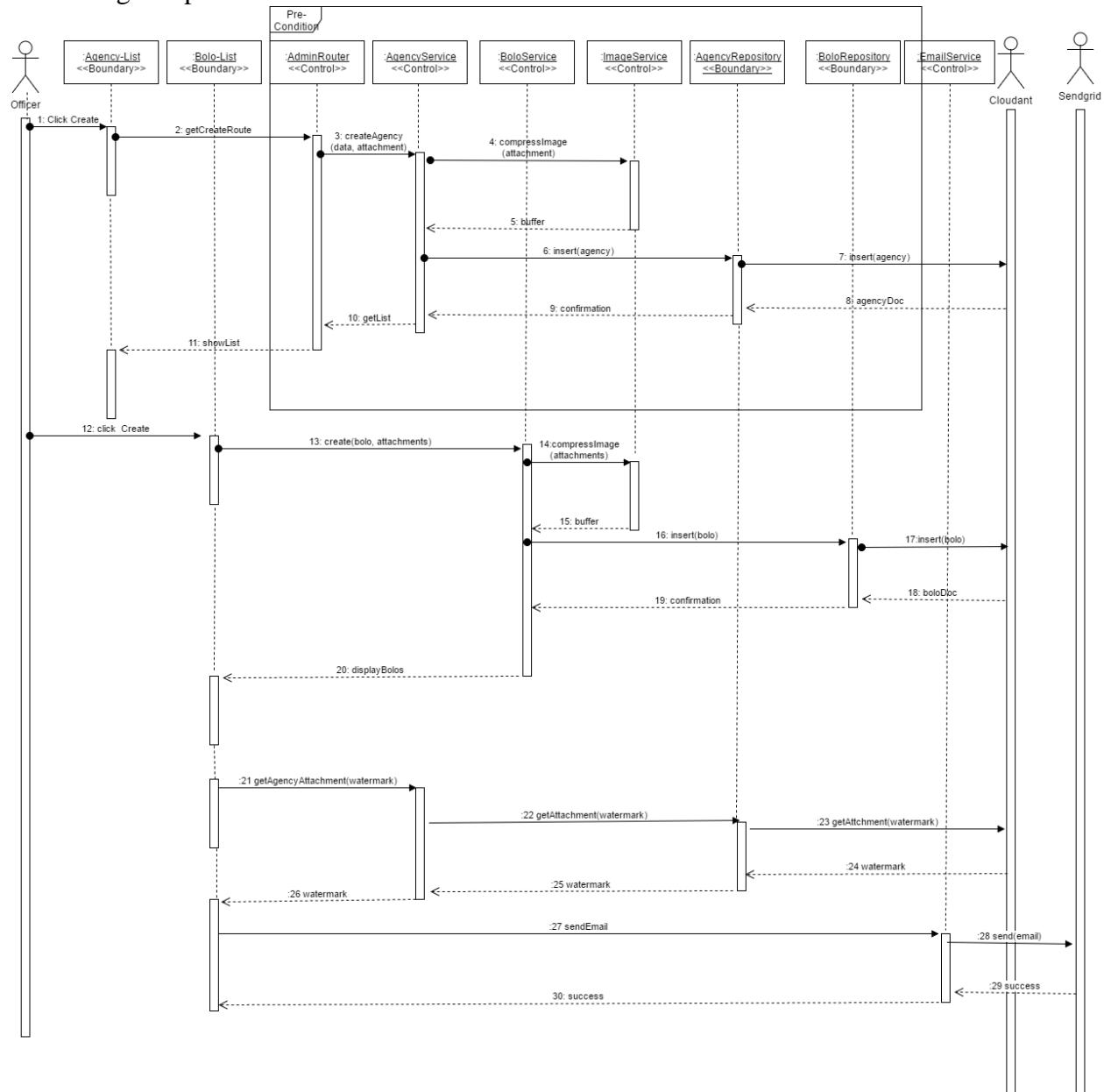
User Story #1038 Filter by multiple agencies in bolo list page

- Figure sp4-8



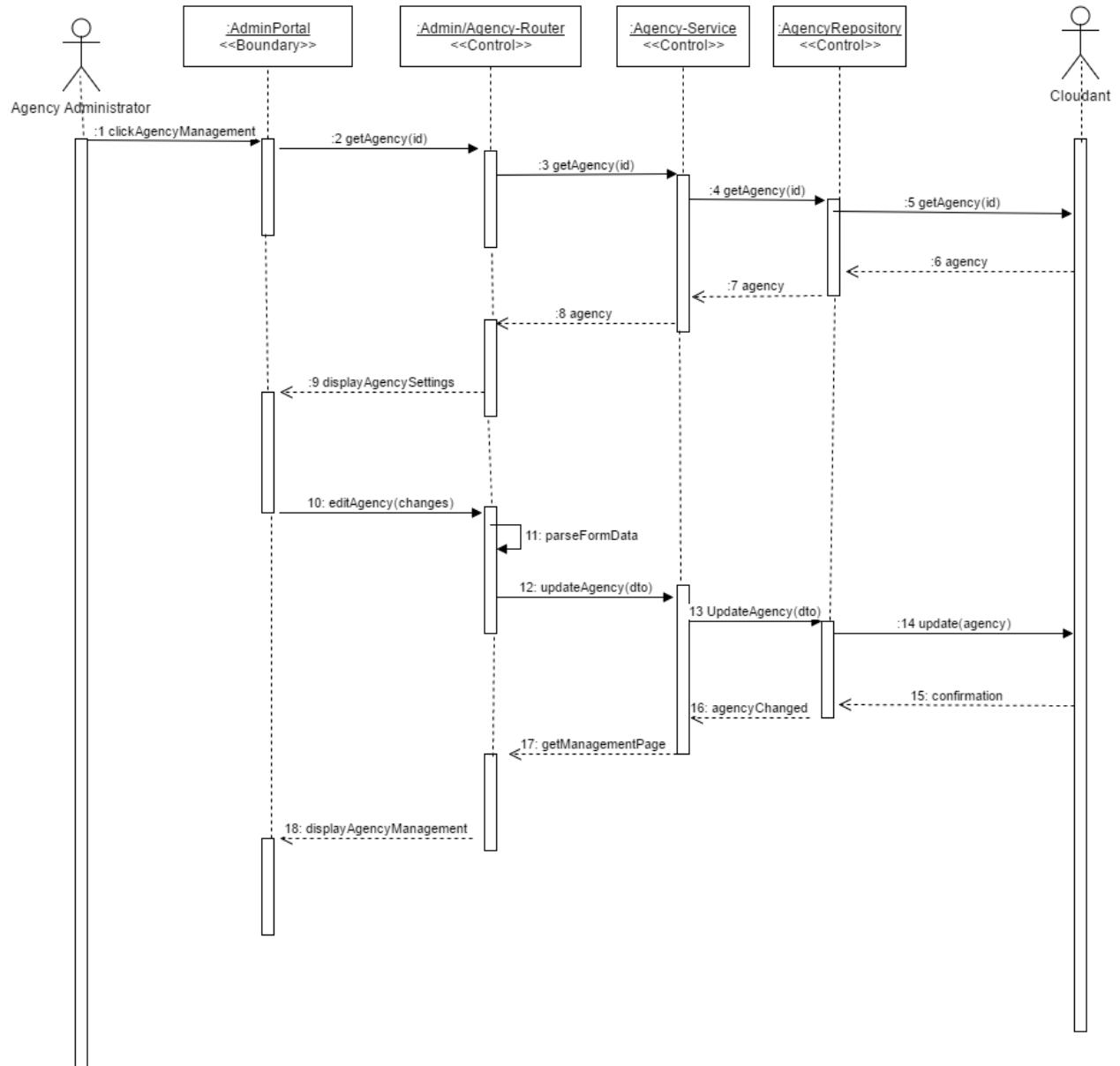
User Story #890 Implement Watermarks for agencies

- Figure sp4-9



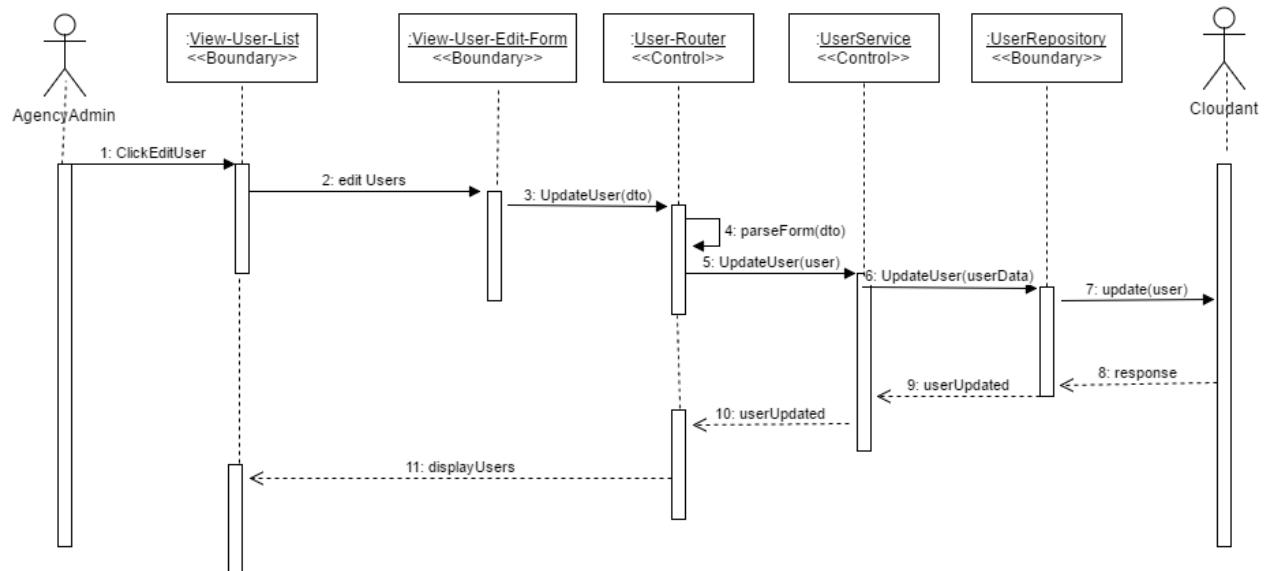
User Story #1037 Allow Tier 3 users to control Agency settings

