Localization Functionality for MCM, a Mobile Commerce Application

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Background and Problem

MoneyClip Mobile (MCM) is a web-based payments infrastructure providing fee-free transactions to customers and merchants through the use of mobile devices. Dr. Joshua Cross of Hermes Commerce, Inc. is planning to make this mobile payment system more robust by providing targeted advertisements, coupons, and management of customer's loyalty programs.

moneyclipmobile

Our Solution

Our localization function provides the ability for MCM merchants to interact with their customer when they are in their vicinity, allowing for true **moneyless transactions**.

Directed advertisements and coupons based on the customer's location is also provided, based on the customer's location and their transaction history.

Figure 3: The left image shows an iPhone screenshot of the home page of the merchant app. The right image shows an Android screenshot of the merchant map page of the customer app.

Architecture

The localization functionalities are implemented on the Android, iOS, and website platforms.
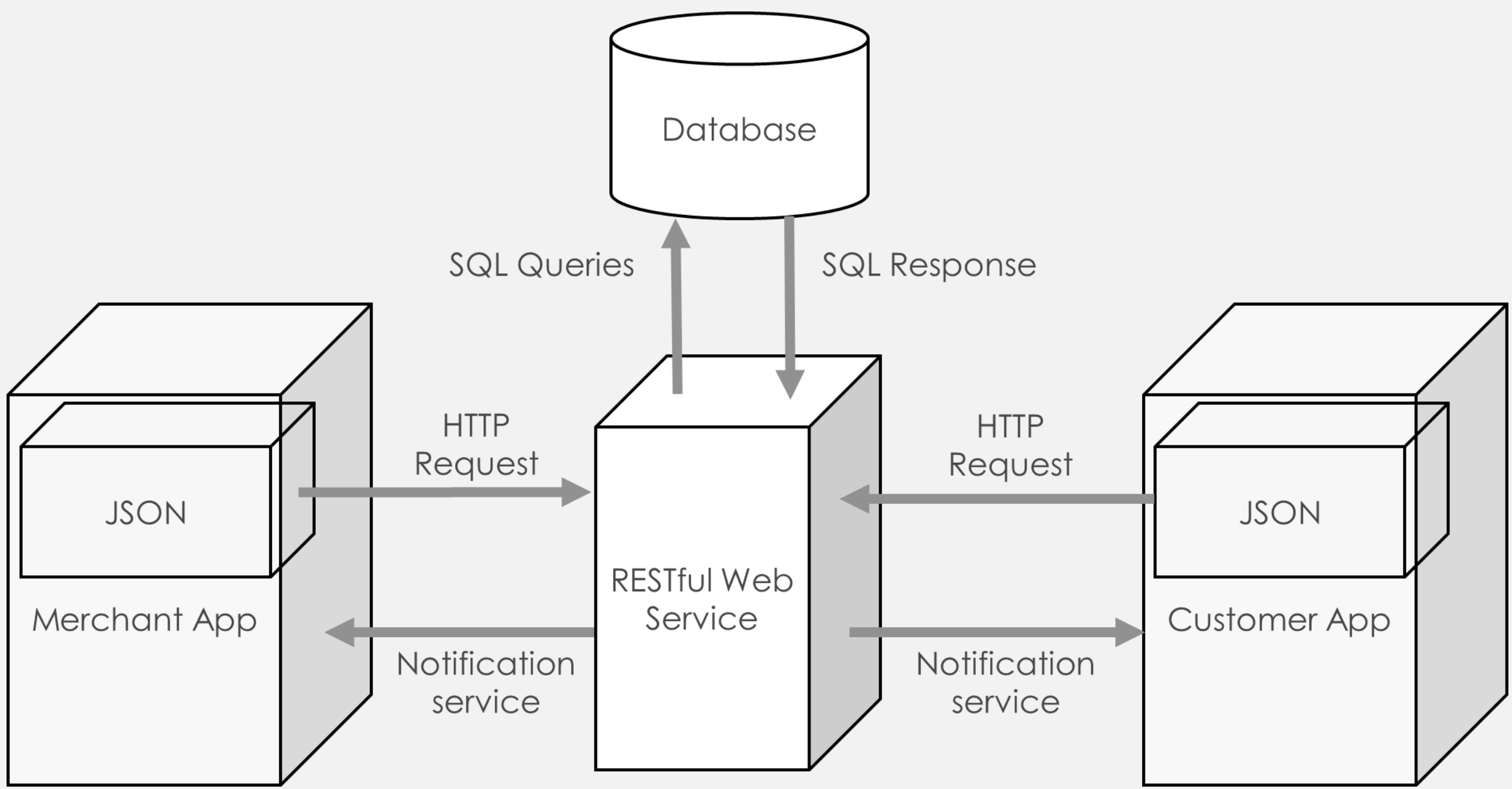

