Advanced Software Engineering – Fall 2016
Phone Shopping Network 1.0

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Problem

As part of the "Lifeline Obama Phone" program more than 3 million smart phones are distributed to low income families. These phones can be a powerful media to reach the end users to

➢ Offer them great deals on necessities
➢ Provide flexible purchasing model that they could not get otherwise
➢ Help in establishing credit

This also could be a powerful tool for the distributor to generate revenue by

❖ Advertising products
❖ Selling products
❖ Commission from sells from phone

To combine these two ideas to establish a successful business model a software system is required.

Solution

❑ **Owner's point of view**

✓ We need an application for mobile phones capable of presenting Ads to the users
✓ That should guide the users towards successful purchase of the product
✓ That should manage a profile for more suitable offers
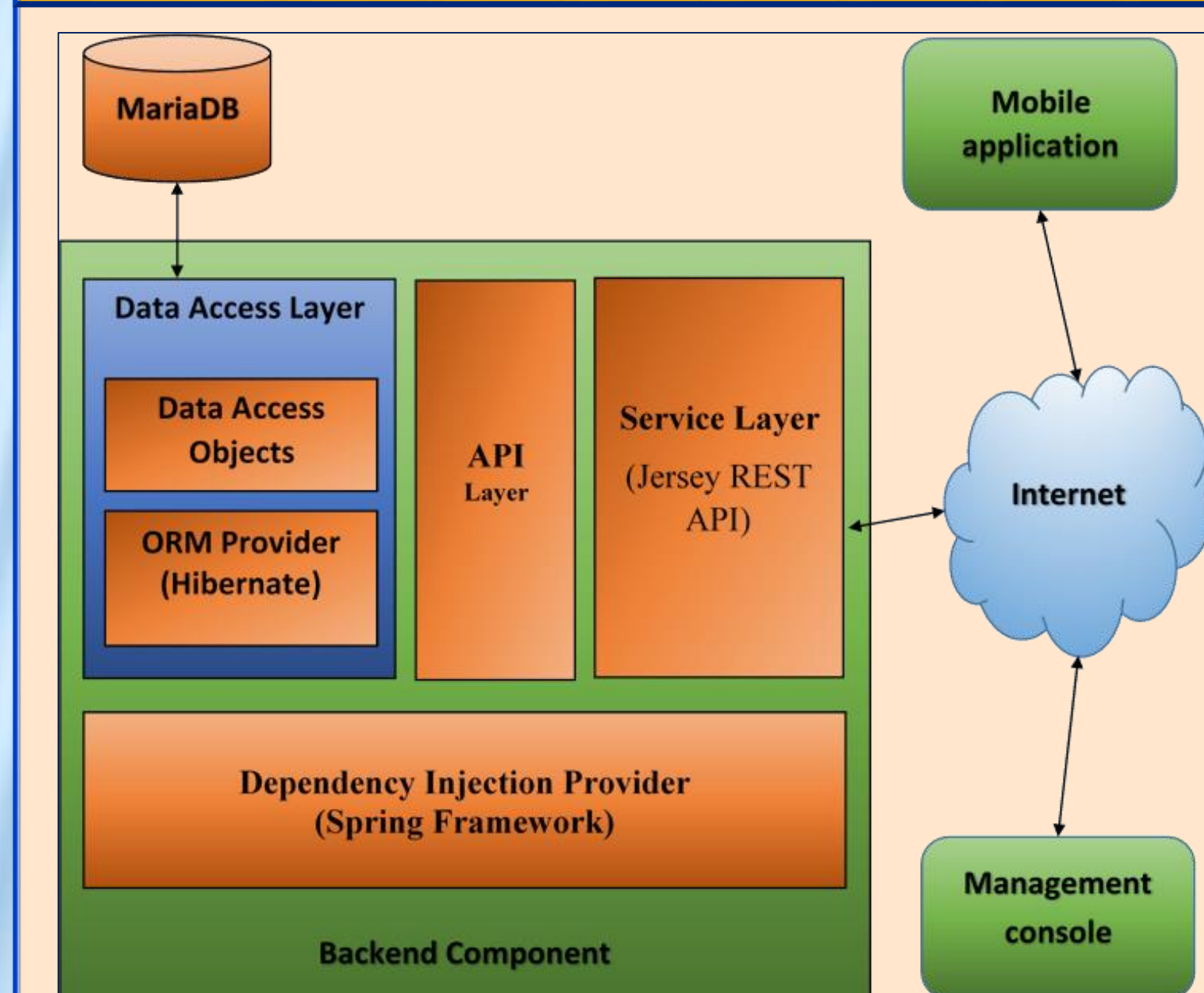
❑ **Solution provider's point of view**

