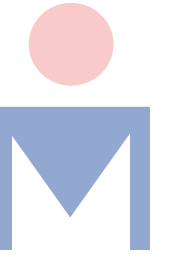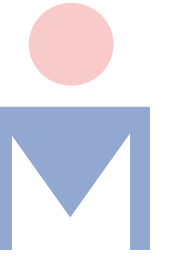Perigo

# Problem

1. Facebook Marketplace and sub groups like Free and For Sale are not great interfaces for buying and selling of used items

2. Other alternatives like Craigslist are outdated and don't work well within a tight knit community like USC
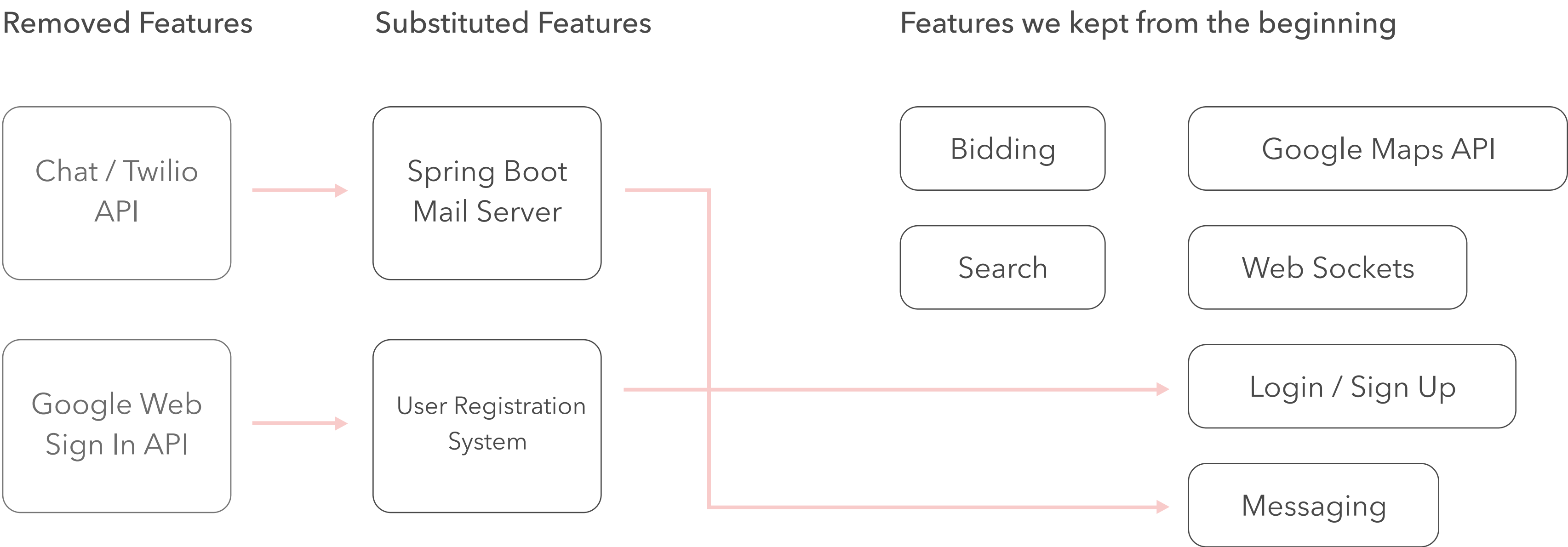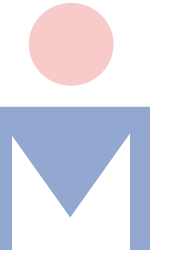
# Solution

Create an intuitive and easy to use web interface that allows members of the USC community to trade, sell, and buy goods from / with one another

