

BoilerCheck Team 13

Design Inspection, Code Inspection, Unit Testing

Team Members:

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Overall Architecture:

Our project has two major Modules that require defect-free operation. The first module is the Android application. Within the Android application we have various components. The major components are the REST Client, which communicates with the backend, and the GPS code, which handles updating location and processing that information. The minor components include each different page in the app: Login, Create Account, and Building Selection.

The second major Module is the API Server/Backend. This module listens for API calls made from the application, and processes the information received for creating accounts, logging in, authenticating, and pulling information from the database.

Interaction between the two are critical for complete functionality of the overall project, as any defects in communication between the two will make the application nearly worthless.

Design Inspection

Product	Android App Design Inspection
Date	2/11/2016
Author	Jacob Richwine
Moderator	Jeremiah Murphy
Inspectors	Nadeem Mahmood, Zhandos Suleimenov
Recorder	Kinshuk Juneja

Defect #	Description	Severity	How Corrected
1	App does not have permission to connect internet	1	Add Internet Permission flag to android_manifest.xml
2	App does not have information to connect to BackEnd network	1	Change the RESTClient base URL http://10.0.2.2:3000/
3	HTTP calls to BackEnd API must be asynchronous	1	Put REST Calls in classes with (extends <code>AsyncTask<Void, Void, Boolean></code>)
4	The REST API Calls must match the backend	1	Make sure the REST Calls for login, signup, etc. Match between App and BackEnd API
5	User Must be authenticated to proceed further	1	Create Persistent Cookie jar to store authenticated session data after login

Product	API Server Design Inspection
Date	2/11/2016
Author	Jacob Richwine
Moderator	Kinshuk Juneja
Inspectors	Michael Reed, Jeremiah Murphy
Recorder	Nadeem Mahmood

Defect #	Description	Severity	How Corrected
1	Port must not interfere with any other running services	1	Set port for API Server to 3000
2	MongoDB For information must be unique	2	Set Database name to BoilerCheck in config.js
3	To access authenticated routes, user must be authenticated	2	add checkAuth function to data routes
4	User created from App must be unique	2	Add existing user check in passport.js

Product	Location Services (GPS) Design Inspection
Date	2/11/16
Author	Zhandos Suleimenov
Moderator	Jacob Richwine
Inspectors	Kinshuk Juneja, Michael Reed
Recorder	Nadeem Mahmood

Defect #	Description	Severity	How Corrected
1	Weren't checking if users location is turned on	1	Added check of user's location is turned on and create prompt to go turn on their location
2	No conversion of distance of coordinates to miles	1	Created a function that took coordinates and returned distance in miles
3	Were by default using active GPS usage, causing too much battery usage	1	Switched to passive GPS usage
4	Not getting initial user position, and therefore can't update that position	1	Call getLastKnownLocation that gets initial position

Code Inspection

Product	Android App Code Inspection
Date	2/11/2016
Author	Jacob Richwine
Moderator	Zhandos Suleimenov
Inspectors	Kinshuk Juneja, Nadeem Mahmood
Recorder	Jeremiah Murphy

Defect #	Description	Severity	How Corrected
1	Null values not handled on requests from BackEnd cause crash	1	Added Null Checks to response code
2	finish() not called after creating account, leaves old activities open	3	Added calls to onPostExecute after response is called
3	Failure Response not handled	2	Add failure handlers to send false to onPostExecute and enable prompts again
4	Anything will work for email field	3	Add @ check for email field
5	Anything will work for password field	3	Add length check for password field
6	Login page background resizes on soft keyboard appearance	3	Changed the visibility state of the soft keyboard

Product	API Server Code Inspection
Date	2/12/2016
Author	Jacob Richwine
Moderator	Jeremiah Murphy
Inspectors	Kinshuk Juneja, Zhandos Suleimenov
Recorder	Michael Reed

