

Wesley Leon, Lucas Zheng, Sopiha Chi, Eviss Wu

Yakubian Matrix

Design Document

Target Ship Date: 2026-01-16

## **OVERVIEW:**

Our project will be a simple farming incremental simulation game using text, including farming tools and crops.

## **FEF: Tailwind:**

Chosen for the team's prior experience and ease of use. We plan on using features like its transitions & animation, boxes, borders, and hover/focus/active state.

## **APIs:**

APIFarmer: Has information on several plant species. We will use this to get the plant data.

## COMPONENT MAP:

init.py:

Configures the Flask app and handles routing, sessions, and user actions.

build\_db.py:

Builds the database and populates it with crop and tool data from APIs.

data.db:

SQLite database storing users, crops, tools, and progress.

home.html:

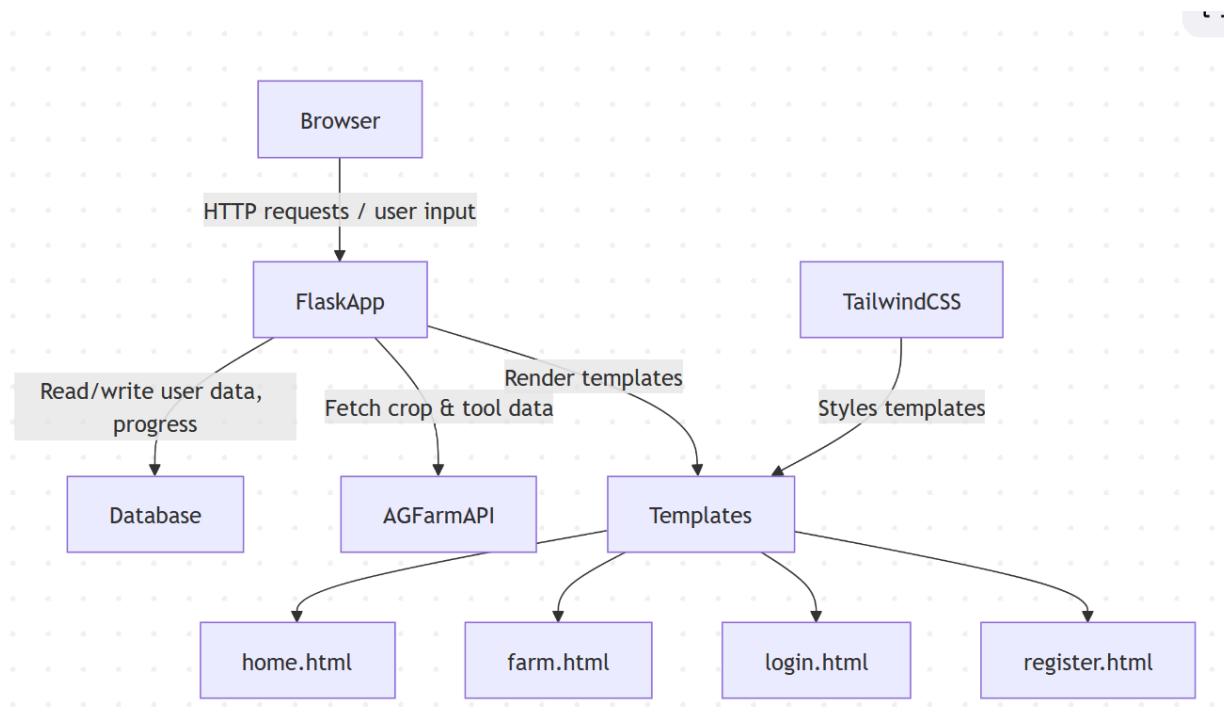
Main hub page linking to the farming game and displaying user progress.

farm.html:

The text-based incremental farming game interface.

login.html & register.html:

User authentication pages.



## SITE MAP:

Login:

All pages should be able to go to Login. Login sends the user back to the previous page.

Create Account:

