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IOS & ANDRIOD

# Case Study: IoT Testing & Mobile App Testing for HoneyB

### **Summary of the Product:**

Objective of this application was to connect vendors (Street & Store) with the users within a certain radius distance in the service area. This application enables the user to track a Street vendor moment and also notify users when the vendors are near the Users Geo Fence.

### **Technology:**

Application is available in Android & IOS Version

Android: IDE – Android Studio

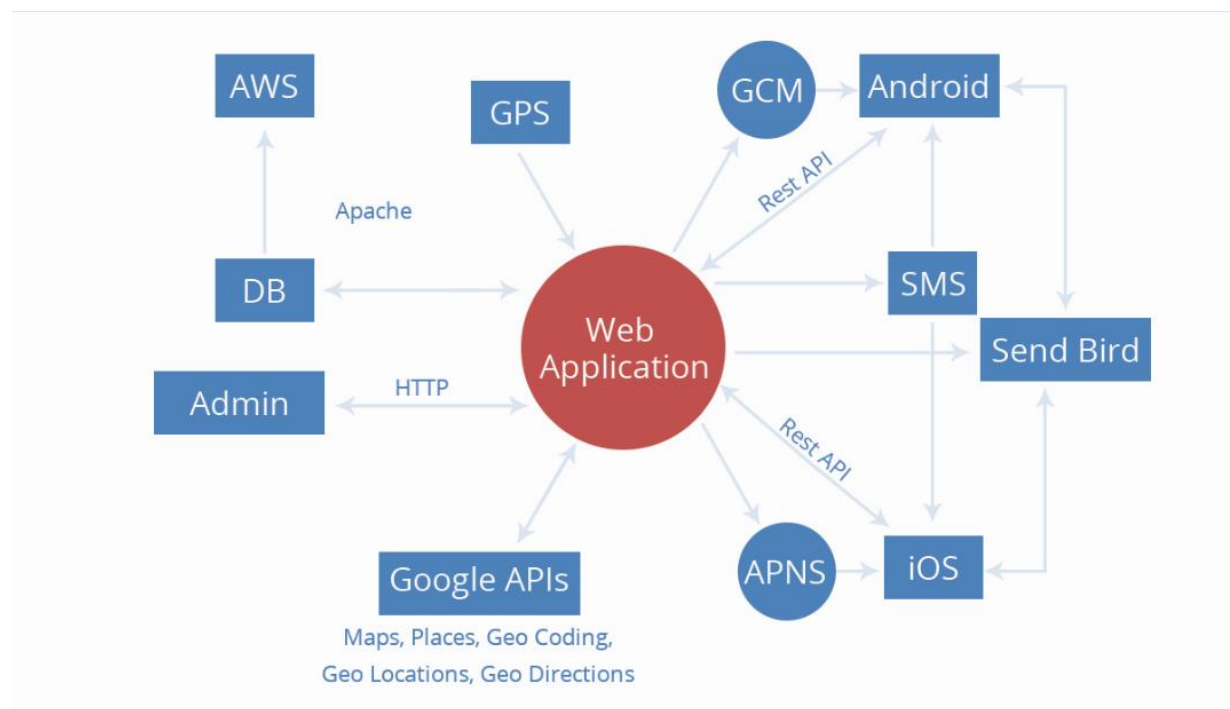
IOS: IDE – Xcode

Web Portal: PHP, RESTFUL APIs

Framework: Code Integer

Database: My Sql

### **HoneyB Architecture:**



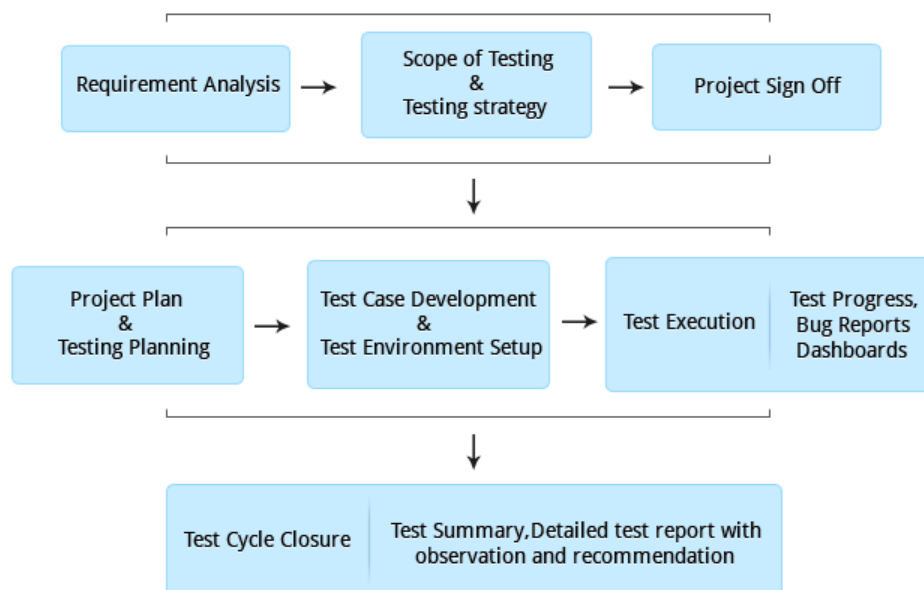
### **Business challenges:**

Objective of HoneyB application was to connect the street vendors with the users for which it was required that the users and vendors would need access to the application and also a way to track the vendor movement. Challenge was to enable Street to be tracked online of their movement without the use of Mobile application, which would require a street vendor to have a Smart Mobile in order to be