✓ An android application to facilitate the interaction between the end user and the business model
✓ A management console for the service provider
✓ A back end application that serves as the engine to the model.

Requirements

The Ads of products will be pushed to the phones using another service named "Adups". Then the application in scope will do the following
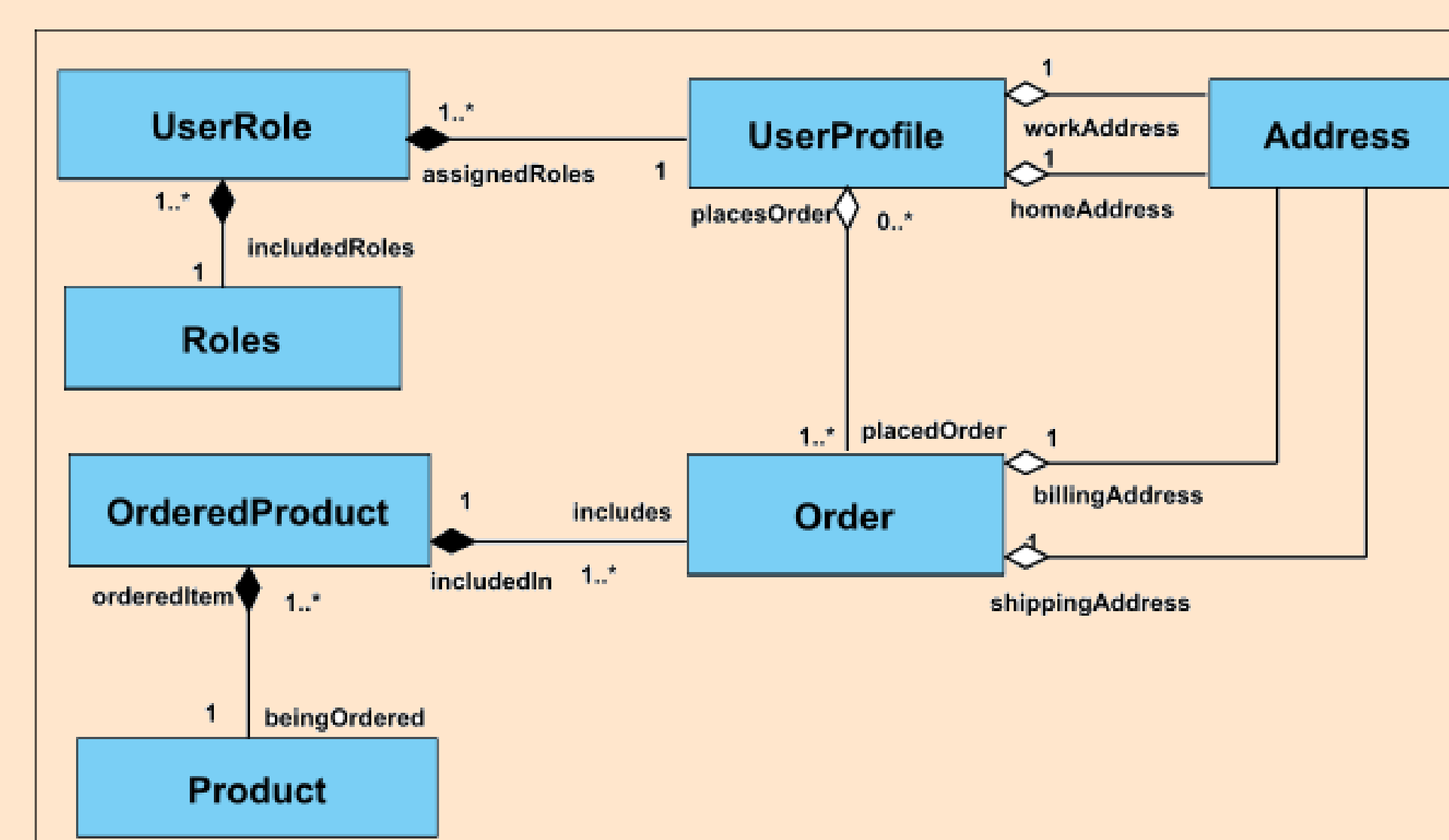
➢ Provide a way to interact with the Ads
➢ Show the terms and conditions of using the app to the first time users that they must conform
➢ Provide a way to register if the user is not registered
➢ Show the detailed information about the advertised product
➢ Provide a way to proceed to purchase
➢ Provide a notification about the payment options

