

Mobile Tickets Dashboard

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Executive Summary

The Virginia Tech Network Infrastructure and Services Field Engineers play a vital role in the school and community. They are the ones that respond to network and telephone trouble calls. Since majority of their work is done on the go it is important for them to be able to communicate with the rest of their team efficiently. It is much easier to send updates by way of a smart phone or tablet rather than carrying a laptop everywhere. Since the engineers would be utilizing touch screens it is essential that they have an interface that is easy to interact with; hence the need for a mobile web application.

The mobile web application is for Virginia Tech's instance of the JIRA issue tracking system. The goal for the finished product was to create a web dashboard for viewing and updating trouble tickets. The expected impact of the project is that it should improve the response time by providing the field engineers a means for faster status updates and a more efficient way for gathering information on the job. From a design standpoint the mobile application should be a menu driven list that allows for quick access to specific pages and modules.

The utilization of JIRA in the mobile web application was executed by using the JIRA REST API version 4.3.3. The development of the back-end was handled using Python2 and Flask. Using both the language and framework, respectively, all necessary integrations were met. The front-end of the mobile dashboard was done using Twitter's Bootstrap. This front-end framework was essential in meeting the design expectations such as menu driven lists and forms. In addition, Bootstrap provides a simple way for the front end to be responsive to interface changes which was important for our front-end. The capacity to provide aspect support for multiple resolutions was vital for the mobile web application because of its ability to be run on the web and be utilized via a tablet, smartphone, or laptop. Due to the breadth of devices that can be used the dashboard must cater to each type of user. In regards to the user interface itself, the dashboard is supplied with large buttons and large text to be easily selected and read, respectively.

The features for the mobile dashboard were selected carefully after making use of the Virginia Tech's JIRA instance and consultations with Kimberley Homer, Director of Quality Assurance at Virginia Tech Network Infrastructure and Services. The support for a log-in screen, ticket views, project views, search, and resolving issues are all implemented. The ticket-views provide the field engineer with the description of the ticket, the reporter, due date, as well as the history logs. If the ticket is theirs then they are able to resolve the issue and leave a note. Some features of JIRA, such as ticket creation and editing, could not be implemented.

User's Manual

How can you use the VT JIRA Mobile Web App?

Here is the breakdown:

- Log-in
 - Log in to Virginia Tech's JIRA instance
 - In Firefox or Chrome, follow the help to determine how to open the developer console
 - In the developer console, type document.cookie
 - Copy the JSESSIONID, and navigate to /login/JSESSIONID where JSESSIONID is your JSESSIONID on the JIRA mobile app

- My Issues
 - Displays all your assigned tickets
 - Ticket View allows you to view:
 - Title
 - Description
 - Reporter
 - Due Date
 - History
 - Resolving Tickets
 - Click on the Resolve button to resolve the issue
 - Leave a note in the text box when prompted

- In Progress
 - Displays all tickets that currently have the status of "In Progress"

- Search
 - Allows you to search for keywords in the domain of all the tickets and results in the display of all issues pertaining to that keyword

- Projects
 - Displays all of the projects included in Virginia Tech's NI & S JIRA
 - Clicking the project name will display all issues under that project

- Contact
 - Displays contact information for the webmaster of Virginia Tech's Communication Network Services