Defect #	Description	Severity	How Corrected
1	No Defects found		
2			
3			

Product	Location Services (GPS) Code Inspection
Date	2/12/2016
Author	Zhandos Suleimenov, Nadeem Mahmood
Moderator	Jeremiah Murphy
Inspectors	Kinshuk Juneja, Jacob Richwine
Recorder	Michael Reed

Defect #	Description	Severity	How Corrected
1	Using returned values(coordinates) from location class cause crash if location couldn't be found	2	Create a try catch around the statements
2	Check for Google	2	Added code to check

	Play Services availability was not performed and a dialog that prompts a user to install Google Play Services was needed		the availability of Google Play Services and display a dialog for a user to take action if the service was not available
3	Not asking user for permission to use location services causes app to crash when trying to use location services	2	Check if user has given permission, if not ask user for permission
4	Wrong distance (in miles) was being calculated from coordinate points	1	Fixed algorithm that converted coordinate points to distance in miles

Unit Testing

Android Application Inputs:

- Button Presses
- Data Entry (Email, Password) Login/Creation
- Response from BackEnd Server

Android Application Outputs:

- Username/Password On Login/Creation
- Sending GPS Coordinates
- Loading next screen when Button is pressed

API Server Inputs:

- REST Calls (GET/POST) from Android Application (Login, Signup, Checkin)
- Header Data: (Username, Password, GPS Coordinates)

API Server Outputs:

- Success or Failure Codes
- Session cookie on authentication
- Creating User in MongoDB

GPS Location Service Inputs:

- Phone Coordinates(longitude, latitude)

GPS Location Service Outputs:

- Purdue Building Name

Product	Android App
Date	2/11/2016
Author	Jacob Richwine, Michael Reed

Defect #	Description	Severity	How Corrected
1	Wrong route being sent on user login	1	Change route from signup to login when Login Button is pressed
2	Authentication Cookies not being saved after logging in	2	Rewrite RESTClient code and put in a class extending the application
3	After create failure, the app minimizes out	3	Change async task return to false to allow page to stay open
4	After login failure, the app minimizes out	3	Change async task return to false to allow page to stay open
5	Entire application crashes when making any RESTClient calls	1	Add <code>Looper.getMainLooper()</code> To the constructor of AsyncHttpRespon seHandler
6	Trying to create an already existing account shows password incorrect	3	Change Error from password incorrect to User already exists
7	Trying to login with a non-existing account shows password incorrect	3	Change Error to "Invalid Email or Password" and focus the email view

8	Unable to determine which button was clicked to go to the list of building	2	Create a value representing the 3 different buttons and pass it as an extra.
9	Unable to visually determine which category of building selected	3	Read extra from intent and change screen title accordingly
10	User directed to login when restarting app after logging in	2	Send session cookie to server at application start and get "logged in" response

Product	API Server
Date	2/11/2016
Author	Jacob Richwine

Defect #	Description	Severity	How Corrected
1	For login route, Server not returning correct response code on login failure	2	Add res.sendStatus(200) to route if login failed.
2	For create route, server not returning correct failure code	2	Add res.SendStatus(200) to route when creation fails
3	Response not being passed back at all	1	Rewrite express route handler callback functions to work with Android Application instead of browser

4	Wrong type of authentication on login	1	Change passport authentication from local-signup to local-login
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Product	Location Services (GPS) Unit Testing
Date	2/11/2016
Author	Zhandos Suleimenov, Nadeem Mahmood

Defect #	Description	Severity	How Corrected
1	When a person moved to another building, corresponding change in location was not detected	1	Added onLocationChanged method that handles location change, which is called by Google Play Services API.
2	An error for connection failure was not displayed	1	Added Google Play Services's onConnectionFailed method that appropriately shows the error message.
3	Longitude and latitude was not calculated correctly	1	Added onResume method that connects to the Google Play Services after service suspension and added ACCESS_COARSE_LOCATION permission
4	Accuracy on location was not as precise as needed and was giving incorrect	1	Changed configuration to use FINE_LOCATION instead of

	coordinates		COARSE_LOCATION
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