System Design

❖ Primary architecture is **Server-Client**
▪ Internal components mostly follow MVC
❖ **Client side – MVC and MVVM**
▪ Android mobile application
▪ Web-based management console
❖ **Server side - Layered**
▪ REST Web-service endpoints
▪ API layer
▪ Business logic layer realizing the API
▪ Data Access Layer (JPA and Hibernate)
▪ Dependency Injection to connect layers
❖ **MariaDB database**

Object Design

Relationships among the major conceptual objects of the system
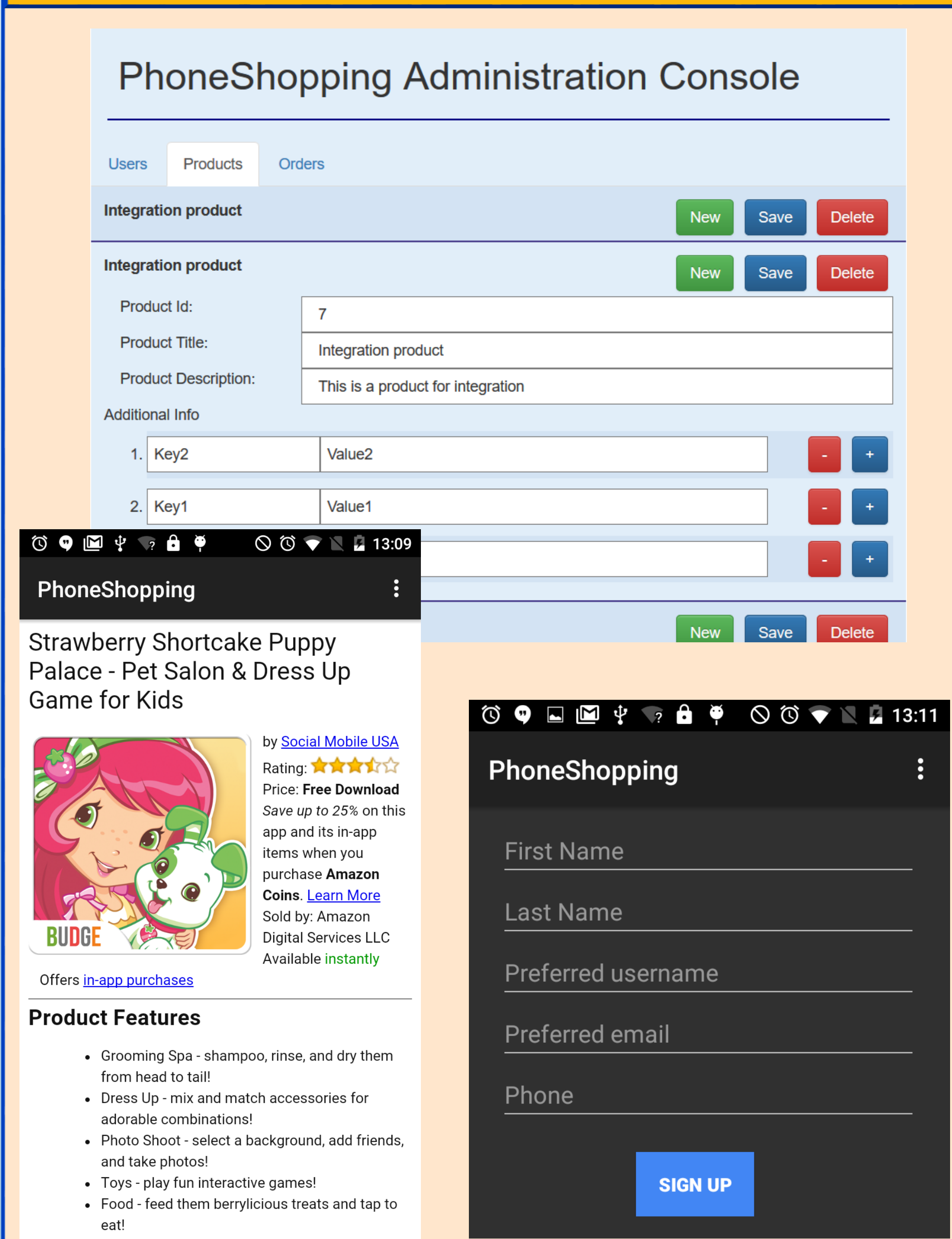
Verification