# Design and Development Decisions

## Project Design

**Removed Features**

**Substituted Features**

**Features we kept from the beginning**

Chat / Twilio API → Spring Boot Mail Server

Google Web Sign In API → User Registration System

Bidding

Google Maps API

Search

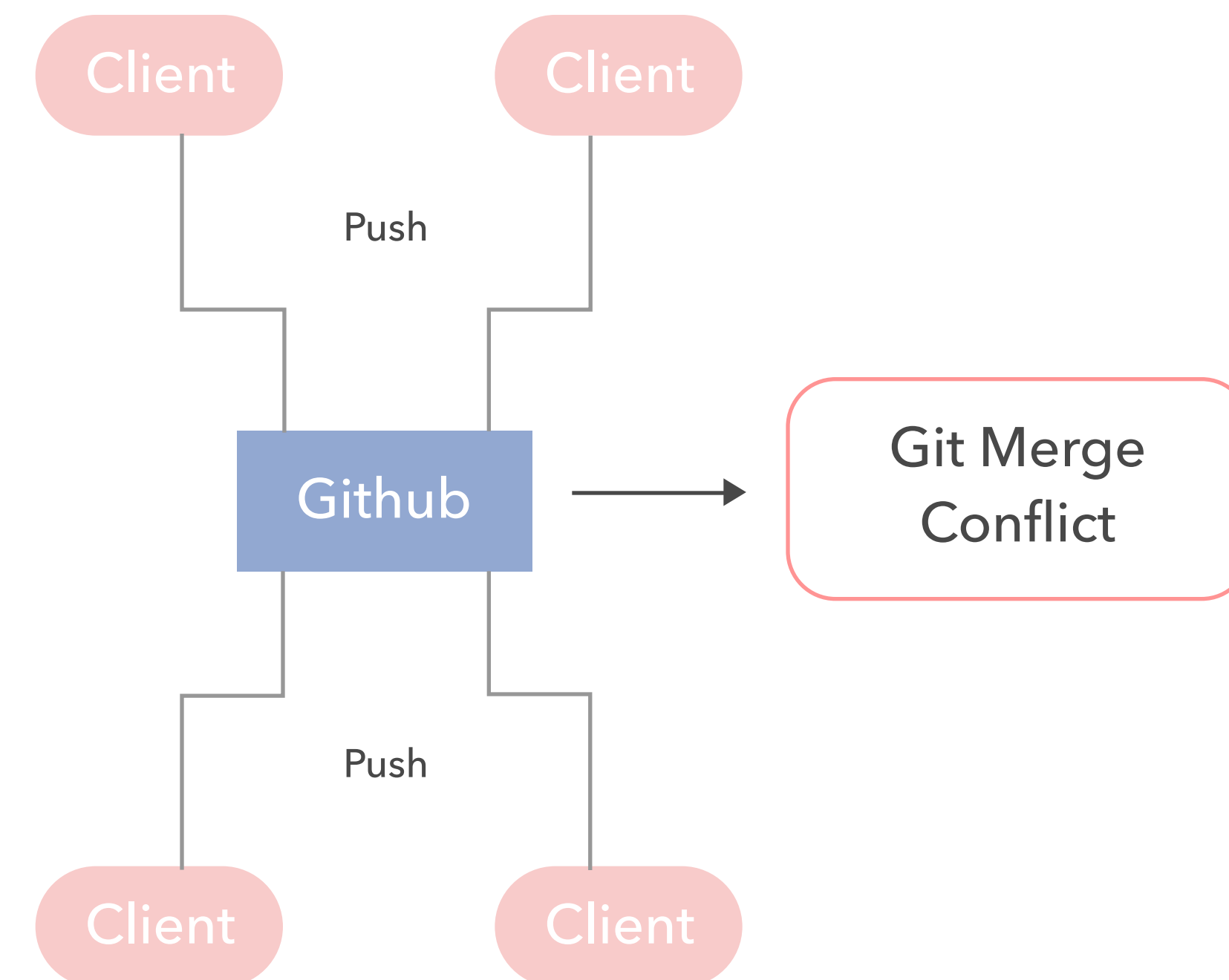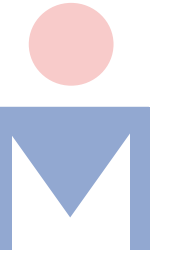Web Sockets

Login / Sign Up

Messaging

# Teamwork

## What worked

Coding as a Group
Half Frontend - Half Backend
Organizing the work on GitHub
Slack Channels

