

## Introduction

The goal of our project is to provide an Android application that allows college students to sell and buy used textbooks online. The application will be similar to Craigslist but more powerful in terms of usability and user-friendliness. Our app has the ability to automatically populate book data using a barcode scanner, which can then be posted to our server for other users to view with a price attached.

## Motivation

We are seeing students paying high prices for their textbooks who then sell them back at a much lower price to bookstores or online retailers who then sell these textbooks back to other students at two or more times the buyback price. We think this is just plain wrong - that college students with no job or a part-time job carrying a stack of student loans and paying unreasonable price for their textbooks, so we wanted to develop a solution. The application will be completely free to use but does not handle payments between students.

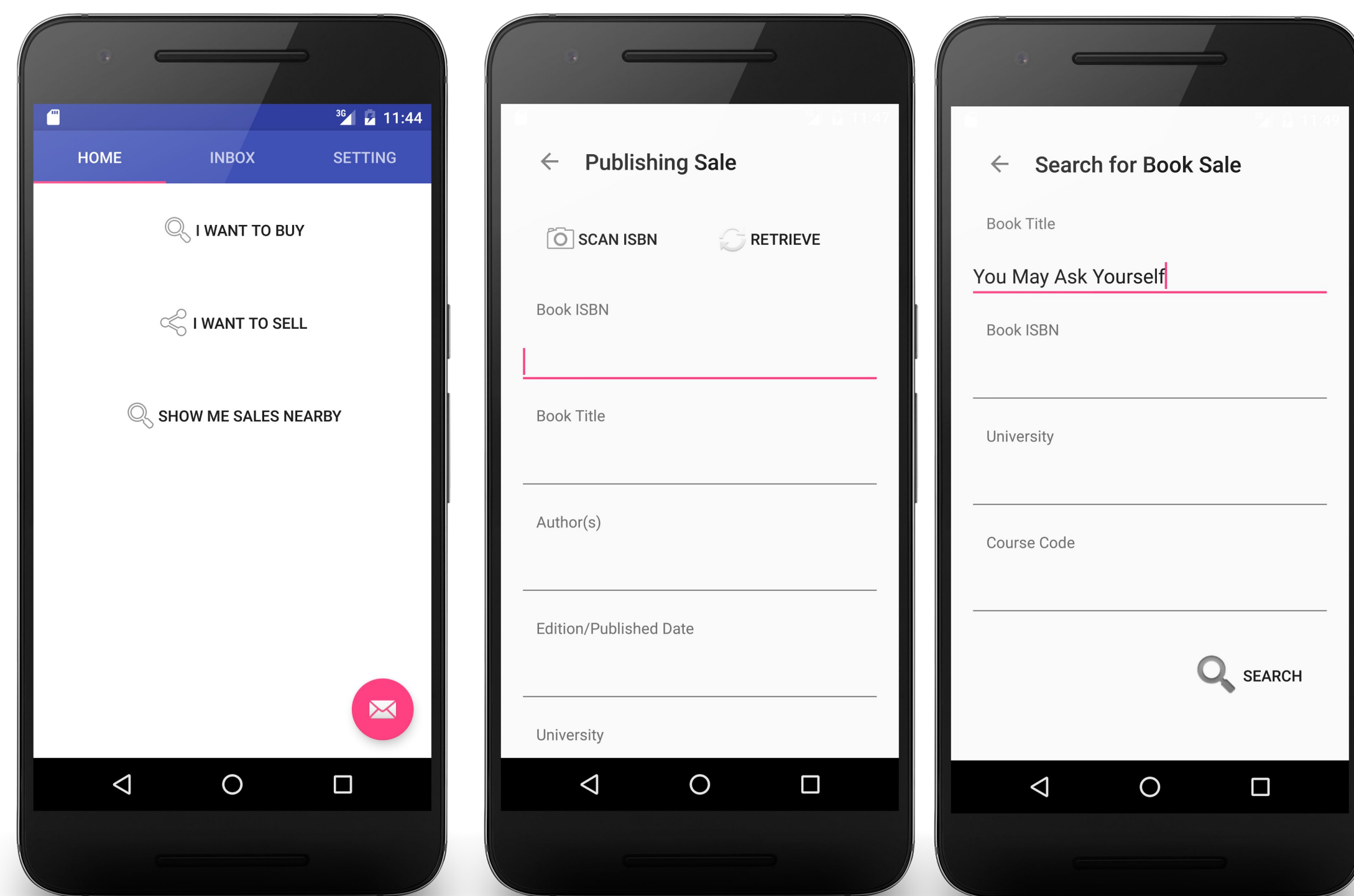


Figure 1. App Home Page Figure 2. Publishing Book Sale Figure 3. Search for a Book Sale

## Methods and Materials

The server is a combination of software - a MySQL database wrapped in a Python server. The server handles Google oAuth authentication for easy sign in for our users while maintaining security. It hosts a REST-style application programming interface which our app is able to use by passing commands over HTTP(S). It returns database results for the app to parse.