Developer's Manual

Concept Map

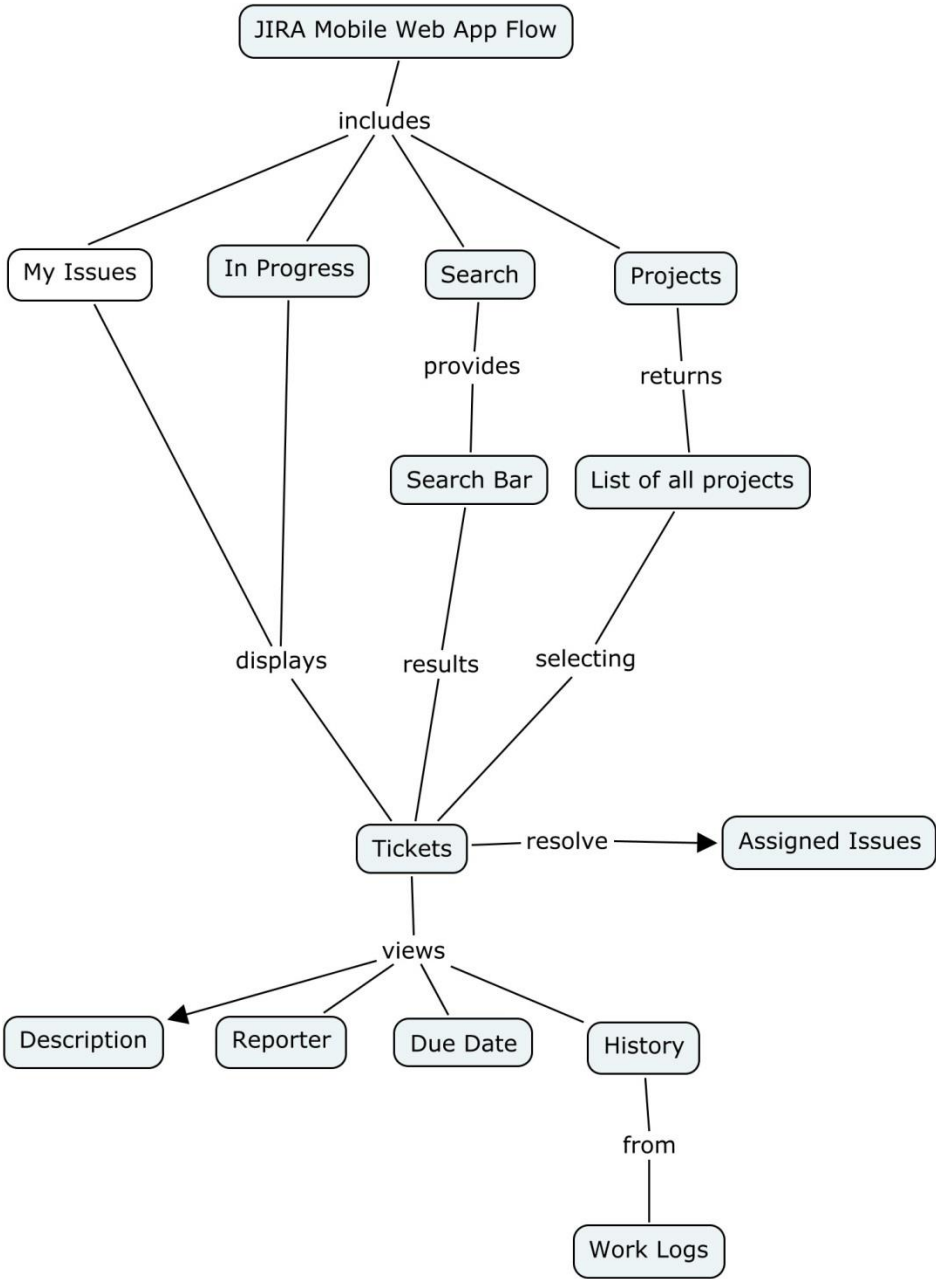


Figure 1: Concept Map Describing Flow of Web App

Inventory of Data Files

This application uses Python2 and Flask.

mobiletickets/

runserver.py

Starts the Flask debug interface. Only supposed to be used in testing
Should be ran in a virtual environment to ensure safety

mobiletickets/

config.py.example

An example configuration file, this defines how many issues to show
per page

Defines the JIRA REST API location

__init__.py

Initializes the JIRA dashboard, importing libraries
Also allows for sending of notification to email

jira.py

Brings in the JIRA REST API to usable interface
Sets up The 'browser' identification

views.py

Defines routes to the created webpages
Also defines the type of control (push/post)

templates/

-- HTML Templates. Many of them extend base.HTML

base.html

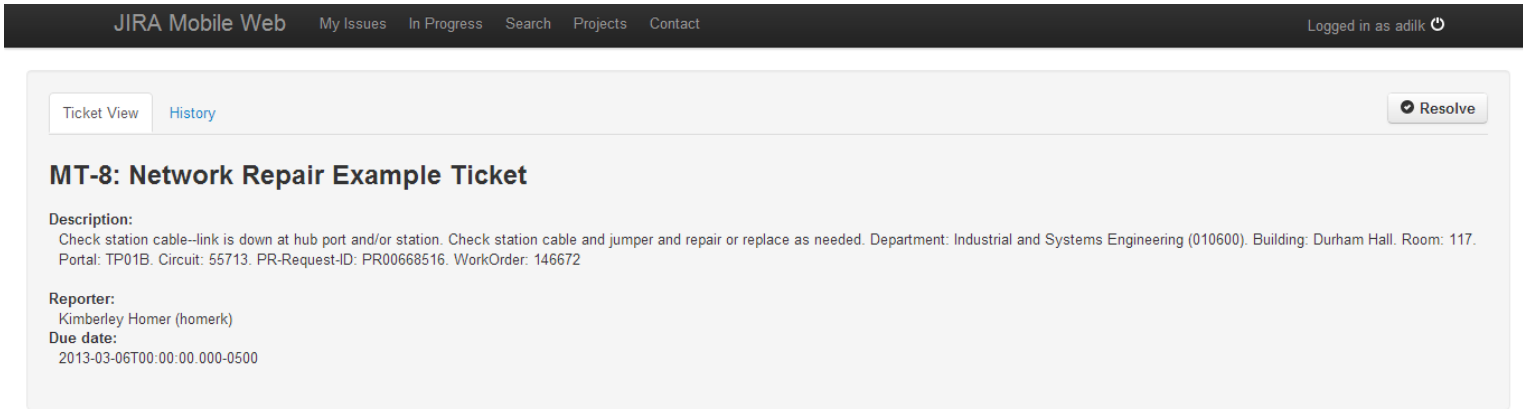
Provides the common view for the website, such as toolbar and
footer