- Figure sp4-10



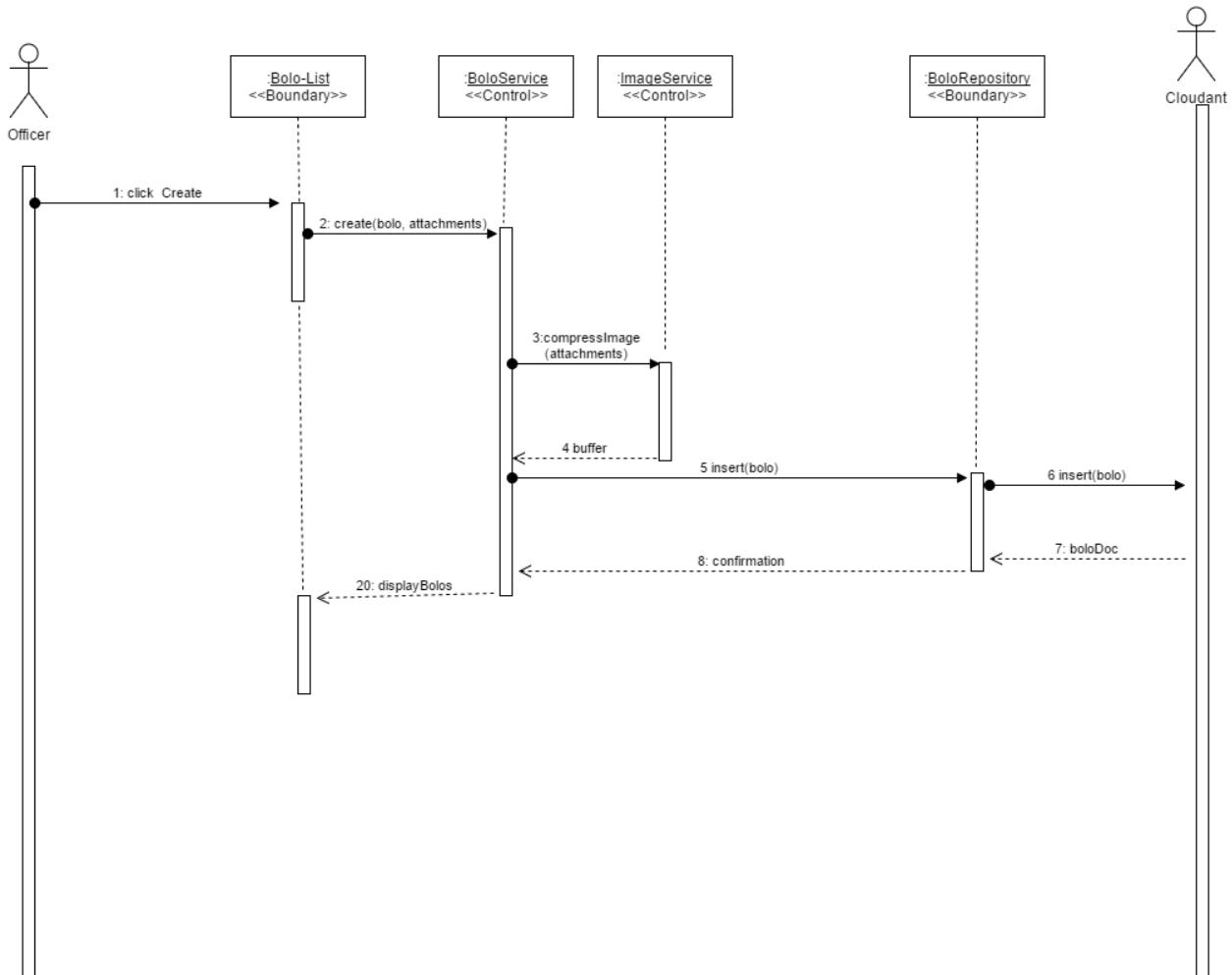
User Story #1081 Prevent Tier 3 users from granting Root access

- Figure sp4-11



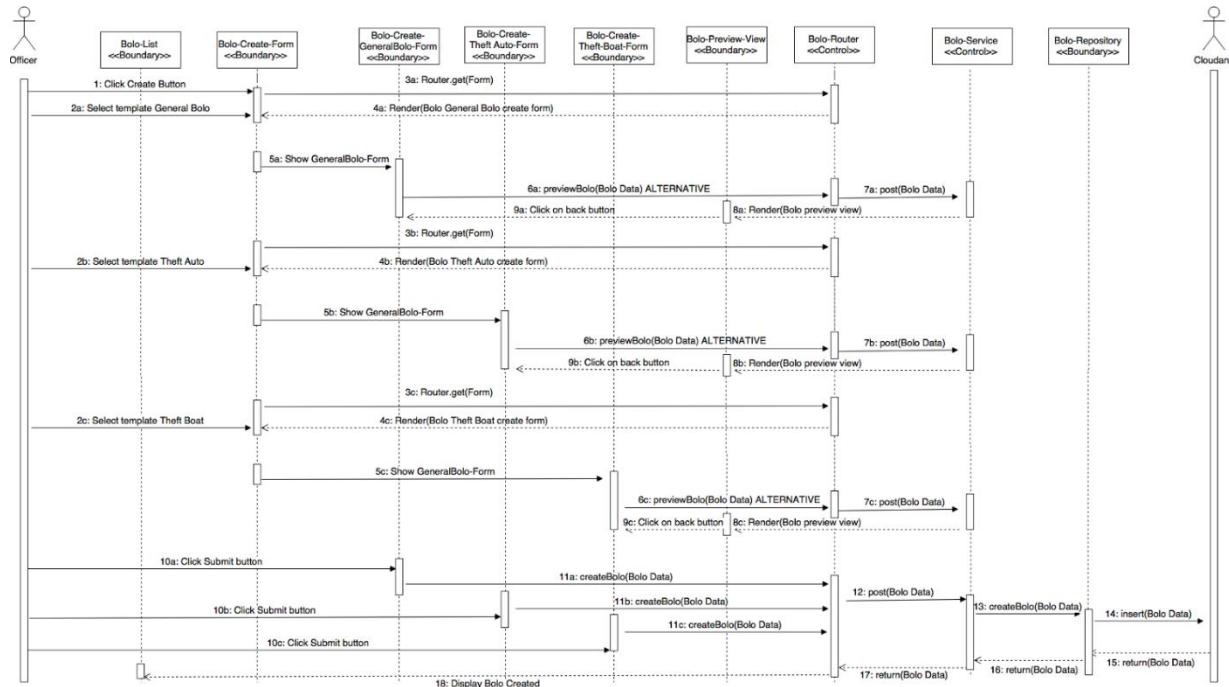
User Story #1083 Prevent Officers from previewing PDFs before confirmation

- Figure sp4-12



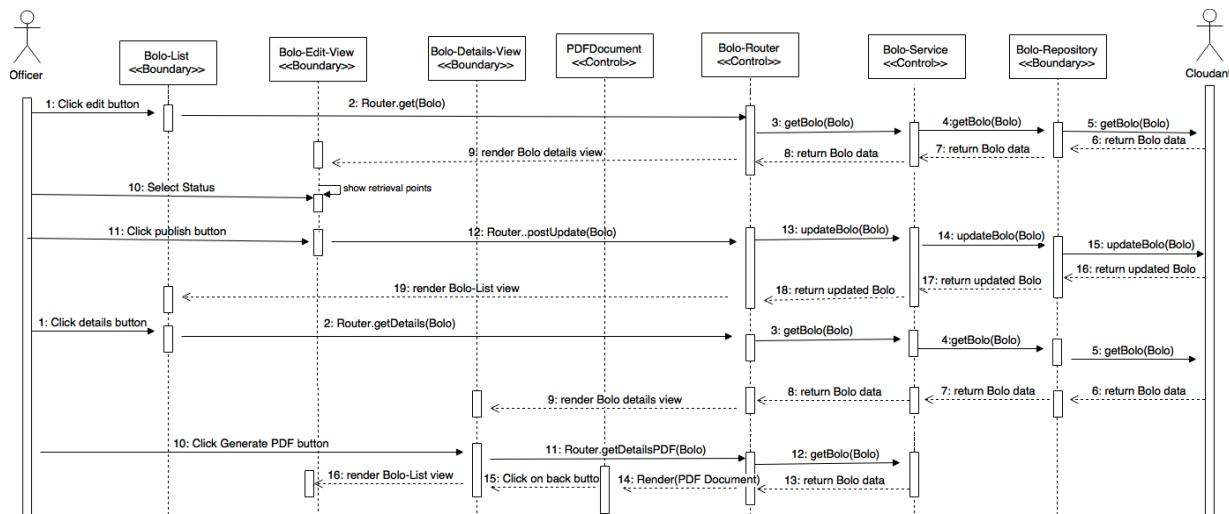
User Story #1087 Implement time retrieval points for data analysis for Create Bolo (General - Auto - Boat)

