

Sprout Exchange

Naiem Gafar
Software Engineering (370)
Fall 2020

A website that connects
gardeners with **patrons** that
can **contribute** to their
garden in exchange for a
share of the **produce**.

Community Garden

- Individuals gather around a common cause of **tending** to the land and **producing** fruits and vegetables.
 - At harvest time, produce is **shared** among all contributors.
- **Limitations**
 - Locational
 - Gardeners must live **near** their garden to benefit from it.
 - Lack of space
 - Cities are **concrete jungles**.
 - Apartments have **no yard space**.



Homeowners

- A lot of yard space that is **not being used**
- Its just sitting there
- Not making the owner any money



Why not give those homeowners the opportunity to **pursue gardening**, while at the same time producing **fresh produce** and even making a **profit** from it?

Requirements Engineering

- Interviews with:
 - Hobbyist gardeners
 - Individuals who desire to garden but don't have the means
 - Homeowners with available yard space
- Looking at **crowdfunding websites** for inspiration
 - How have they done it?
 - What functionality do they have that I could borrow from or do differently based on my own idea?



Model View Controller Architecture

- **Model – view – controller** architectural pattern
 - Works well for website & several views that need to be handled.
 - Lots of different views for different database items.
 - Django Framework heavily embraces MVC.
- Why **Django**?
 - Previous Experience
 - Separation & Independence among different “apps” within the architecture
 - Scalability
 - Built in user authorization & security features
 - Reliability

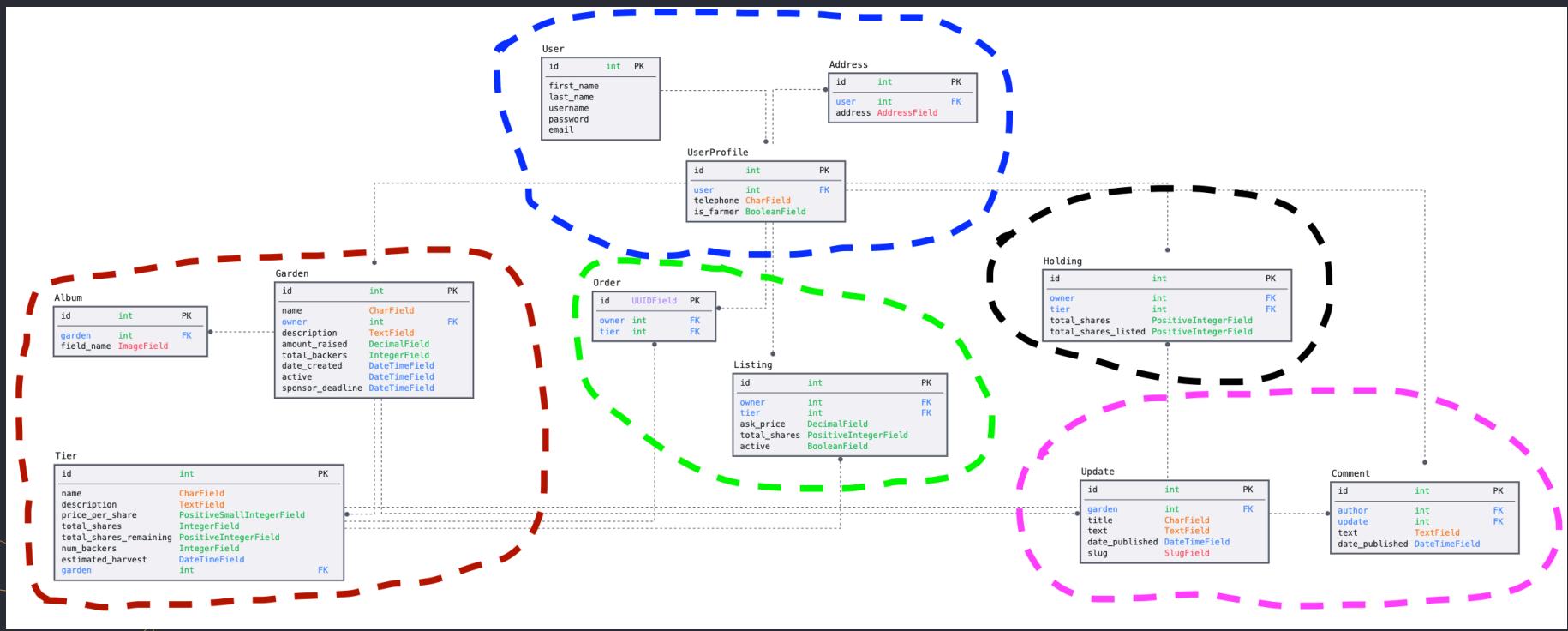


Subsystems

- Gardens
 - Creation & management of gardens
- Exchange / Transactions
 - Gardener to Patron
 - Patron to Patron
 - Payment & Receipts
- User Auth
 - Authorization & Authentication
 - Login, Logout, Accounts
 - Security
- Communication
 - Interaction between different users
 - Messages
 - Updates/Comments
- Portfolio
 - Patron managing their assets

**INTERSYSTEM
COMMUNICATION**

Overall Database Design & Subsystem Boundaries



Design Choices

- CRUD Operations tied into URL Structure
 - Create
 - Read
 - Update
 - Delete
- Using external APIs to take care of certain functionality
 - Google Maps API to validate addresses
 - Stripe API to validate payments
 - Bootstrap CDN to format the page & make it mobile friendly

Error Checking & Validation of Input

Sprout Exchange [Login](#) [Register](#)

The username and/or password is incorrect.