static/

-- Any static content, such as js, css, img

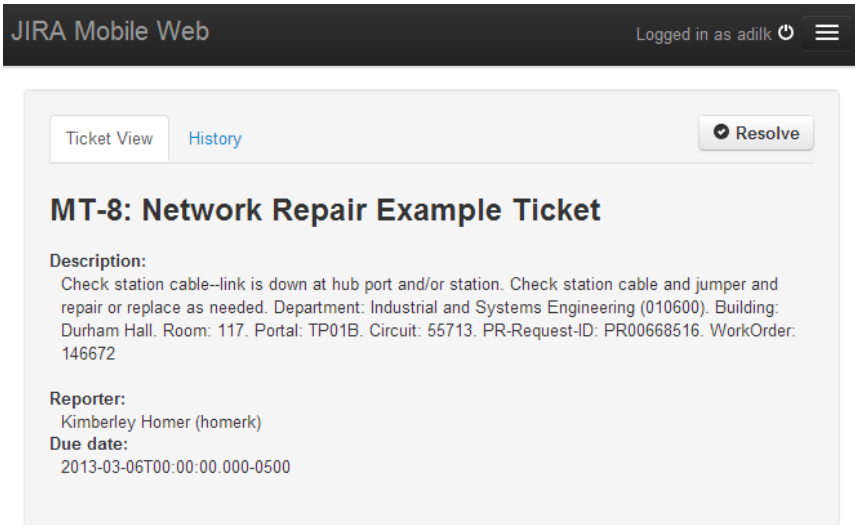
This is provided by Twitter Bootstrap

Screenshots



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Figure 2a: Ticket View Wide-screen



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Figure 2b: Ticket View Compact