- Figure sp4-13



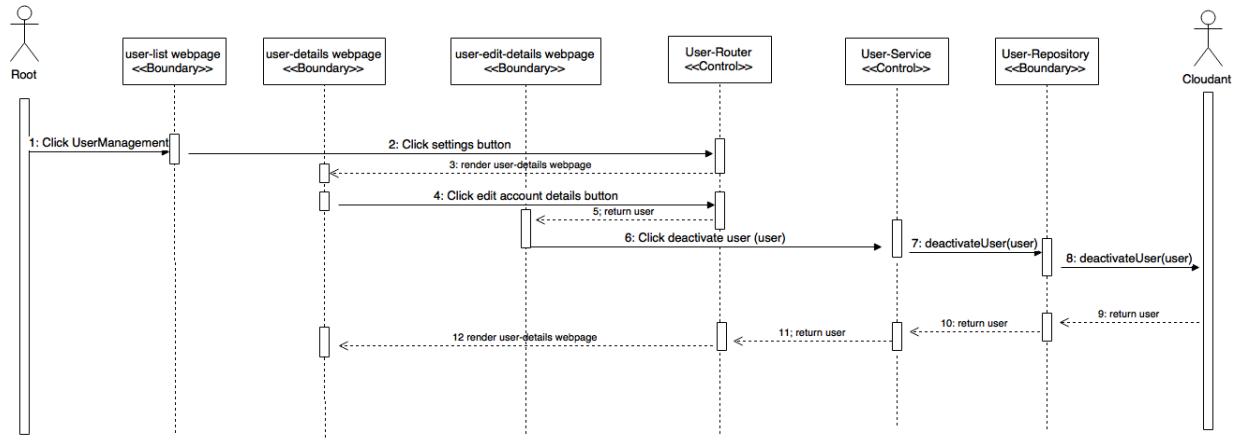
User Story #1119 Implement time retrieval points for data analysis for Edit Bolo (General - Auto - Boat)

- Figure sp4-14



User Story #1088 Deactivate and Activate User Accounts from Root and Administrator

- Figure sp4-15

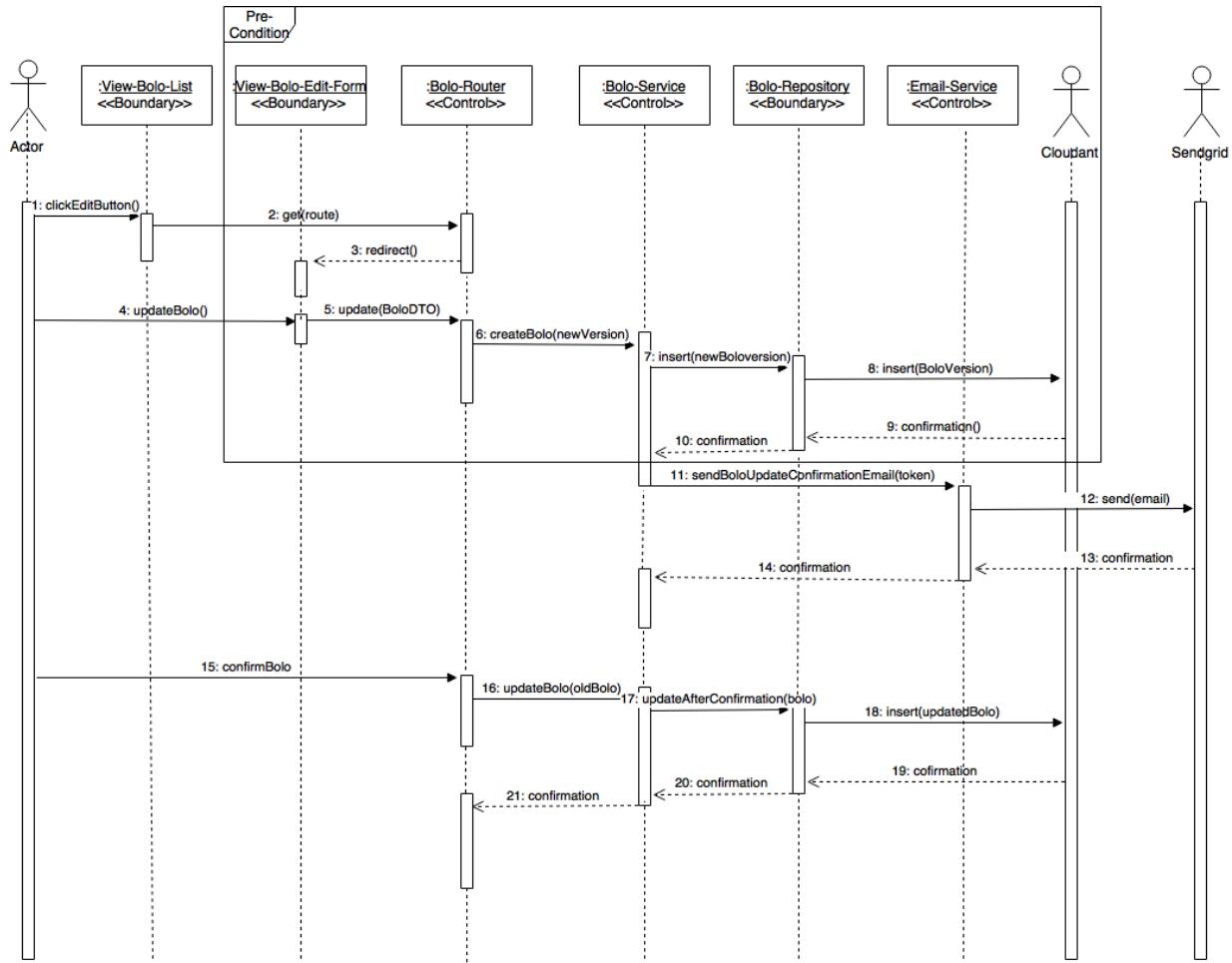


Sprint 5

(07/18/2016 – 07/31/2016)

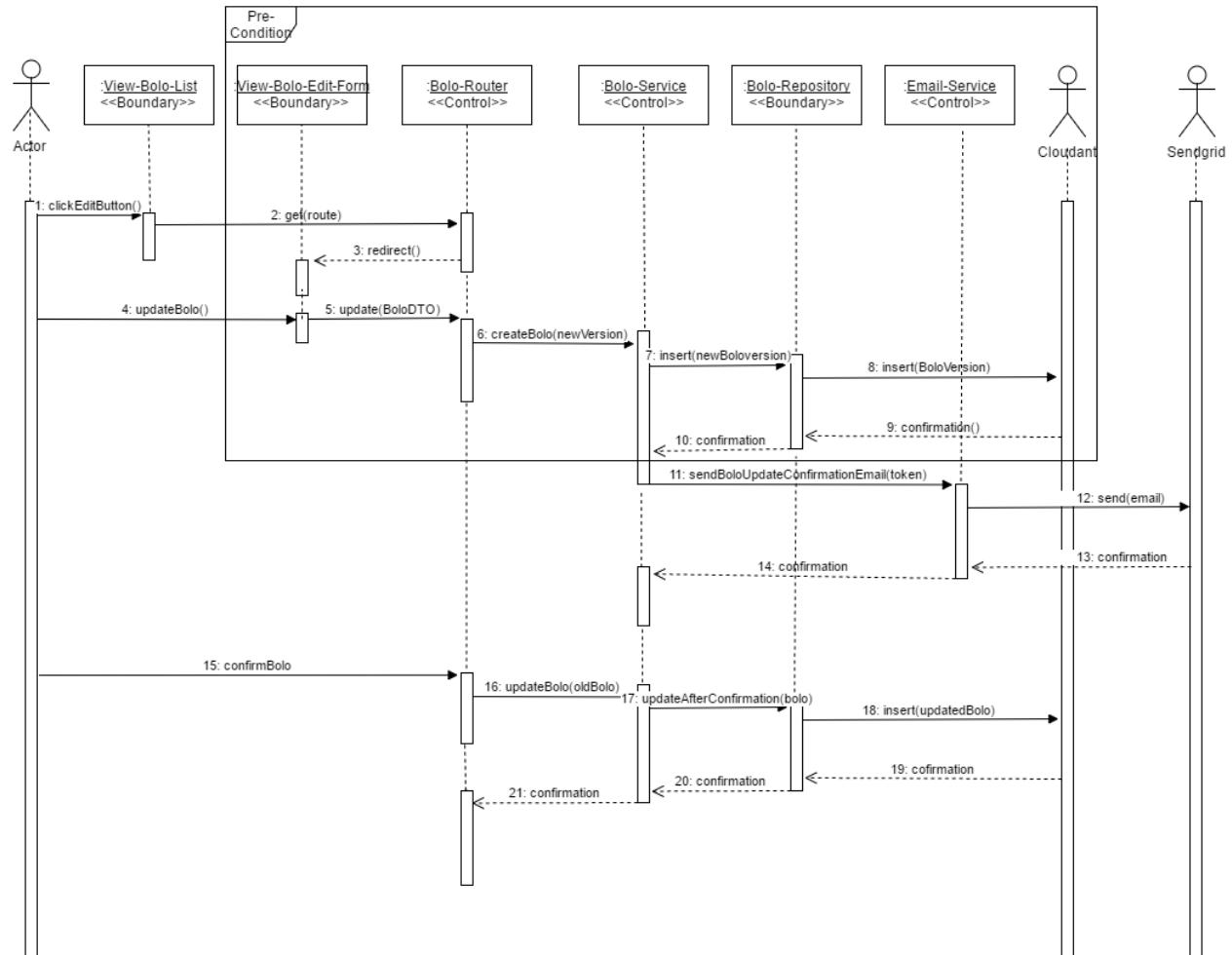
User Story #1094 Implement confirmation of BOLO updates

- Figure sp5-1



User Story #1155 Change PDF labels

- Figure sp5-2



User Story #1086 Change Interactive Edit Menu to Static Label for Status. Keep Data Field Contents After Validations When a New User and a New Agency is Created. Add New Aesthetic for Bolo Buttons

- No diagrams

User Story #1089 Show Edit and Archive only for Root and Administrators and Only View for Users. Create the functionality to go back for Details for Bolos (General, Auto and Boat). Create the ability for view a Bolo when it is Archived, and show edit and restore for Root

- No diagrams

User Story #1163 Connect system setting page to backend

- No diagrams

User Story #1164 connect data analysis page to backend

- No diagrams

Appendix B – User Interface Design

Username

Password

[Login](#) [Forgot password?](#)

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Figure UI01 – About us

The Miami Dade County Association of Chiefs of Police is a premier member organization; the purpose of which is to promote efficient law enforcement services through the cooperation and coordination of all law enforcement agencies within Miami Dade County.