tracked. For this purpose a GPS tracker device had to be provided to the street vendors and there location had to be tracked using their longitude and Latitude values of their service area.

### **Technical challenges:**

- Constant changes to the requirement during the development phase
- Testing team had to constantly be in touch with the client and development team for requirement changes
- Feedback from testing team needed to be rapid and supportive to development team.
- Test scripts covered all new functions or features with deeper coverage and also keeping in mind the existing features.
- Testing team created all the data required for the feature testing
- Test Coverage focused towards :
  - Functional Testing (Android, iOS & Web Application)
  - GPS Device Testing
  - Web Application Testing
- Test Phases
  - Requirement Analysis Phase
  - Test planning and preparation phase
  - Execution phase
  - Stability test phase



## ➤ IoT / GPS Device Testing

Testing team had to thoroughly test the GPS device for various conditions that's needs to be satisfied in order to use the device by the vendors.

Functionalities that were tested using the devices are

- Vendor service area Longitude and Latitude value update
- Vendor Online & Offline notification by switching off & Switching on the GPS device
- User notification when the vendor is within the User's Geo Fence area.
- Distance updating of the vendor by moving around the Geo fence with the GPS in hand.
- Checking for Moving in and Moving out of Geo fence
- Database check for the updating of Long & Lat values of the Vendors with GPS

### IoT's – Different Test types

- **Compatibility testing** with the possible combination of device version, protocol version, mobile
- **Exploratory testing** to test from the user's perspective and beyond predefined test procedures.
- **Performance testing** that covers the rapidity of the communication network model, as well as the internal computation capabilities of the embedded software system.

### IoT's QA Complexity

#### Device Interaction Layer

- **Conformance with standards** - Device performance attributes that are specific to devices. Hardware Vendors perform most of these tests, but there are certain domain- or use-case-specific requirements that had to be tested.
- **Interoperability** - The ability of different devices to support the required functionality among themselves, other external devices and implementations.

#### User Interaction layer

- **The IoT services and back-end IoT environment:** While integration testing of the interfaces is key, there is a complex data layer that comes into play.
- **Usability and user experience:** Usability and user experience are important in terms of the real-time usability.
- **The IoT services and back-end IoT environment:** While integration testing of the interfaces is key, there is a complex data layer that comes into play.

➤ **Mobile App Functionality Testing**

Mobile application which was built for User and Vendor had to be tested by the testing team. Both the apps were available in Android & IOS versions, test cases were designed for the application and were tested against the builds.

- User Registrations
- User Geo Locations
- Vendors moving near the Users Geo Fence Location
- Available offers, Orders placed.
- User checking for vendors in other service areas
- Vendor Creating offers
- Vendor Going online & Offline
- Vendor ratings

➤ **Portal Registration Web Application Testing**

Vendors were registered into the system using a web application built. This Web app had various other features which needed to be tested. The web application was also needed to be tested for browser compatibility issues.

- Vendor registrations
- Vendor approvals
- Order approvals
- Vendor Service area updates.

➤ **Progress and Coverage:**

- Weekly Builds with new features implemented
- Test Cases Designed based on the User stories moved to development
- Test Cases Designed and updated in the test management tool
- All the Defects raised and assigned to developers using the Defect tracking tool.
- Daily QA status report summarizing the test execution summary, List of bugs raised and their Current status.
- Cross browser testing of the application in Web (IE, Chrome & FF) Android Mobile (Chrome, FF) IOS Mobile(Safari, Chrome)
- OS Compatibility testing On web( Windows, Mac), On Mobile Device(IOS, Android)

- Tests done on QA Environment.

➤ **Defect Reporting:**

- Log Defects into JIRA Defect Management Tool.
- Defect will be triaged by the triage team and then passed on to the developer for fixing
- All the Blocker defect to be communicated to client as and when the investigation is complete

➤ **Project Challenges Faced:**

- No Requirement Document for the new features, only one line user stories were created.
- Frequent changes to the requirements as per client needs
- Requirement understanding, clarifications, test case design, testing and reviews in span of a week
- GPS Device testing, Mobile app testing (IOS & Android Versions) & Web Application Testing had to be covered in a short span of time.

➤ **Highlights:**

- 650 plus feature test cases designed during the project tenure
- 600 plus various defects identified, fixed and retested.