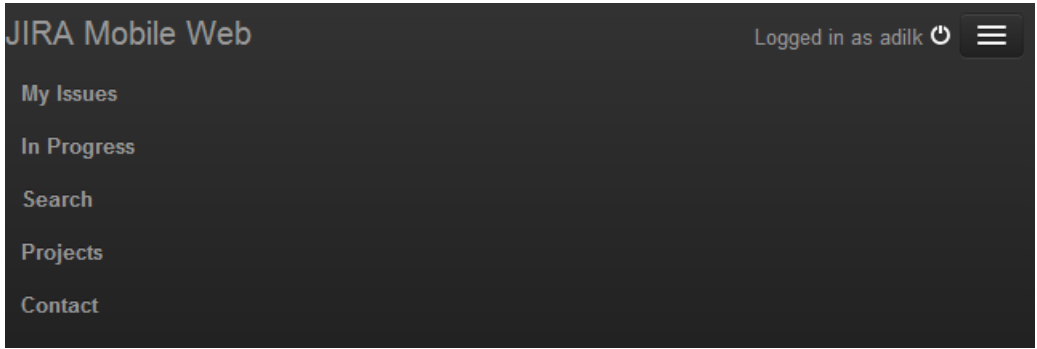


Figure 3: Menu Compact

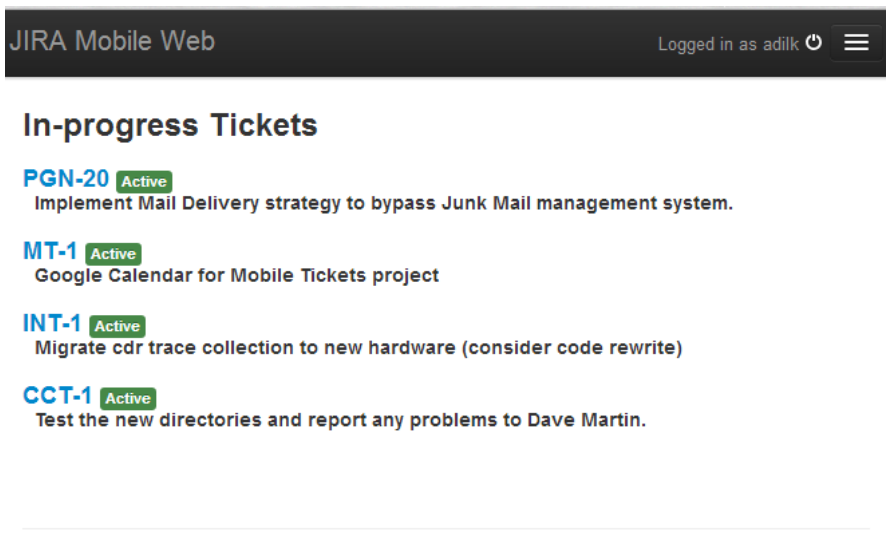


Figure 4: List of Tickets/Issues

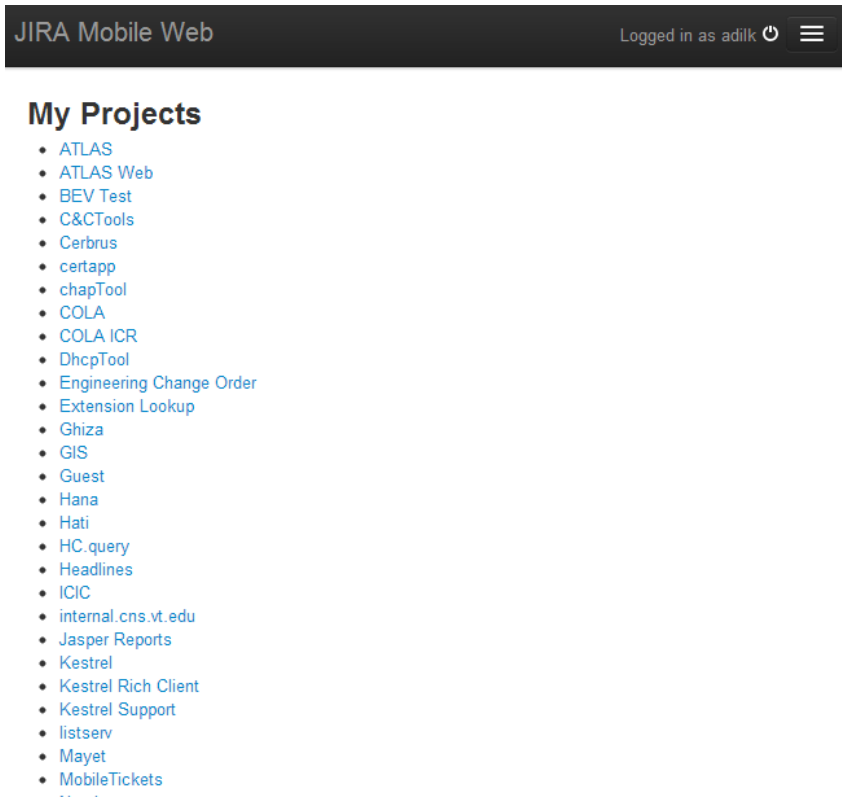


Figure 5: List of Projects

Reflections

The process in constructing this mobile web application for JIRA began in February where we first met with our client Kimberley Homer. The highlights of the project timeline included our midterm presentation, in which our client attended, as well as the final presentation. A more detailed table of our schedule can be seen below:

Action	Date	Progress
1st Client Meeting	2/19/2013	Complete
Feature list	3/1/2013	Complete
Consultation with Client	3/5/2012	Complete
Front-end prototype	3/20/2013	Complete
Midterm Presentation	3/27/2013	Complete
Complete back-end	4/22/2013	Complete
Final product	5/2/2013	Complete
Final Presentation	5/8/2013	Complete

Table 1: Timeline

Since we had three developers contributing to the mobile dashboard it was necessary to make use of a version control system. We decided to go with Git since it was something we were all familiar with. Group programming was an interesting experience and is something that will be expected of us in our future careers.

The problems we faced all dealt with the version of JIRA that Virginia Tech Communications Network Services (CNS) is using. The current version they are using is outdated and does not have support for editing or creating tickets in the REST API that we are using. It only has support for performing a set number of operations on existing tickets, for example, marking a ticket as resolved or starting/stopping progress. Our solution was to remove the interface for this functionality, but with future versions of JIRA this will be possible.

Acknowledgements

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