Figure 1: Architecture for the localization functionality between customer and merchant.
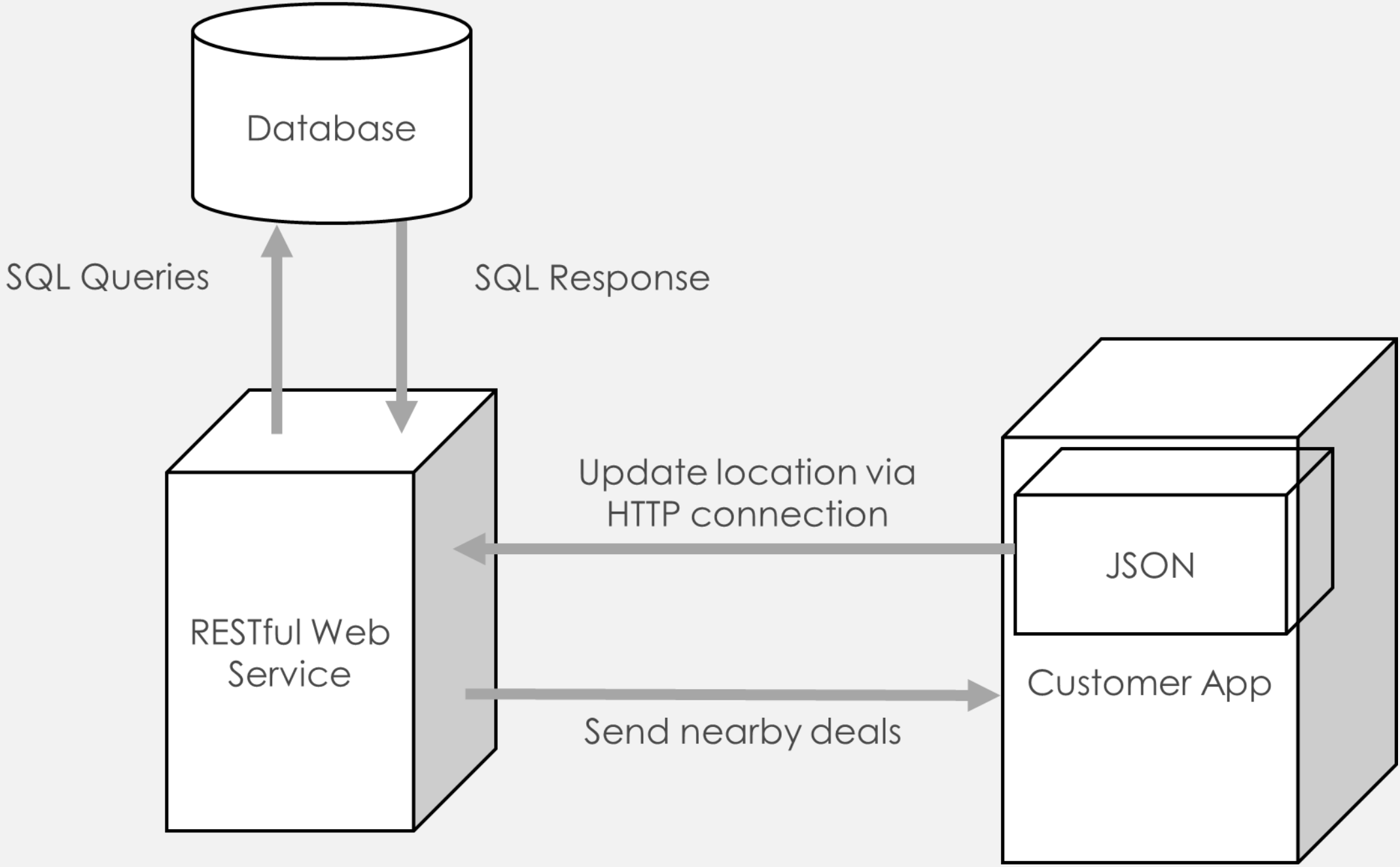

Figure 2: Architecture for the localization functionality of directed ads and coupons.

Testing

User Testing

Over 40 people from diverse groups were tested using three different versions of each app.

Common issues found were:
- Expected functionality for map page
- Shortcut/navigation
- Poor feedback for user
  - Error messages
  - Confirmation for important user actions
  - Explanation of empty lists

Unit Testing

The backend software was unit-tested for correct functionality. As individual functions were developed for the app, they were also manually tested.

Statistics

Table 1: Data transfer, in bytes, between the apps and the server. Data transferred depends on the length of the specific record.

Action	Android (KB)		iPhone (KB)	
	Receive	Transmit	Receive	Transmit
Log in	2.322	3.100	0.433	0.592
Merchant Map	1.942	1.912	1.804	1.703
Deals	3.328	1.002	1.692	0.571
Pay Charge	0.942	1.740	0.298	0.283
View History	2.070	0.872	4.226	0.570
Logout	0.000	0.000	0.000	0.000

Acknowledgments

Engineering Design