The client side is an Android application that can run on any Android device. A Bar Code Scanner API will be used to invoke device's camera to scanner book ISBN, which will then be used to query Google Books API for book data. Returned book data from Google Books will be then populated for publishing the Book sale. The client will ask the OS to access its geolocation data so when a sale is published, the server can remember its location which will be used when other users query the server for 'nearby sales' via Android client.

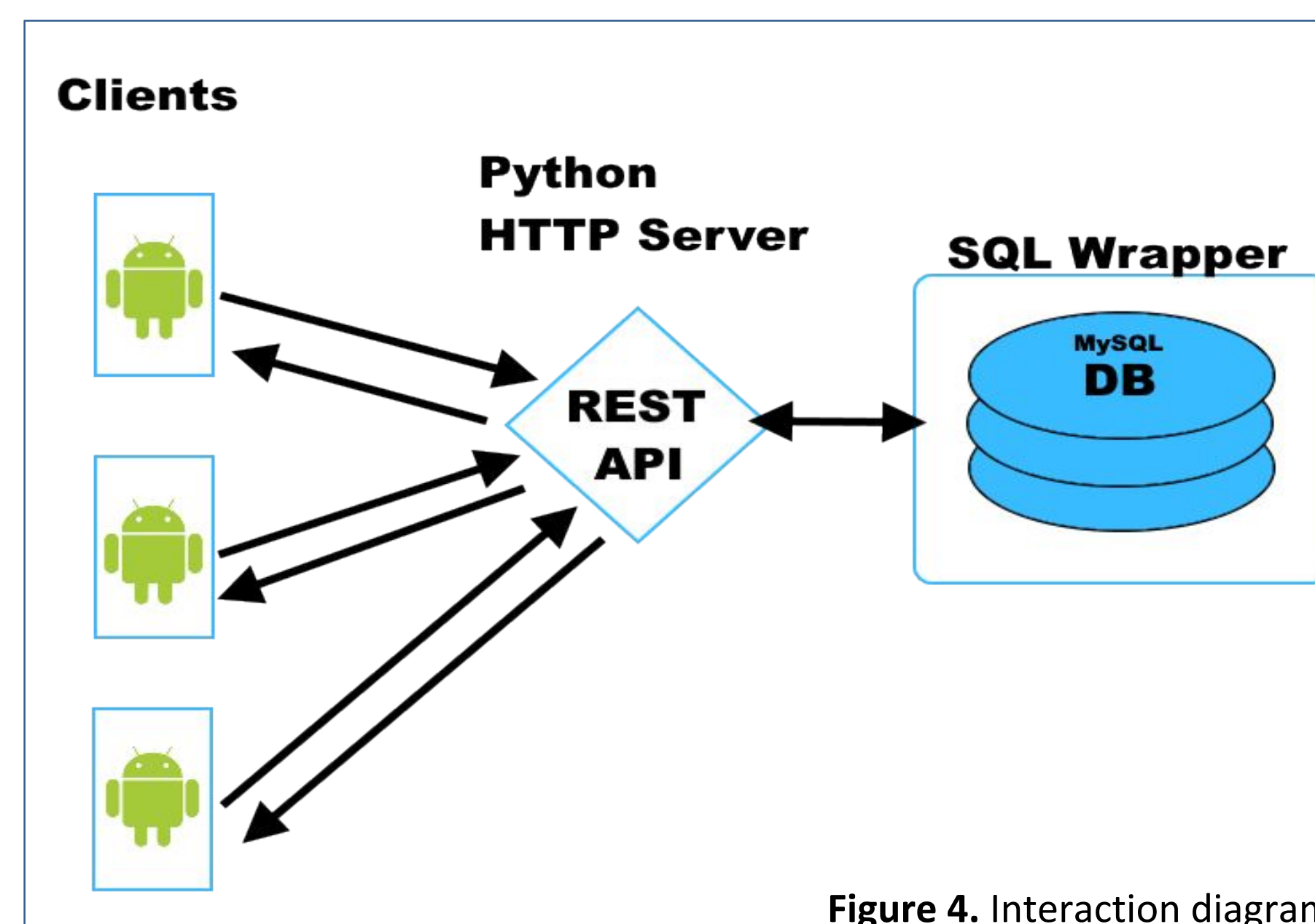


Figure 4. Interaction diagram

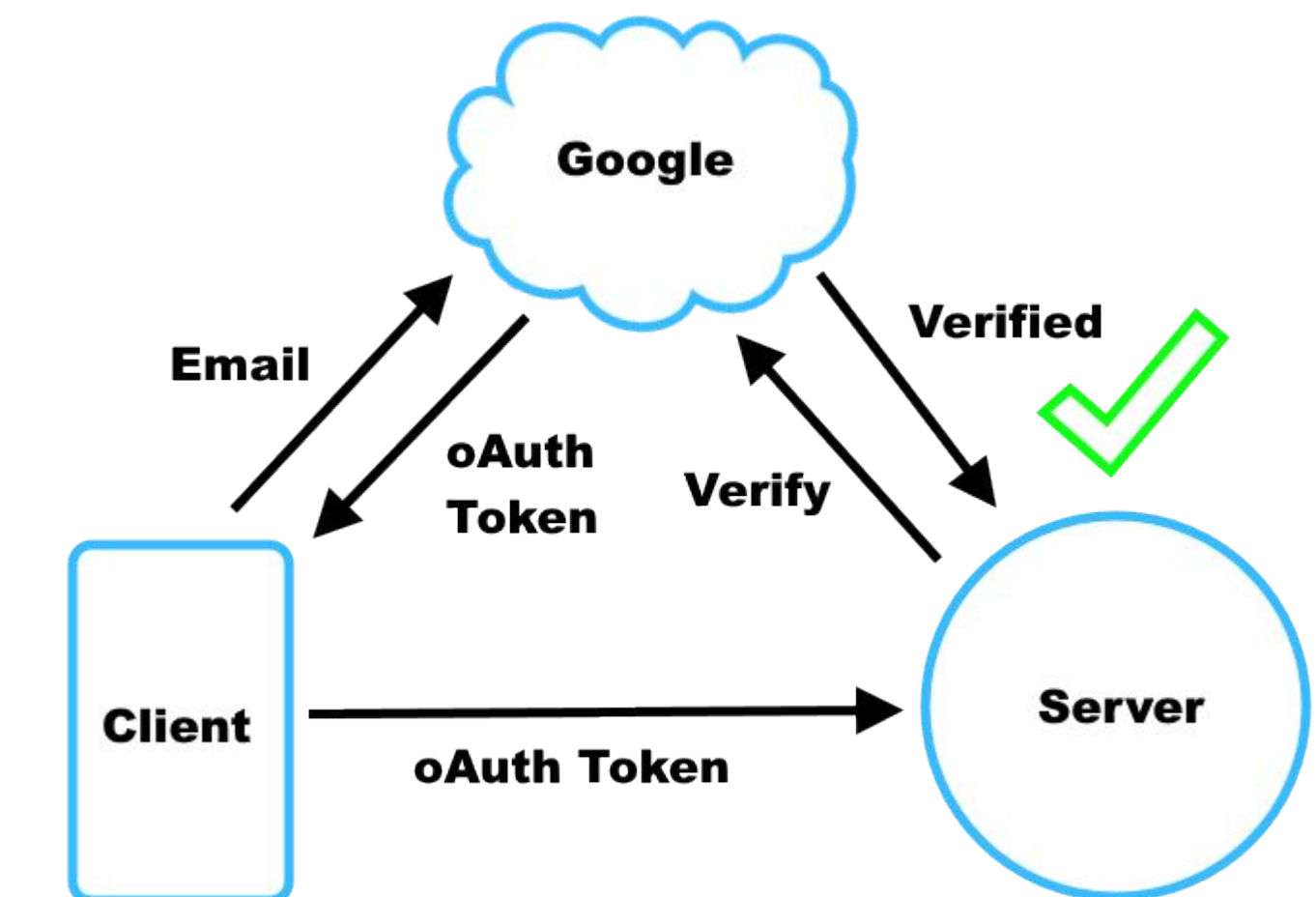


Figure 5. oAuth verification process

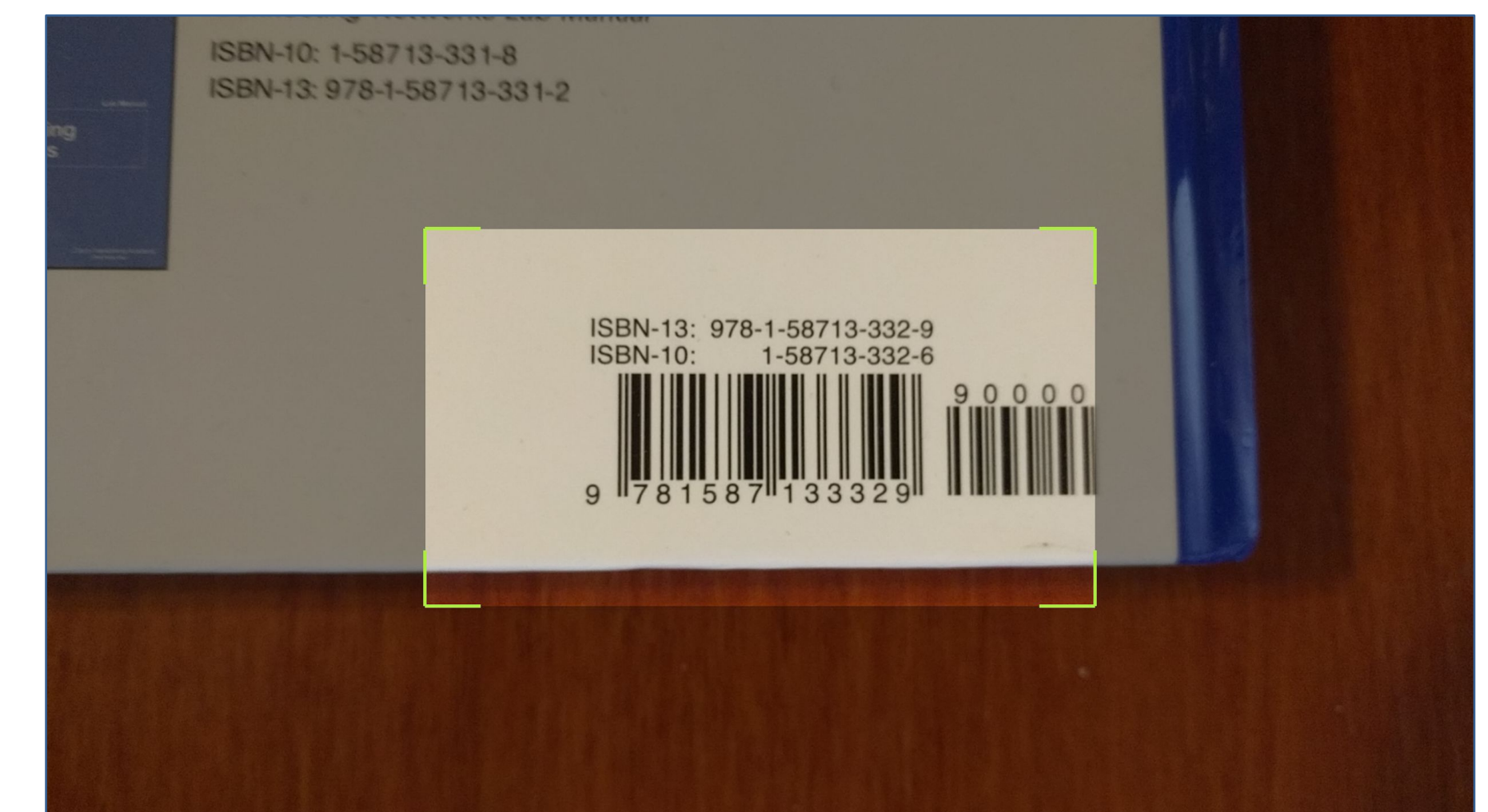


Figure 6. Barcode scanning

## Notes and Conclusions

This app has multiple features that make it easy for users to sign in, post sales, and browse books they might want to purchase. We hope that these features lead to widespread adoption among students if it is ever released. If our code is extended, we hope that it can also be used to write better server applications that use Python and MySQL.

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