The Miami Dade County Association of Chiefs of Police is the second largest Police Chiefs Association in the State of Florida. It is comprised of more than 250 of the County's top law enforcement executives and another 300 associate members. The Association was originally organized in 1937 to promote the administration and professionalism of law enforcement that would enhance public security by providing superior police protection for the residents of Miami-Dade County and its many visitors. Today, with the same ultimate goal, its role has expanded to provide better communication, education, and training for the county's various police agencies. MDCACP facilitates the dissemination of information, provides continuing police training, and promotes a better understanding of the police profession in general. Membership in the Miami Dade County Association Chiefs of Police supports and maintains the highest standards of public safety and police protection for the millions of people who live, work and play in Miami Dade County.

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Figure UI02 – About us Miami Dade Association of Chiefs of Police



For the seniors in FIU's Department of Electrical and Computer Engineering, everything they've learned in four years culminates with a single project. Working together in teams, they take on projects that test their knowledge, ingenuity, patience and imagination. Finally, on Senior Design Day, the students put on their best suits and showcase their projects to a host of industry advisers who pick their brains and give them feedback on their work. The Senior Project course was created to test a potential graduates ability to work in a real software development environment. Potential graduates' success in this course will enable them to provide a significant software project that may help them land a job in the real-world.

The Professor



Masoud Sadjadi, PhD

Dr. Sadjadi holds a B.S. degree in Hardware Engineering, an M.S. degree in Software Engineering, and a Ph.D. degree in Computer Science. He is currently an Associate Professor in the School of Computing and Information Sciences at Florida International University, where he has been on the faculty since 2004. He serves as the Director of the VIP project at FIU, the Director of the Professional Master in Science for Information Technology at FIU, and is in charge of Computer Science Senior Projects. He has extensive experience in software development and leading large-scale software engineering projects both in industry and in academia. During the past three years, Dr. Sadjadi has successfully transformed senior projects at FIU from a traditional waterfall approach to an agile/scrum approach. Dr. Sadjadi's research is focused on Agile Software Development in Distributed Systems, Autonomic Computing, High-Performance Computing, Grid Computing, Cloud Computing, Pervasive Systems, and Mobile Computing. He is the Director of the Autonomic Cloud Research Laboratory (ACRL) at FIU and leads several projects under the Latin American Grid initiative. Currently, he is collaborating with top researchers in 8 countries and is leading several international collaborative research projects. He has served as the General Chair of, Program Chair, Co-Chair, and Committee Member of several top-tier international conferences and workshops of his field. He has served as a referee for several IEEE and SP&E journals and as a referee and panelist.

Figure UI03 – About us FIU



IBM played a major role in bringing BOLO Flyer Creator to life with their software engineers that mentored the students and their product Bluemix. Bluemix is a cloud platform as a service (PaaS) developed by IBM. It supports several programming languages and services as well as integrated DevOps to build, run, deploy and manage applications on the cloud. Bluemix is based on Cloud Foundry open technology and runs on SoftLayer infrastructure. Bluemix supports several programming languages including Java, Node.js, Go, PHP, Python, Ruby Sinatra, Ruby on Rails and can be extended to support other languages such as Scala through the use of buildpacks.

**Juan Caraballo**

Student Mentor

IBM Software Engineer

**Robert Loredo**

Student Mentor

Lead Developer, IBM Support,

Powered by Watson

Figure UI04 – About us IBM



Figure UI05 – Login

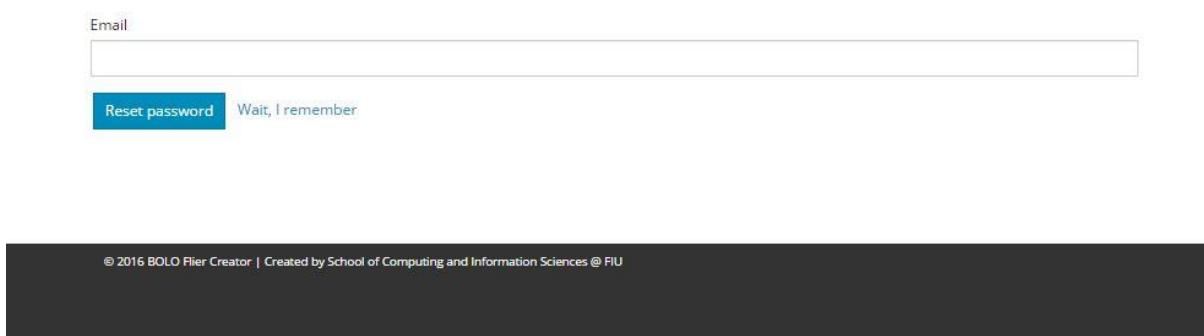


Figure UI06 – Forgot Password

Figure UI07 – Filter Bolos

Home Create▼ Archive Agency Directory Search▼ Admin jason4▼

Active BOLOs

Filter By ▾

Select Agencies ▾ Submit

FIU
Pinecrest
PINECREST

RECOVERED



THEFT - AUTO

Updated: 07-25-16 17:01:52
Created On: 07-25-16 16:44:23
Posted By: Pinecrest

Edit Details Archive

RECOVERED



THEFT - BOAT

Updated: 07-25-16 16:27:33
Created On: 07-11-16 17:55:19
Posted By: Pinecrest

Edit Details Archive

RECOVERED



THEFT - AUTO

Updated: 07-25-16 16:26:01
Created On: 07-14-16 11:30:58
Posted By: Pinecrest

Edit Details Archive

UPDATED



ESCAPE

Updated: 07-25-16 00:16:24
Created On: 07-15-16 19:00:23
Posted By: Pinecrest

Edit Details Archive

Figure UI08 – Multi select agencies

Home Create▼ Archive Agency Directory Search▼ Admin jason4▼

Create a BOLO

Date Reported (DD/MM/YYYY)	Time Reported (HH:MM)
<input type="text"/>	<input type="text"/>
Category	
<input type="text"/>	
First Name	
<input type="text"/>	
Last Name	
<input type="text"/>	
Date of Birth (MM/DD/YYYY)	
<input type="text"/>	
Drivers License Number	
<input type="text"/>	
Address	
<input type="text"/>	
Zip Code	
<input type="text"/>	
Race	
<input type="text"/>	

Featured Image No file chosen

Image Upload No file chosen

Image Upload No file chosen

Video Link

Additional Info

Summary

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Figure UI09 – Create General Bolo

Home Create Archive Agency Directory Search Admin jason4+

BOLO Details Preview

 UNCLASSIFIED// FOR OFFICIAL USE ONLY// LAW ENFORCEMENT SENSITIVE
 Pinecrest Police Department
 110 NW
 Miami, FL 33331
 305305305



New	Bolo ID :	XYZ000
	Author :	Jason Cohen



Figure UI10 – Preview General Bolo

Home Create+ Archive Agency Directory Search+ jason4+

BOLO Details

[Go Back](#) [Generate PDF](#) [View Record](#)

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Pinecrest Police Department
110 NW
Miami, FL, 33331
305305305




MISSING PERSON

Located

Bolo ID:	100652cc71ea45f487c956a033412367
Date Reported:	07/18/2016
Time Reported:	14:00
Name:	John Doe
Race:	White
DOB:	01/01/1974
License #:	M0123456789
Address:	111 NW 54TH AVE
Zip Code:	33311
Height:	06'02"
Weight:	188lbs
Sex:	Male
Hair Color:	Black
Tattoos/Scars:	None
Date Recovered:	07/18/2016
Time Recovered:	18:00
Address Recovered:	121 NW 54TH AVE
Zip Code Recovered:	33311
Agency Recovered:	Pinecrest

[Additional images](#)

Additional Info:

Testing Info

Created: 07-18-16 01:38:14

Figure UI11 – Details General Bolo

UNCLASSIFIED// FOR OFFICIAL USE ONLY// LAW ENFORCEMENT SENSITIVE
Pinecrest Police Department
110 NW
Miami, FL, 33331
305305305




MISSING PERSON

Located

Bolo ID:	100652cc71ea45f487c956a033412367
First Name:	John
Last Name:	Doe
Race:	White
DOB:	01/01/1974
License#:	M0123456789
Address:	111 NW 54TH AVE
Zip Code:	33311
Height:	06-02
Weight:	188 lbs
Sex:	Male

Created: 07-18-16 01:38:14

Date Reported: 07/18/2016
Time Reported: 14:00
Date Recovered: 07/18/2016
Time Recovered: 18:00

Figure UI12 – PDF General Bolo

The screenshot shows the 'Edit General Bolo' screen in the Bolo Flier Creator v5.0 application. At the top, there is a navigation bar with links for Home, Create, Archive, Agency Directory, Search, Admin, and a user account labeled 'jason4'. Below the navigation bar, the title 'Update BOLO Details' is displayed, along with a 'Go Back' button.

The main form is divided into several sections:

- Details:** A summary section containing:
 - Author:** Nilton Test
 - Agency:** Pinecrest
 - Created:** 07-18-16 01:38:14
 - Updated:** 07-18-16 03:15:34
- Status:** A dropdown menu currently set to 'Located'.
- Date Recovered (DD/MM/YYYY):** 07/18/2016
- Time Recovered (HH:MM):** 18:00
- Address Recovered:** 121 NW 54TH AVE
- Zip Code:** 33311
- Agency:** Pinecrest
- Category:** A dropdown menu currently set to 'MISSING PERSON'.

