

BoilerCheck Team 13 Sprint 2

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 (Location Services, Building Data Processing)
Date	3/4/2016
Author	Nadeem Mahmood, Zhandos Suleimenov
Moderator	Michael Reed
Inspectors	Jacob Richwine, Kinshuk Juneja
Recorder	Jeremiah Murphy

Defect #	Description	Severity	How Corrected
1	CompareTo function for Building class was giving incorrect comparisons	3	Changed the order of the subtraction of the building distances to get correct comparison
2	Can't check-in after the first check-in	2	Reset the shortestDistance variable after function call
3	Sometimes the longitude and latitude will not get updated when FINE_LOCATION is not available	1	Use both FINE_LOCATION and COARSE_LOCATION so that we have updated location at all times
4	GPS location is continually updated after leaving and app and after check-out	1	Call onStop() function to stop getting GPS updates

Product	API Server Design Inspection (Checkout, Checkin, Refresh, Data Insertion)
Date	3/2/2016
Author	Jacob Richwine
Moderator	Kinshuk Juneja
Inspectors	Nadeem Mahmood, Michael Reed
Recorder	Zhandos Suleimenov

Defect #	Description	Severity	How Corrected
1	JSON Data holding building information should not be in the actual codebase	1	Move object to a seperate file called map.json with the GPSTData object
2	Refresh capability code shouldn't return entire data set	3	Filter mongoDB results to just CurrentCapacity field

Product	UI Elements Design Inspection
Date	3/3/16
Author	Kinshuk Juneja, Jeremiah Murphy
Moderator	Michael Reed
Inspectors	Nadeem Mahmood,
Recorder	Jacob Richwine, Zhandos Suleimenov

Defect #	Description	Severity	How Corrected
1	Button images in activity home should be smaller than 50 kb	3	Reduce file size of images
2	Dimensions of the button images should not be more than 140 dp in width.	2	Reduced the width of the buttons to 140 dp
3	The buttons should be small enough to be contained in the layout container.	2	Set the margin of the left and right button

Product	Android App(Check-in,Out, Data, Refresh Tasks) Design Inspection
Date	3/3/16
Author	Jacob Richwine
Moderator	Zhandos Suleimenov
Inspectors	Nadeem Mahmood,Jeremiah Murphy
Recorder	Michael Reed

Defect #	Description	Severity	How Corrected
1	All tasks should be separate classes so we don't have multiple instances of the same code	3	Create new classes for tasks so they can be called from multiple activities
2	loadedBuilding Object needs to a static class in the application	1	Move loadedBuilding to be an object of the main BoilerCheck Class
3	Building Info should be automatically loaded after login instead of requiring another user input	2	Add getBuildingData route to be called after login
4	Instead of manually parsing the responseData, use library	2	add google's gson class to parse the json data into objects

Product	Persistent Login
Date	3/4/16
Author	Michael Reed
Moderator	Nadeem Mahmood
Inspectors	Jacob Richwine, Zhandos Suleimenov
Recorder	Kinshuk Juneja

Defect #	Description	Severity	How Corrected
1	The user did not remain authenticated with the node server	2	If there is a shared preference stored, call the login function like in the login activity
2	The node server getting a null value in the id field of error	2	Password was not correctly stored in the shared preferences. Created a new function for storing the password
3	The user is logged back in after starting the app again even though they logged out before they closed the app	2	Added clear method to SaveSharedPreference and call it on successful logout.

Code Inspection

Product	Android App Code Inspection(Checkin,out,refresh,data)
Date	3/3/2016
Author	Jacob Richwine
Moderator	Kinshuk Juneja
Inspectors	Nadeem Mahmood,Zhandos Suleimenov
Recorder	Michael Reed

Defect #	Description	Severity	How Corrected
1	Tons of debugging code still left in that is not needed anymore	3	Clean up old debugging loops for header and cookies in responseData
2	The response data is not in a valid JSON format and will not populate objects correctly	1	Add Braces to response data to turn it into a proper JSON object

Product	API Server Code Inspection(checkin, checkout, refresh, data insertion)
Date	3/3/2016
Author	Jacob Richwine
Moderator	Jeremiah Murphy
Inspectors	Kinshuk Juneja, Zhandos Suleimenov
Recorder	Michael Reed