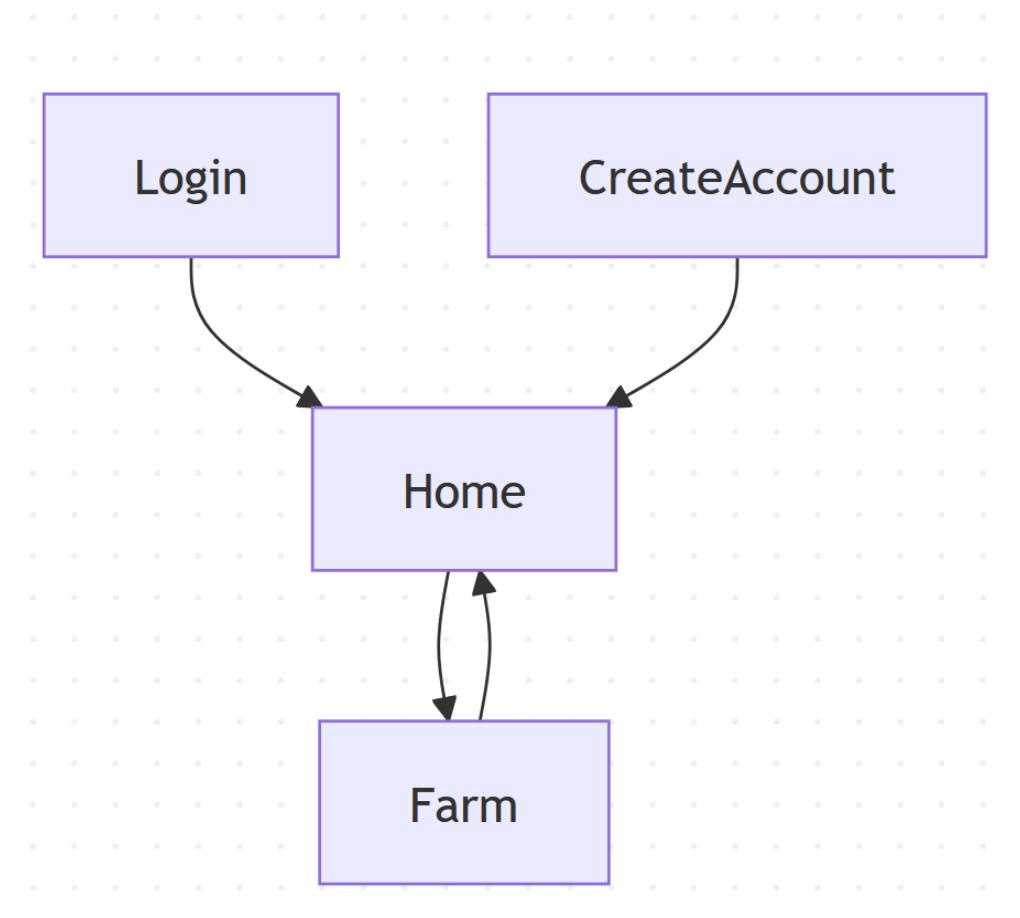
For creating an account if you don't already have one. Only routes from Login.

Home:

Main page of the site. Routes to the farming game.

Farm:

The text-based incremental farming game. Routes back to Home.



## DATABASE MAP:

### Users

user\_id  
 username  
 password\_hash

### Crops

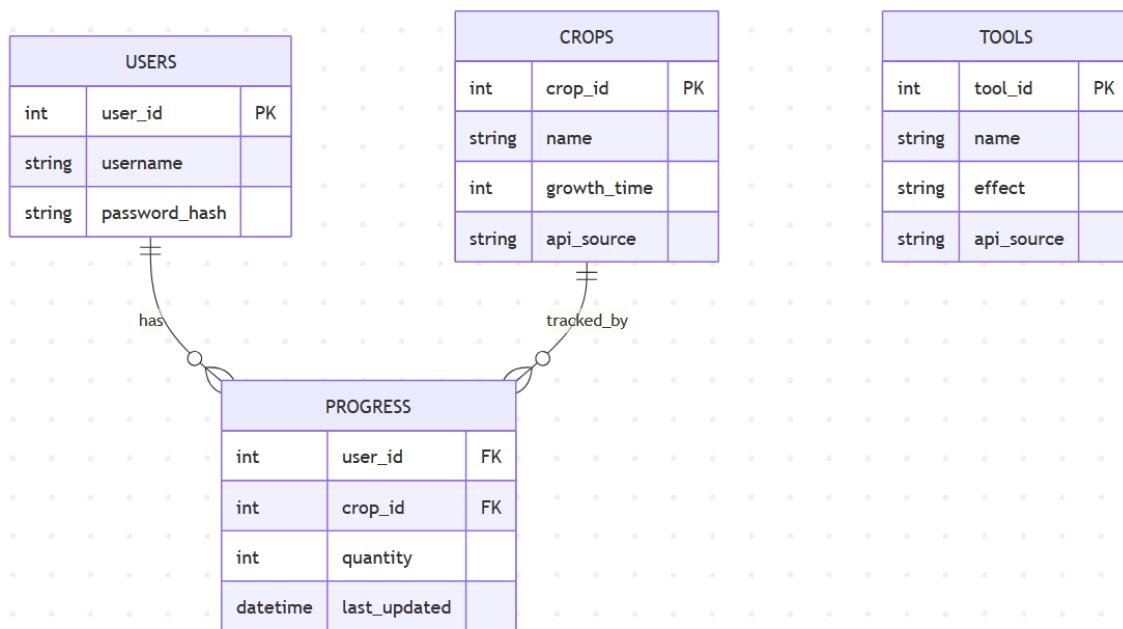
crop\_id  
 name  
 growth\_time  
 api\_source

### Tools

tool\_id  
 name  
 effect  
 api\_source

### Progress

user\_id  
 crop\_id  
 quantity  
 last\_updated



## **Tasks:**

Project Manager (Wesley):

Manages timeline and coordination.

Implements login and authentication system.

Creates Home page and user progress display.

Developer 2 (Lucas):

Implements text-based incremental farming logic.

Handles crop growth, timers, and updates.

Developer 3 (Eviss):

Handles API requests and database population.

Integrates crop and tool data into gameplay.

Developer 4 (Sophia):

Implements Tailwind CSS styling.

Improves layout, transitions, and overall UI consistency.