At the bottom of the form, there are two buttons: 'Publish' (in blue) and 'Preview' (disabled).

In the footer, there is a copyright notice: © 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU.

Figure UI13 – Edit General Bolo

Home Create Archive Agency Directory Search Admin jason4

Create a BOLO

Date Reported (DD/MM/YYYY) Time Reported (HH:MM)

Category
THEFT - BOAT

Vessel

Year

Manufacturer

Model

Type

Length - Feet

Color

Featured Image
 No file chosen

Image Upload
 No file chosen

Image Upload
 No file chosen

Video Link

Additional Info

Summary

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Figure UI14 – Create Theft Boat Bolo

Home Create Archive Agency Directory Search Admin jason4▼

BOLO Details Preview

[Back to Create BOLO](#)

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Pinecrest Police Department
110 NW
Miami, FL. 33331
305305305




THEFT - BOAT

New	Bolo ID :	XYZ000
	Author :	Jason Cohen
VESSEL		
PROPELLION		
TRAILER		

No Image Available

Figure UI15 – Preview Theft Boat Bolo

Home Create Archive Agency Directory Search jason4▼

BOLO Details

[Go Back](#) [Generate PDF](#) [View Record](#)

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Pinecrest Police Department
110 NW
Miami, FL. 33331
305305305




THEFT - BOAT

Recovered	Bolo ID :	1463345f976a4cac81766e01ce7c3383
	Date Reported :	12/12/2011
	Time Reported :	12:21
	Author :	Nilton Test
VESSEL		
Year : 2016		
Manufacturer : Mariner		
Model : Mariner		

Created: 07-11-16 17:55:19

Figure UI16 – Details Theft Boat Bolo



Figure UI17 – PDF Theft Boat Bolo

Home Create Archive Agency Directory Search Admin jason4*

Update BOLO Details

Go Back

Details	
Author: Nilton Test Agency: Pinecrest Created: 07-11-16 18:38:20 Updated: 07-14-16 11:30:12	
Status	
Recovered	
Date Recovered (DD/MM/YYYY)	Time Recovered (HH:MM)
Address Recovered	
Zip Code	Agency
Category	
THEFT - BOAT	
Vessel	
Publish	Preview

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Figure UI18 – Edit Theft Boat Bolo

The screenshot shows the 'Create a BOLO' page of the Bolo Flier Creator v5.0 application. At the top, there is a navigation bar with links for Home, Create, Archive, Agency Directory, Search, Admin, and a user account labeled 'jason4+'. Below the navigation bar, the main title 'Create a BOLO' is displayed.

The form fields include:

- Date Reported (DD/MM/YYYY): A text input field.
- Time Reported (HH:MM): A text input field.
- Category: A dropdown menu currently set to 'THEFT - AUTO'.
- Year: A dropdown menu.
- Make: A dropdown menu.
- Model: A dropdown menu.
- Style: A dropdown menu.
- Color: A dropdown menu.
- Vehicle Identification Number: A text input field.
- License Plate State: A dropdown menu.
- License Plate Number: A text input field.
- Featured Image: A file upload button labeled 'Choose File' with a message 'No file chosen'.
- Image Upload: A file upload button labeled 'Choose File' with a message 'No file chosen'.
- Image Upload: A file upload button labeled 'Choose File' with a message 'No file chosen'.
- Video Link: A text input field.
- Additional Info: A text input field.
- Summary: A text input field.

At the bottom left, there are two buttons: 'SUBMIT' and 'PREVIEW'.

At the very bottom of the page, there is a footer note: © 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU

Figure UI19 – Create Theft Boat

Home Create Archive Agency Directory Search Admin jason4▼

BOLO Details Preview

[Back to Create BOLO](#)



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Pinecrest Police Department
110 NW
Miami, FL 33331
305305305



THEFT - AUTO

New	Bolo ID :	XYZ000
No Photo Available	Author :	Jason Cohen



Figure UI20 – Preview Theft Boat

Home Create Archive Agency Directory Search jason4▼

BOLO Details

[Go Back](#) [Generate PDF](#) [View Record](#)



UNCLASSIFIED// FOR OFFICIAL USE ONLY// LAW ENFORCEMENT SENSITIVE

Pinecrest Police Department
110 NW
Miami, FL 33331
305305305



THEFT - AUTO

Recovered	Bolo ID :	fa78ccb6174c482facc9b2200cce4b27
	Date Reported :	53/44/3343
	Time Reported :	43:52
	Author :	Nilton Test
	Year :	2016
	Make :	GMC
	Vehicle Identification Number :	RXNTXFG56
Created: 07-14-16 11:30:58	Tag License Plate :	IN NZDXGF

Figure UI21 – Details Theft Boat

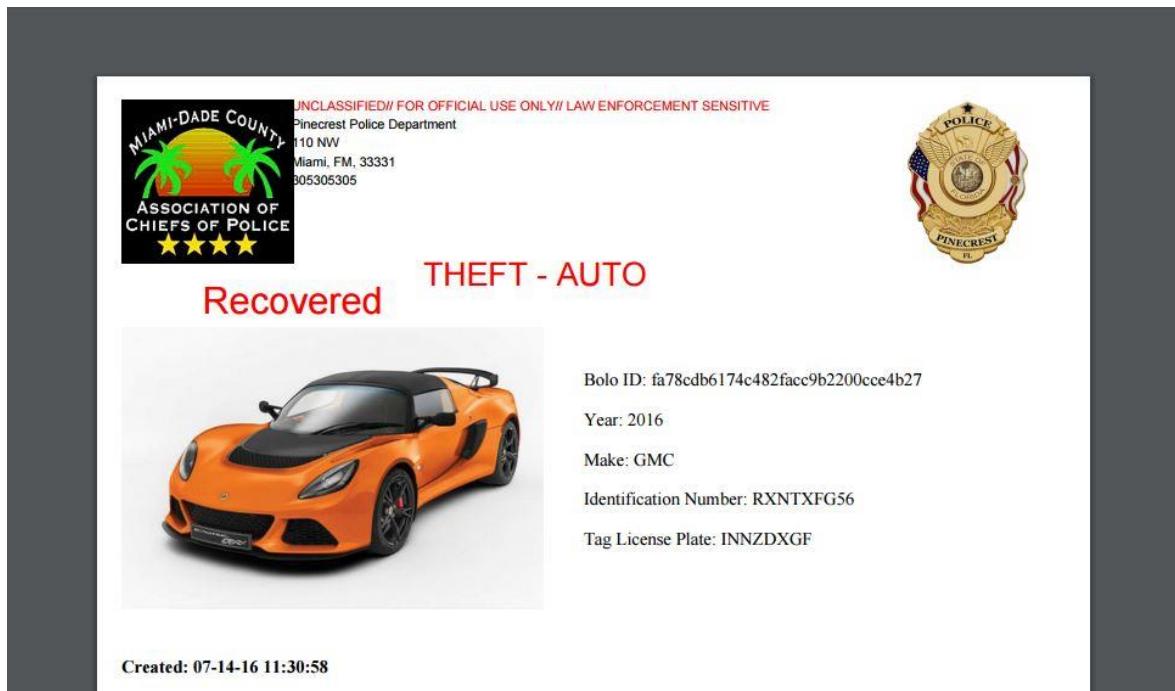


Figure UI22 – PDF Theft Boat

Home Create Archive Agency Directory Search Admin jason4▼

Update BOLO Details

Go Back

Details	
Author: Nilton Test Agency: Pinecrest Created: 07-14-16 11:30:58 Updated: 07-25-16 16:26:01	
Status	
<input type="text" value="Recovered"/>	
Date Recovered (DD/MM/YYYY)	Time Recovered (HH:MM)
<input type="text"/> <input type="text"/>	
Address Recovered	
<input type="text"/> <input type="text"/>	
Zip Code	Agency
<input type="text"/> <input type="text"/>	
Category	
<input type="text" value="THEFT - AUTO"/>	
Year	
<input type="button" value="Publish"/> <input type="button" value="Preview"/>	

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Figure UI23 – Edit Theft Boat

The screenshot shows the 'Archived BOLOs' section of the Bolo Flier Creator application. At the top, there's a search bar labeled 'Bolos Older Than:' with a dropdown set to 'Two Years'. A red 'Purge' button is located below the search bar. The main area contains four cards, each representing a different type of bolo:

- ESCAPE:** NEW. Placeholder photo. Updated: 07-30-16 15:18:46. Created On: 07-30-16 15:18:46. Posted By: Pinecrest. Buttons: View, Restore, Delete.
- THEFT - AUTO:** NEW. Placeholder photo of a car. Updated: 07-26-16 18:13:15. Created On: 07-26-16 18:13:15. Posted By: Pinecrest. Buttons: View, Restore, Delete.
- ESCAPE:** UPDATED. Placeholder photo. Updated: 07-26-16 18:07:30. Created On: 07-26-16 13:47:19. Posted By: Pinecrest. Buttons: View, Restore, Delete.
- BURGLARY:** NEW. Placeholder photo. Updated: 07-26-16 18:01:57. Created On: 07-26-16 18:01:57. Posted By: Pinecrest. Buttons: View, Restore, Delete.