❑ **Test case 1 (Sunny day)**
➢ **Purpose:** To ensure that the user must conform the terms and conditions
➢ **Precondition:** The mobile app is launched for the first time
➢ **Expected Result:** The terms and conditions page is shown and the user must accept.
➢ **Actual Result:** The terms and conditions page is shown. The user must accept to proceed. If does not accept, the terms and conditions screen will be continued to be shown

❑ **Test case 2 (Rainy Day)**
➢ **Purpose:** To test if the user provides a unique "username" during registration.
➢ **Precondition:** The tester provides already existing username during registration and provides valid information to all other required fields
➢ **Expected Result:** The system fails to create a user for the provided username
➢ **Actual result:** The server application fails by raising an exception mentioning that a user is already present with the provided username.

Screenshots

PhoneShopping Administration Console

Users   Products   Orders

Integration product   New Save Delete

Integration product   New Save Delete

Product Id: 7
Product Title: Integration product
Product Description: This is a product for integration
Additional Info

1. Key2   Value2
2. Key1   Value1

New Save Delete

PhoneShopping

Strawberry Shortcake Puppy Palace - Pet Salon & Dress Up Game for Kids

by Social Mobile USA
Rating: ★★★☆☆
Price: Free Download
Save up to 25% on this app and its in-app items when you purchase Amazon Coins. Learn More
Sold by: Amazon Digital Services LLC
Available instantly

Offers in-app purchases

Product Features
• Grooming Spa - shampoo, rinse, and dry them from head to tail!
• Dress Up - mix and match accessories for adorable combinations!
• Photo Shoot - select a background, add friends, and take photos!
• Toys - play fun interactive games!
• Food - feed them berrylicious treats and tap to eat!

PhoneShopping

First Name
Last Name
Preferred username
Preferred email
Phone

SIGN UP

Implementation

HIBERNATE   spring by Pivotal   android   HTML   CSS
Jersey RESTful Web Services in Java.   Java   jQuery write less, do more.
Gradle   Maven   MariaDB   Knockout.
Apache Tomcat   amazon web services   Bootstrap

Tools, technologies and frameworks used in the implementation

Summary

The phone shopping network will enable a new horizon of opportunities for both the end users and the service providers. The end users i.e. the low income families can be able to get great offers of savings. At the same time the service providers of the life line program can be able to generate revenue from the phones that remains under utilized other wise.