Defect #	Description	Severity	How Corrected
1	buildingModel is included twice	3	remove extra reference to buildingModel
2	in passport.js, the userModel values for building are not initialized	2	set default values upon creation of a new user for the building values

Product	Location Services (GPS) Code Inspection
Date	3/2/2016
Author	Zhandos Suleimenov, Nadeem Mahmood
Moderator	Jeremiah Murphy
Inspectors	Jacob Richwine
Recorder	Kinshuk Juneja

Defect #	Description	Severity	How Corrected
1	App would crash when null was returned from nearestFunction method	1	Do a check of nearestFunction value to make sure it is not null before use
2	NearestFunction returning null when it shouldn't crashing the app	1	Set threshold for user to be within 5 meters of building, changed to 30 meters
3	Trying to sort the loadedBuilding list would crash the app	1	Format buildings correctly when getting them from database
4	Trying to check-in after a checkout crashes the app	1	Call onResume() function to reconnect to Google API to continue getting GPS coordinates

Product	Persistent Login
Date	3/4/16
Author	Michael Reed
Moderator	Jacob Richwine
Inspectors	Kinshuk Juneja, Nadeem Mahmood
Recorder	Zhandos Suleimenov

Defect #	Description	Severity	How Corrected
1	mAuthTask was used several times for several different tasks	3	Created different variables for the different class types

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
- (List View)Building Data
- (List View)Total Capacity
- (List View)Current Capacity

API Server Inputs:

- REST Calls (GET/POST) from Android Application (Login, Signup, Check-in, Check-Out, BuildingData, Logout, Refresh Capabilities)
- Header Data: (Username, Password, GPS Coordinates, Building)

API Server Outputs:

- Success or Failure Codes
- Session cookie on authentication
- Creating User in MongoDB
- Building Data
- Updated Capacities

GPS Location Service Inputs:

- Phone Coordinates(longitude, latitude)

GPS Location Service Outputs:

- Purdue Building Name

Product	Android App Activities/UI
Date	3/3/2016
Author	Entire Team

Defect #	Description	Severity	How Corrected
1	onPost Execute errors, and status messages are not being displayed correctly, or both being displayed	2	Reworked how messages are passed to onPostExecute, and added switch to handle multiple messages
2	App crashes when button images are loaded	1	Create a new drawable-nodpi folder for the button images(eat,work,play)
3	App is running out of memory due to use of images	1	Add largeheap:true flag to androidmanifest
4	Refresh capacity not working	1	class has to be made public before gson can convert json to that objec
5	checkOut not working correctly	1	Method call was of type POST instead of GET
6	Keyboard stayed displayed after logging in	2	remove softinputmode, from android manifest for the homeactivity
7	Buildings list not being separated by which button pressed	2	add extra to intent to tell list activity which buildings to display

Product	API Server
Date	3/2/2016
Author	Jacob Richwine

Defect #	Description	Severity	How Corrected
1	Server crashes on checkOut if user has not checkedIn	1	Add check for building==none in checkout function
2	Running server multiple times keeps inserting buildingData	1	remove previous building data on server startup
3	updateCapacity Function not updating building capacity	1	use building.save instead of buildingupdate
4	Checkin crashes server	1	Must refer to user.local.email, not user.email

Product	Location Services (GPS) Unit Testing
Date	3/4/2016
Author	Zhandos Suleimenov, Nadeem Mahmood

Defect #	Description	Severity	How Corrected
1	We were not able to check in to a location even though distance was close enough	2	Distance using two given coordinates was not calculated correctly. The order of latitude and longitude was reversed in our preloaded map of buildings. So we changed the order.
2	The longitude and latitude were 0.0 when accessing them	2	The client.connect() function was never called to connect to the Google API, called the function
3	Pressing check-in at a correct location would give not close enough error	2	Was comparing strings with == in conditional statement, changed to .equals() method
4	Name sort, sorts the list of buildings in descending order instead of ascending order	3	Edit comparator for name sort to compare first building to second, not second to first