Figure UI24 – Archived Bolos

The screenshot shows the 'Agency Directory' section of the application. The 'Agency Directory' tab is highlighted with a cursor icon. The table lists agencies with the following data:

Name	Address	City	Zip	State	Phone
FIU		Miami		Florida	
Pinecrest	110 NW	Miami	33331	FM	305305305

At the bottom of the page, a footer note reads: © 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU

Figure UI25 – Agency Directory

Home Create Archive Agency Directory Search Admin jason4

Search BOLOs

Search General Bolo

Agency
N/A

Category

First Name

Last Name

Date of Birth (MM/DD/YYYY)

Drivers License Number

Address

Zip Code

Wildcard Search

Match Fields

Search

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Figure UI26 – Search General Bolo

The screenshot shows a web-based application for searching for stolen boats. At the top, there is a dark header bar with navigation links: Home, Create, Archive, Agency Directory, Search, and Admin. On the right side of the header, it says "jason4" with a dropdown arrow. Below the header, there is a dark blue navigation bar with the text "Search BOLOs". The main content area has a white background and contains several input fields and sections:

- Search Theft - Boat**
- Agency**: A dropdown menu showing "N/A".
- Vessel**
- Year**: An input field.
- Manufacturer**: An input field.
- Model**: An input field.
- Type**: An input field.
- Length - Feet**: An input field.
- Color**: An input field.
- Hull Identification Number**: An input field.
- Wildcard Search**: An input field.
- Match Fields**: A checkbox.
- Search**: A blue button.

At the bottom of the page, there is a dark footer bar with the copyright information: "© 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU".

Figure UI27 – Search Theft Boat Bolo

The screenshot shows the 'Search BOLOs' page of the Bolo Flier Creator v5.0 application. At the top, there is a navigation bar with links for Home, Create, Archive, Agency Directory, Search, and Admin. A user profile 'jason4' is also visible. Below the navigation bar, the main title 'Search BOLOs' is displayed. The search form is titled 'Search Theft - Auto'. It contains several input fields: 'Agency' (N/A), 'Year' (empty), 'Make' (empty), 'Model' (empty), 'Style' (empty), 'Color' (empty), 'Vehicle Identification Number' (empty), 'Tag License Plate' (empty), and 'Wildcard Search' (empty). There is also a 'Match Fields' checkbox and a 'Search' button. At the bottom of the page, a footer notes: '© 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU'.

Figure UI28 – Search Theft Auto Bolo

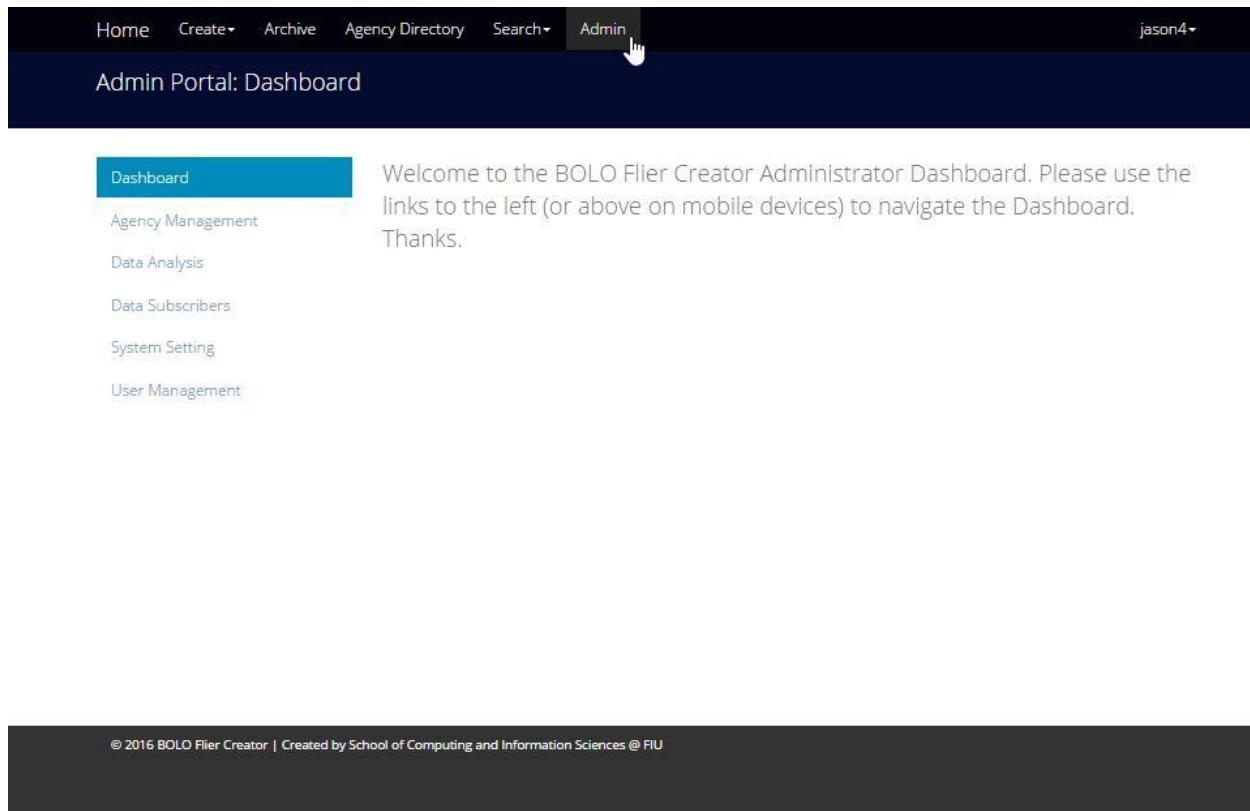


Figure UI29 – Admin Dashboard

ID	Name	City	State	Zip	Phone	Action
456	FIU	Miami	Florida			
123	Pinecrest	Miami	FL	33331	305305305	

[Dashboard](#)

[Agency Management](#)

[Data Analysis](#)

[Data Subscribers](#)

[System Setting](#)

[User Management](#)

Total Agencies: 2

Add New Agency

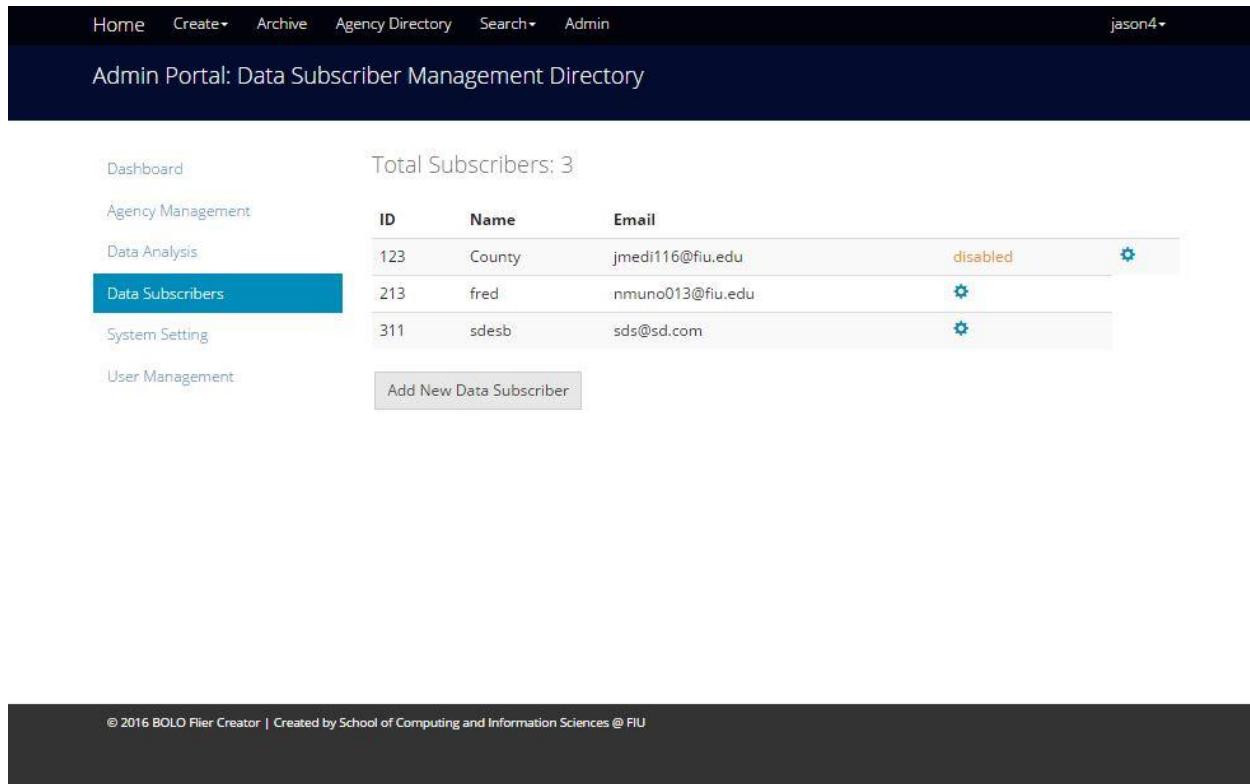
Figure UI30 – Agency Management

The screenshot shows the 'Admin Portal: New Agency Registration' page. At the top, there's a navigation bar with links for Home, Create, Archive, Agency Directory, Search, and Admin. A user 'jason4+' is logged in. On the left, a sidebar menu includes Dashboard, Agency Management (which is selected), Data Analysis (highlighted in blue), Data Subscribers, System Setting, and User Management. The main content area has a heading 'Restore Previous Form' with a note: 'Fill out the form and submit to create a new agency.' It contains fields for Agency ID, Agency Name, Agency Domain (with placeholder '@example.fl.gov'), Address, City, State (with AL selected), Zip Code, Phone Number, and three file upload fields for Logo Image, Shield Image, and Watermark Image. A 'Submit' button is at the bottom.

Figure UI31 – Create New Agency

The screenshot shows the 'Admin Portal: Data Analysis' page. The top navigation bar is identical to Figure UI31. The sidebar menu on the left shows Agency Management, Data Analysis (selected and highlighted in blue), Data Subscribers, System Setting, and User Management. The main content area has a heading 'Retrieve data for analysis.' and a 'Select an Agency' dropdown menu with a 'Download' button next to it. At the bottom of the page, a footer bar contains the text '© 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU'.

