

1.3.3 Iteration 2: Identifying Structures to Support Primary Functionality

During this iteration we are looking to provide more detail to our architecture that we developed in iteration one by making more specific decisions to our design.

1.3.3.1 Step 2: Establish Iteration Goal by Selecting Drivers

The goal for this iteration is to provide a more comprehensive architecture to our application - with a particular focus on making decisions that will help us satisfy CRN-3: appropriately dividing up tasks within the development team.

1.3.3.2 Step 3: Choose one or more Elements of the System to Refine

For this iteration we will focus on refining elements in our backend. More specifically we will be refining the login system, the payment processing system, user info, and product elements.

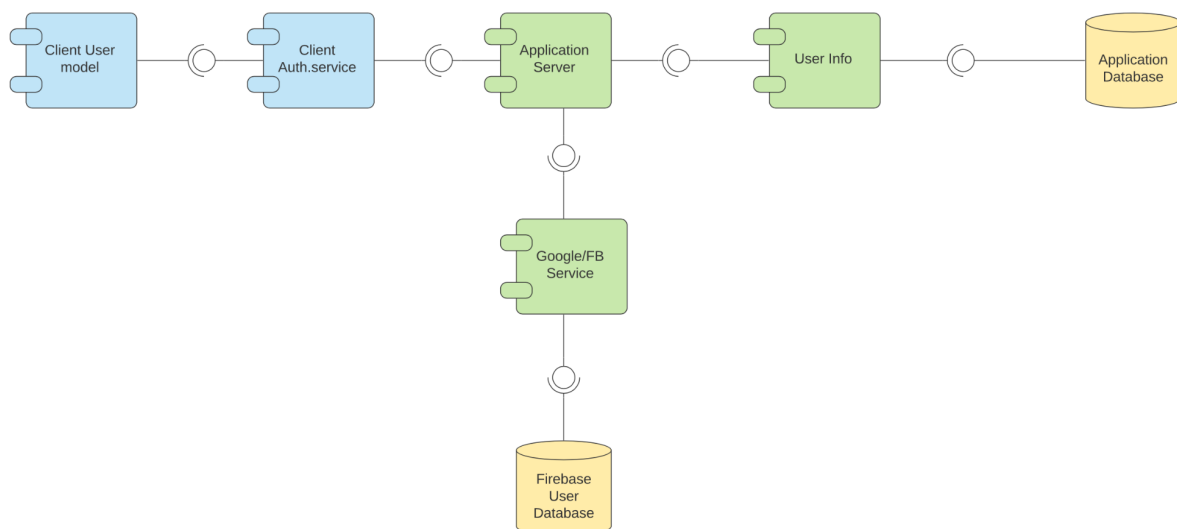
1.3.3.3 Step 4: Choose one or more design concepts that satisfy the selected drivers

Decision 1: Login System

| Design Decisions & Locations | Rationale |
|----------------------------------|--|
| Login System - Google & Facebook | We chose to only offer sign in through these methods because we believe that they are more secure than a login system that we build ourselves. We trust these brands to handle our authentication and sign up process because they have teams of engineers dedicated to the security of those accounts. They are fast, reliable and most importantly secure. |

| Alternatives | Reasons for Discarding |
|-----------------------|--|
| In-house login system | There are definitely advantages to a login system made in house. Cost is definitely the most prominent feature. It is much cheaper to build our own login system rather than using a third party system. However we chose against building our system due to the development time it would take as well as the added security headache that it would add to the project. Using a third party system removes the complexity that comes with building a login system from scratch as well shifting the security responsibility to the very capable hands of Google and Facebook. |

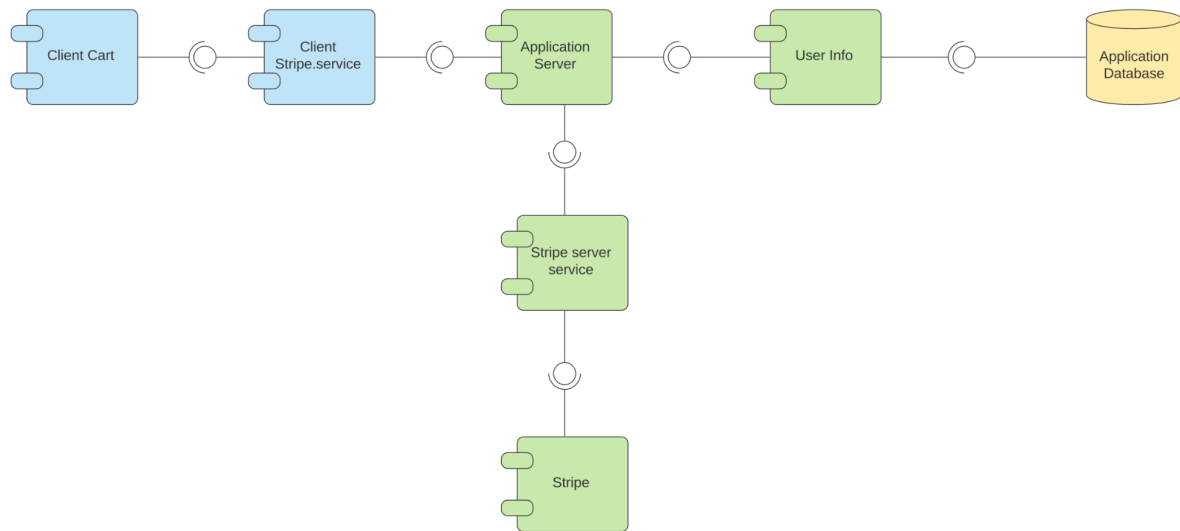
The login system we are using is managed through firebase. Firebase provides us with a table of users, their login method, and a UserID as a unique identifier. This identifier is a key piece of information that we will use in our application database.



Decision 2: Payment processing system

| Design Decisions & Locations | Rationale |
|------------------------------|---|
| Stripe payment service | <p>We decided to use Stripe as our payment service. This is because we believe that Stripe has a great service that is well documented and reliable. We are not looking to reinvent the wheel and create our own payment service. There is a lot of complexity that is associated with transactions that are handled securely and efficiently by stripe. They also have great and simple to use apis that will help speed up the development process greatly.</p> |

| Alternatives | Reasons for Discarding |
|--------------|---|
| Paypal | <p>We disregarded paypal for two reasons. First Stripe's apis are far superior in their ease of use and documentation.</p> <p>Second is that anyone with a credit card can use Stripe to pay. There is no need to make an account. This makes the payment process slightly easier in our opinion.</p> |



1.3.2.5 Step 5: Review iteration

The goal for this iteration was to refine components on our backend. We made significant progress in the design of our backend. We made major decisions in regards to the main systems that our application will use. However there is still much work to be done, specifically the database and the APIs still need to be designed. This will take at least one more iteration. However we are satisfied with the results of this iteration as it clears up a lot of the ambiguity regarding our backend infrastructure.