## What didn't work

Splitting the work
Version control, Merge Conflicts

Client                Client

Push

Github      →    Git Merge
                   Conflict

Push

Client                Client

# Outside Classes and Data Structures

Classes

Data Structures

| DES 323 (design theory) |

| CSCI 104 |

| GESM 111 (painting) |

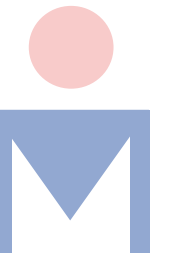| EE 250 |

| ITP 104 (web dev) |

Sets
Hashmaps
Lists
Queues
Multimap

# Multithreading and Networking
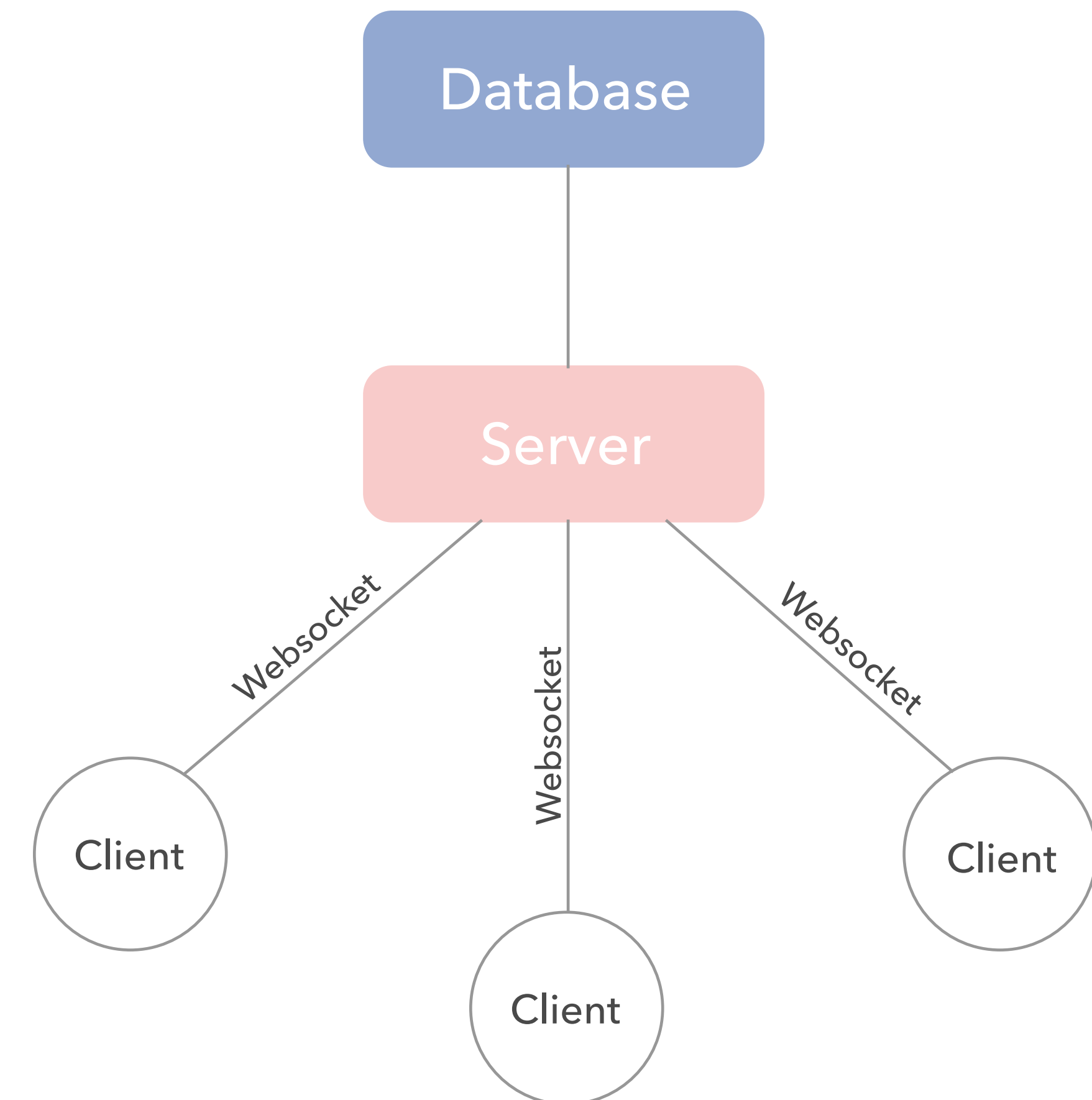
## Multiple threads
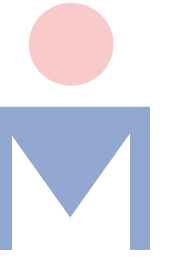
Asynchronous AJAX calls to backend

A thread loops through the database to check if any bidding
is expiring in 5 minutes or less

Another thread alerts users if any biddings are soon to expire

## Networking and WebSockets

New thread for every new logged in
user websocket connection

# Tools Used

## Software and Programs

Icon Design, Page Layout, Prototyping

## Outside Topics

Non-Relational Databases (mongoDB)
REST API
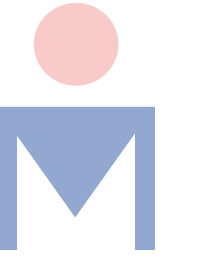Password Hashing
Cookies
Image Encoding
User Registration
Backend Web Frameworks

Testing AJAX, track merges, frontend / pair programming (teletype), communication

## APIs Used

Google Maps
Google Firebase

# User Login Functionality

| Functionality | Guest | Authenticated User |
|---|:---:|:---:|
| Viewing / Searching items | ✓ | ✓ |
| Bidding / Purchasing items | | ✓ |
| Listing an item | | ✓ |
| Adding item to saved list | | ✓ |
| Notifications on bid items | | ✓ |
| Messaging seller | | ✓ |