Figure UI32 – Data Analysis

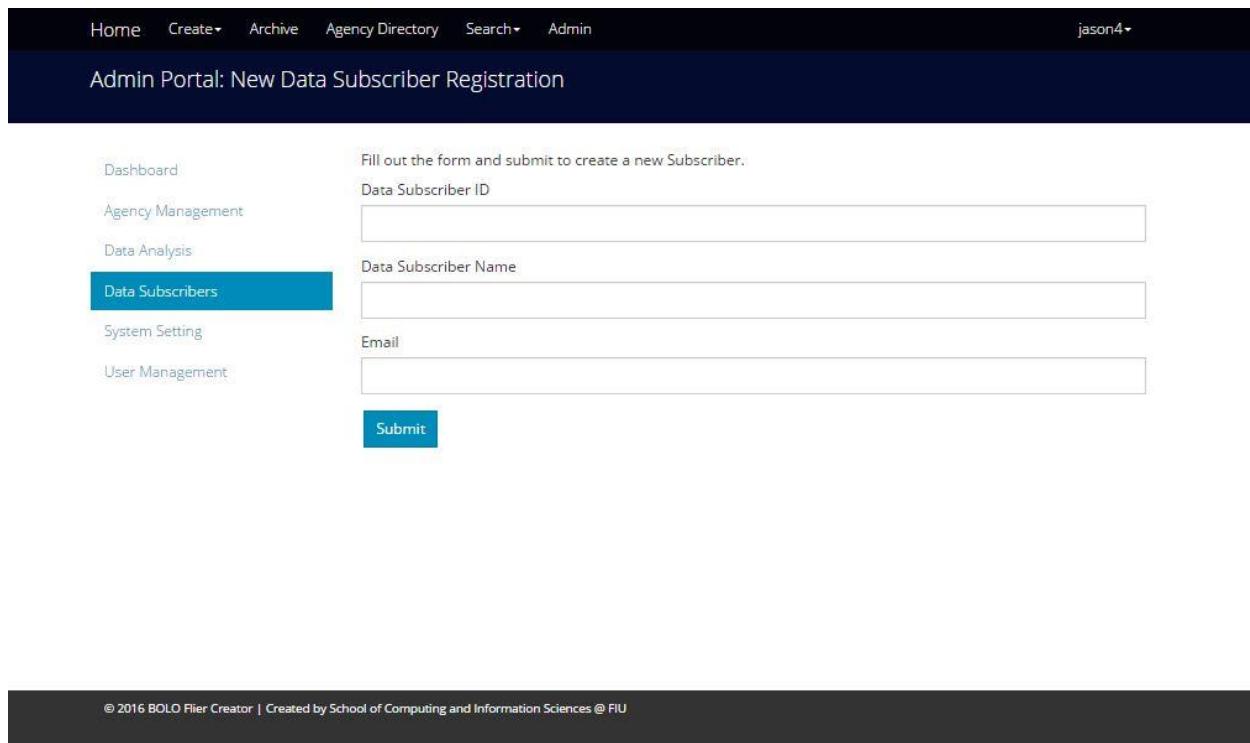


The screenshot shows the Admin Portal interface for the Data Subscriber Management Directory. The top navigation bar includes links for Home, Create, Archive, Agency Directory, Search, Admin, and a user account (jason4). The main title is "Admin Portal: Data Subscriber Management Directory". On the left, a sidebar menu lists Dashboard, Agency Management, Data Analysis, Data Subscribers (which is highlighted in blue), System Setting, and User Management. The main content area displays a table titled "Total Subscribers: 3" with three rows of data:

ID	Name	Email	Status	Action
123	County	jmedi116@fiu.edu	disabled	
213	fred	nmuno013@fiu.edu		
311	sdesb	sds@sds.com		

A button labeled "Add New Data Subscriber" is located at the bottom of the table. The footer of the page includes the copyright notice "© 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU".

Figure UI33 – Data Subscribers



The screenshot shows the Admin Portal interface for New Data Subscriber Registration. The top navigation bar includes links for Home, Create, Archive, Agency Directory, Search, Admin, and a user account (jason4). The main title is "Admin Portal: New Data Subscriber Registration". On the left, a sidebar menu lists Dashboard, Agency Management, Data Analysis, Data Subscribers (which is highlighted in blue), System Setting, and User Management. The main content area contains a form with instructions: "Fill out the form and submit to create a new Subscriber." It includes fields for Data Subscriber ID (with a placeholder box), Data Subscriber Name (with a placeholder box), Email (with a placeholder box), and a "Submit" button.

The footer of the page includes the copyright notice "© 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU".

Figure UI34 – Create Data Subscriber

The screenshot shows the 'Admin' section of the Bolo Flier Creator v5.0 interface. At the top, there is a navigation bar with links: Home, Create, Archive, Agency Directory, Search, and Admin. Below the navigation bar, the title 'Admin Portal: System Settings' is displayed. On the left side, there is a vertical menu with options: Dashboard, Agency Management, Data Analysis, Data Subscribers, System Setting (which is highlighted with a blue background), and User Management. To the right of the menu, there is a form titled 'Set the system settings'. It contains two input fields: 'Brute Force Login (3 - 10) Attempts' with the value '10' and 'System Timeout (10 - 240) Minutes' with the value '11'. A 'Submit' button is located below these fields. At the bottom of the page, there is a footer bar with the text '© 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU'.

Figure UI35 – System Settings

The screenshot shows the 'Admin Portal: User Directory' page. At the top, there is a navigation bar with links: Home, Create, Archive, Agency Directory, Search, and Admin. A user 'jason4+' is logged in. Below the navigation bar, the title 'Admin Portal: User Directory' is displayed, along with a 'Sort▼' button. The main content area shows a table titled 'Total Users: 8'. The table has columns: Agency, Username, Name, Email, and Role. The data is as follows:

	Agency	Username	Name	Email	Role
Data Analysis	Pinecrest	jason1	Jason Cohen	jasoncohen1@example.com	OFFICER
Data Subscribers	Pinecrest	jason2	Jason Cohen	jasoncohen2@example.com	SUPERVISOR
System Setting	Pinecrest	jason3	Jason Cohen	jasoncohen3@example.com	OFFICER
User Management	Pinecrest	jason4	Jason Cohen	jasoncohen4@example.com	ROOT
	Pinecrest	nilton1	Nilton Test	nmuno013@fiu.edu	ROOT
	Pinecrest	nilton2	Nilton2 Test2	test@test.com	SUPERVISOR
	Pinecrest	root	Root User	root@example.com	ROOT
	Pinecrest	super	Supervisor User	super@example.com	SUPERVISOR

At the bottom left of the table area is a button labeled 'Add New User'.

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Figure UI36 – User Management

The screenshot shows the 'New User Registration' page. At the top, there is a navigation bar with links: Home, Create, Archive, Agency Directory, Search, and Admin. A user 'jason4+' is logged in. Below the navigation bar, the title 'New User Registration' is displayed. The main content area contains a form for user registration. The form fields are:

- Restore Previous Form (button)
- Username:
- Email:
- First Name:
- Last Name:
- Password:
- Repeat Password:
- Role:
- Agency:
- Badge No.:
- Section / Unit:
- Rank / Title:
- Submit (button)

At the bottom left of the form area is a footer note: © 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU

Figure UI37 – Create New User

Account Management: Your Account Details

Account Details	
Name	Jason Cohen
Email	jasoncohen4@example.com
Badge Number	officerBadge
Section / Unit	officerUnit
Rank / Title	officerRank
Role	ROOT
Agency	Pinecrest

[Update Details](#)

Figure UI38 – Account Details

Account Management: Change your password.

Change Password	
New Password (required)	<input type="password"/>
Confirm Password (required)	<input type="password"/>

[Submit](#)

Figure UI39 – Change Password

The screenshot shows the 'Notifications' section of the Bolo Flier Creator interface. At the top, there's a navigation bar with links for Home, Create, Archive, Agency Directory, Search, Admin, and a user account dropdown for 'jason4'. Below the navigation is a header titled 'Account Management: BOLO Email Notifications'. On the left, there's a sidebar with 'Account Details' and links for Change Password and Notifications (which is highlighted in blue). The main content area displays a table of agency notifications. The table has columns for Agency, City, State, and Zip. One row is visible, showing 'Pinecrest' in Miami, FL 33331. At the bottom of the table are two buttons: 'Unsubscribe Selected' (orange) and 'More Agencies' (blue). A copyright notice at the very bottom of the page reads: '© 2016 BOLO Flier Creator | Created by School of Computing and Information Sciences @ FIU'.