SPROUT EXCHANGE



Username

Password

Register

Username*

Required. 150 characters or more only.

! Please fill out this field.

First name

Sponsor deadline*

mm/dd/yyyy

! Please fill out this field.

Price per share*

-1

Total shares*

! Value must be greater than or equal to 0.

Address*

30

- 300 Community Drive Manhasset, NY, USA
- 30 Rockefeller Plaza New York, NY, USA
- 305 Federal Circle Queens, NY, USA
- 300 Cadman Plaza West Brooklyn, NY, USA
- 300 Mercer Street New York, NY, USA

powered by Google

Register

- Password do not match

Username*

JohnDoe

You must choose a harvest date more than 50 days after May 13, 2021, midnight!

Name*

Bushel of Apples

Description*

The quick, brown fox jumps over a lazy dog. DJs flock by when MTV ax quiz prog. Junk MTV quiz graced by fox whelps. Bawds jog, flick quartz, vex nymphs. Waltz bad nymph, for quick jigs vex! Fox nymphs grab quick-jived waltz. Brick quiz whangs iumpy veldt fox. Bright vixens iump: dozy fowl

This tier has 1 backer & cannot be deleted!

GARDEN

Italian H

Order too large, only shares available for purchase

How many shares would you like to purchase?*

You must choose a deadline that is 30 or more days away!

Name*

Italian Herb Garden

Description*

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et magnis

Implementation

- Mostly uneventful
- Decisions made earlier on were not as well thought out as imagined
- Project scope a bit too large for 1 person!
 - Would have benefited from working on a team
 - Lack of code review and having a different set of eyes
- Also, plan based locks you into constructs that may not be as beneficial down the road

Login Page

Sprout Exchange [Login](#) [Register](#)

SPROUT EXCHANGE



Patrons can contribute to a garden in exchange for
a share of the produce.

[Log in](#)

Don't have an account? [Register](#)

Gardener Dashboard

Sprout Exchange | GARDENER [Dashboard](#) [New Garden](#) [Logout](#)

Welcome, John Doe!

Taste South America

\$200.00 raised

2 backers

[View
Garden](#)

[Update
Garden](#)

[Update
Patrons](#)

[Delete
Garden](#)

Russian Vegetables

\$75.00 raised

2 backers

[View
Garden](#)

[Update
Garden](#)

[Update
Patrons](#)

[Delete
Garden](#)

Indian Spice Garden

Garden Profile Page

Sprout Exchange | GARDENER Dashboard New Garden Logout



GARDEN

Taste South America

Brooklyn, New York

Campaign Ends in 2 months, 3 weeks
from now

\$200.00 raised
2 backers

[Upload Image](#)

[Sponsor](#)

[Share](#)

About this Garden

Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin words, *consectetur*, from a Lorem Ipsum passage, and going through the cites of the word in classical literature, discovered the undoubtable source. Lorem Ipsum comes from sections 1.10.32 and 1.10.33 of "de Finibus Bonorum et Malorum" (The Extremes of Good and Evil) by Cicero, written in 45 BC.

Garden Share Options

Buy Shares

[Create New Tier](#)

Tier	Price/Share	Remaining	Est. Delivery	
Bushel	\$10	25	June 2021	  
Basket	\$40	8	July 2021	  

Patron Dashboard

Sprout Exchange | PATRON [Dashboard](#) [Logout](#)

Welcome, Tommy Lane!

Taste South America
Bushel

8 shares
0 listed
September 2021 harvest

[View Garden](#)[List Shares](#)

Russian Vegetables
Basket

5 shares
0 listed
October 2021 harvest

[View Garden](#)[List Shares](#)

Total Assets : \$675.00

Recent Transactions

Transaction Number	Date	Garden	Amount
760662bd-fdba-4e87-ac2f-eb1c92c21aa4	Dec. 6, 2020, 5:37 p.m.	Taste South America	\$100.00
b01e87fe-03f5-4125-9d52-52771fed5eb6	Dec. 6, 2020, 5:41 p.m.	Taste South America	\$100.00
32329174-e2e2-4f47-83bc-60ba1c0d1853	Dec. 6, 2020, 6:36 p.m.	Russian Vegetables	\$45.00
3a531056-46a0-4039-830c-927141007	Dec. 6, 2020, 6:43 p.m.	Taste South America	\$100.00

All Listings

Sprout Exchange | PATRON Dashboard Logout

New Listings

Direct Purchase From Garden

Basket - Russian Vegetables

\$15/share

5 remaining ...

[View Garden](#)[Buy it Now](#)

Bushel of Apples -

\$100/share

3 remaining ...

[View Garden](#)[Buy it Now](#)

Bushel of Apples - Italian Herb Garden

\$100/share

1 remaining ...

[View Garden](#)[Buy it Now](#)

Post Mortem

- What went right?
 - Well defined requirements
 - Infrastructure present to create a REST API
 - Maybe even a mobile application
 - Branch off to other technologies
- Improvements
 - Some design decisions may need to be revisited to allow for faster load times
 - After the user load passes some large amount, queries may get too large to serve up all at once
 - Spend more time on UI design to make it look nicer and more intuitive to users
 - But the functionality is there in the MVP