Figure UI40 – Notifications

Appendix C – Sprint Review Reports

Sprint 1 Report

Date: 3 June 2016

Time: 6:00 - 6:15 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 892, Expire passwords in 90 days.
- User Story 887 Remove unnecessary details from email alert
- User Story 882, Implement Wildcard search field
- User Story 888, Open PDFs document in new tab
- User Story 894, Update all pages to BOLO v5.0
- User Story 881, Create template for Theft-Auto Bolo
- User Story 895, Create template for Theft-Boat Bolo

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- User Story 879, Confirm BOLO via email after creation
 - How this should be reflected on the user story definition in Mingle:
 - User story was moved to sprint 2
- User story 891, Prevent password from displaying in the url
 - How this should be reflected on the user story definition in Mingle:
 - User story was moved to sprint 2
- User Story 880, Send feed of BOLOs as JSON documents
 - How this should be reflected on the user story definition in Mingle:
 - User Story was moved to Sprint 2

Sprint 2 Report

Date: 17 June 2016

Time: 6:00 - 6:15 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 983 use the authentication of the confirmation for resetting a password
- User Story 919 Adjust the timeout secession to ten minutes

- User Story 930 As a user I would like to receive an email notification when my password is reset so that I know if someone else has reset my password
- User Story 879, Confirm BOLO via email after creation
- User Story 891, Prevent password from displaying in the url
- User Story 880, Send feed of BOLOs as JSON documents
- User Story 920, Compress images upon upload
- User Story 896, Create specific bolo for Theft-Auto
- User Story 932, View Bolo details for Theft-Auto
- User Story 933, Edit Bolo for Theft-Auto

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- None

Sprint 3 Report

Date: July 2 2016

Time: 6:00 - 6:15 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 934 Remove empty fields from PDF bolo for display
- User Story 935 Add drop down menu for links such as settings, user guide, logout and others to be added at a later time
- User Story 1006 Add a user guide page for each tier
- User Story 1010 Give root access to customize lower tier settings
- User Story 931 Create Script to reset Database Schema
- User Story 985 Enhance Image Service
- User Story 986 Unsubscribe from BOLO emails
- User Story 1001 Implement routes with authentication
- User Story 1007: Redesign Filter by Agencies on the Home Page
- User Story 1033: Fix several bugs
- User Story 990: Redesign and add validations for General Bolo Template
- User Story 981: Implement Search For New Bolo Templates
- User Story 991: Redesign and add validations for Theft Auto Template
- User Story 992: Redesign and add validations for Theft Boat Template
- User Story 1030: Delete the Ongoing Status from Bolo
- User Story 1009: Automate database creation scripts
- User Story 1011: Filter BOLOS by author and reformat the dropdown
- User Story 1008: Prevent user from registering with email domain outside of his agency's domain
- User Story 1014: Lock user account after 10 incorrect logins
- User Story 889: Modify bolo email to no reply

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- About us pages (moving to sprint 4)
- Sent text
- Toward the bolos
- Have the bolos in a list to view
- Automatic switch of an agency when a user switches agency.
- User Story 1037 Allow Tier 3 users to control Agency subscriptions
 - How this should be reflected on the user story definition in Mingle:
Moved to Sprint 4
- User Story 1038 Filter by multiple agencies in bolo list page
 - How this should be reflected on the user story definition in Mingle:
Moved to Sprint 4

Sprint 4 Report

Date: July 16 2016

Time: 6:00 - 6:15 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 890 Implement Watermarks for agencies
- User Story 1037 Allow Tier 3 users to control Agency settings
- User Story 1038 Filter by multiple agencies in bolo list page
- User Story 1014 Lock user account after 10 incorrect login attempts
- User Story 1010 Create a page with root access to customize system settings
- User Story 1096 Implement a link to download a PDF of the user's guide based on user's tier
- User Story 1097 Implement an About Miami Dade County Association of Chief of Police (MDCACP) page.
- User Story 1098 Implement an About us page for FIU's contribution
- User Story 1099 Create an About us page for IBM's contribution
- User Story 1100 Create a page where Root can retrieve data for analysis
- User Story 1081 Prevent Tier 3 users from granting Root access
- User Story 1083 Prevent Officers from previewing PDFs before confirmation
- User Story 1087 Implement time retrieval points for data analysis for Create Bolo
- User Story 1119 Implement time retrieval points for data analysis for Edit Bolo
- User Story 1088 Deactivate and Activate Users Accounts from Root

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- User Story 1094 Implement confirmation of BOLO updates
 - How this should be reflected on the user story definition in Mingle:
Moved to Sprint 5

Sprint 5 Report

Date: July 30 2016

Time: 6:00 - 6:15 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 1094 Implement confirmation of BOLO updates
- User Story 1155 Change PDF labels
- User Story 1086 Change Interactive Edit Menu to Static Label for Status. Keep Data Field Contents After Validations When a New User and a New Agency is Created. Add New Aesthetic for Bolo Buttons
- User Story 1089 Show Edit and Archive only for Root and Administrators and Only View for Users. Create the functionality to go back for Details for Bolos (General, Auto and Boat). Create the ability for view a Bolo when it is Archived, and show edit and restore for Root
- User Story 1163 Connect system setting page to backend
- User Story 1164 Connect data analysis page to backend

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Spring Planning meeting.

- None

Appendix D – Sprint Retrospective Reports

Sprint 1 Retrospective

Date: 06/07/2016

Attendees: Emmanuel Gonzalez, Jorge Medina, Nilton Muñoz, John Burke

Start time: 9:00 PM

End time: 10:00PM

What went wrong?

- Did we do a good job estimating our team's velocity?
 - The team is moving along the user story completion rate at 1 per week, given the fact that our first meeting with product owner was absent.
- Did we do a good job estimating the points (time required) for each user story?
 - Most user stories implemented on time
- Did each team member work as scheduled?
 - Yes, every group member dedicated the hours that were agreed towards the project.

What went right?

- We implemented user stories approved by the product owner. He was satisfied with our process.

How to address the issues in the next sprint?

- How to improve the process?
 - Having a better understanding of the entire process of the documentation, mingle and the code will improve our next sprint. The product also requires a sufficient amount of testing from the previous semester.
- How to improve the product?
 - Maintain communication with the product owners, the mentors and each other.

Sprint 2 Retrospective

Date: 17 June 2016

Time: 6:15 - 6:30 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

What went wrong?

Nothing. No issues.

- Did we do a good job estimating our team's velocity?
 - Yes, all stories were finished on time.
- Did we do a good job estimating the points (time required) for each user story?
 - Yes, we were more efficient this time in estimating our user stories
- Did each team member work as scheduled?
 - Yes.

What went right?

- Everything, we had a stellar week.

How to address the issues in the next sprint?

- How to improve the process?
 - Having a better understanding of the entire process of the documentation, mingle and the code will improve our next sprint. The product also requires a sufficient amount of testing from the previous semester.
- How to improve the product?
 - Maintain communication with the product owners, the mentors and each other.

Sprint 3 Retrospective

Date: July 2 2016

Time: 2:45 - 3:00 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

What went wrong?

No major issues this sprint

- Did we do a good job estimating our team's velocity?
 - Yes 3 user stories per week was appropriate.
- Did we do a good job estimating the points (time required) for each user story?
 - Yes, user stories were appropriately estimated
- Did each team member work as scheduled?
 - Yes.

What went right?

- We completed more user stories than last sprint as a group.
- Delivered application to production server

How to address the issues in the next sprint?

- How to improve the process?
 - Get more user features from the product owners and we need to recommend more as well
- How to improve the product?
 - Maintain communication with the product owners, the mentors and each other.

Sprint 4 Retrospective

Date: July 16 2016

Time: 2:45 - 3:00 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

What went wrong?

No major issues this sprint

- Did we do a good job estimating our team's velocity?
 - Yes, all stories finished on time, around 2 stories per week
- Did we do a good job estimating the points (time required) for each user story?

- Did each team member work as scheduled?
 - Yes.

What went right?

- We completed and delivered all the stories from the sprint planning

How to address the issues in the next sprint?

- How to improve the process?
 - Get more user features from the product owners.I
- How to improve the product?
 - Maintain communication with the product owners, the mentors and each other.

Sprint 5 Retrospective

Date: July 30 2016

Time: 2:45 - 3:00 pm

Burke, John

Gonzalez, Emmanuel

Medina, Jorge

Munoz, Nilton

What went wrong?

- No major issues this sprint
- Did we do a good job estimating our team's velocity?
 - Yes, all stories finished on time, around 2 stories per week
- Did we do a good job estimating the points (time required) for each user story?
 - Yes, user stories were appropriately estimated based on team's scale
- Did each team member work as scheduled?
 - Yes.

What went right?

- We completed and delivered all the stories from the sprint planning

REFERENCES

Wilson, Doug (2016) body-parser source code (Version 1.13.2) [Source code].
<https://www.npmjs.com/package/body-parser>,

Mueller, Patrick (2016) cfenv source code (Version 1.0.3) [Source code].
<https://www.npmjs.com/package/body-parser>,

Smith, J (2016) cloudant source code (Version 1.4.1) [Source code].
<https://www.npmjs.com/package/cloudant>,

Smith, J (2016) cfenv source code (Version 1.0.3) [Source code].
<https://www.npmjs.com/package/cfenv>,

Libraries:

```
"blob": "0.0.4",
"blob-stream": "^0.1.3",
"blob-util": "^1.2.0",
"body-parser": "^1.13.2",
"brfs": "^1.4.3",
"browsify": "^13.0.0",
"cfenv": "1.0.x",
"cloudant": "*",
"connect-flash": "^0.1.1",
"cookie-parser": "*",
"csurf": "^1.8.3",
"dotenv": "^1.2.0",
"errorhandler": "1.4.1",
"express": "4.12.x",
"express-session": "1.7.6",
"gm": "^1.21.1",
"gulp": "latest",
"gulp-confirm": "latest",
"gulp-exec": "latest",
"iframe": "^0.3.1",
"imagemin": "^4.0.0",
"jade": "^1.11.0",
"jimp": "^0.2.9",
"json2csv": "^3.6.2",
"lodash": "^3.10.1",
"method-override": "2.3.3",
"moment": "*",
"moment-timezone": "^0.5.5",
"morgan": "1.6.1",
"multiparty": "^4.1.2",
"node-phantom": "^0.2.5",
"node-uuid": "^1.4.3",
"node-wkhtml": "^0.1.0-alpha1",
"nodepdf": "1.2.1",
"passport": "^0.3.0",
"passport-local": "^1.0.0",
"pdfkit": "^0.7.2",
"phantomjs": "^2.1.3",
"promise": "^7.0.4",
"request": "^2.64.0",
"sendgrid": "^2.0.0",
"serve-favicon": "^2.3.0",
"socket.io": "^1.0.0",
"socket.io-express-session": "^0.1.3",
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"validate.js": "^0.9.0",
"wkhtmltopdf": "^0.1.5"
"chai": "^3.3.0",
"istanbul": "^0.3.22",
"jsdoc": "^3.3.3",
"jshint": "^2.8.0",
"mocha": "^2.3.3",
"mockery": "^1.4.0",
"nock": "^2.13.0",
"sinon": "^1.17.0"
"node": "0.12.x"
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