



GateMate

Remote Rice Farming

Jackson Bullard, Nathaniel Fredricks, Jose
Martinez, Carissa Patton, Ivris Raymond



Problem

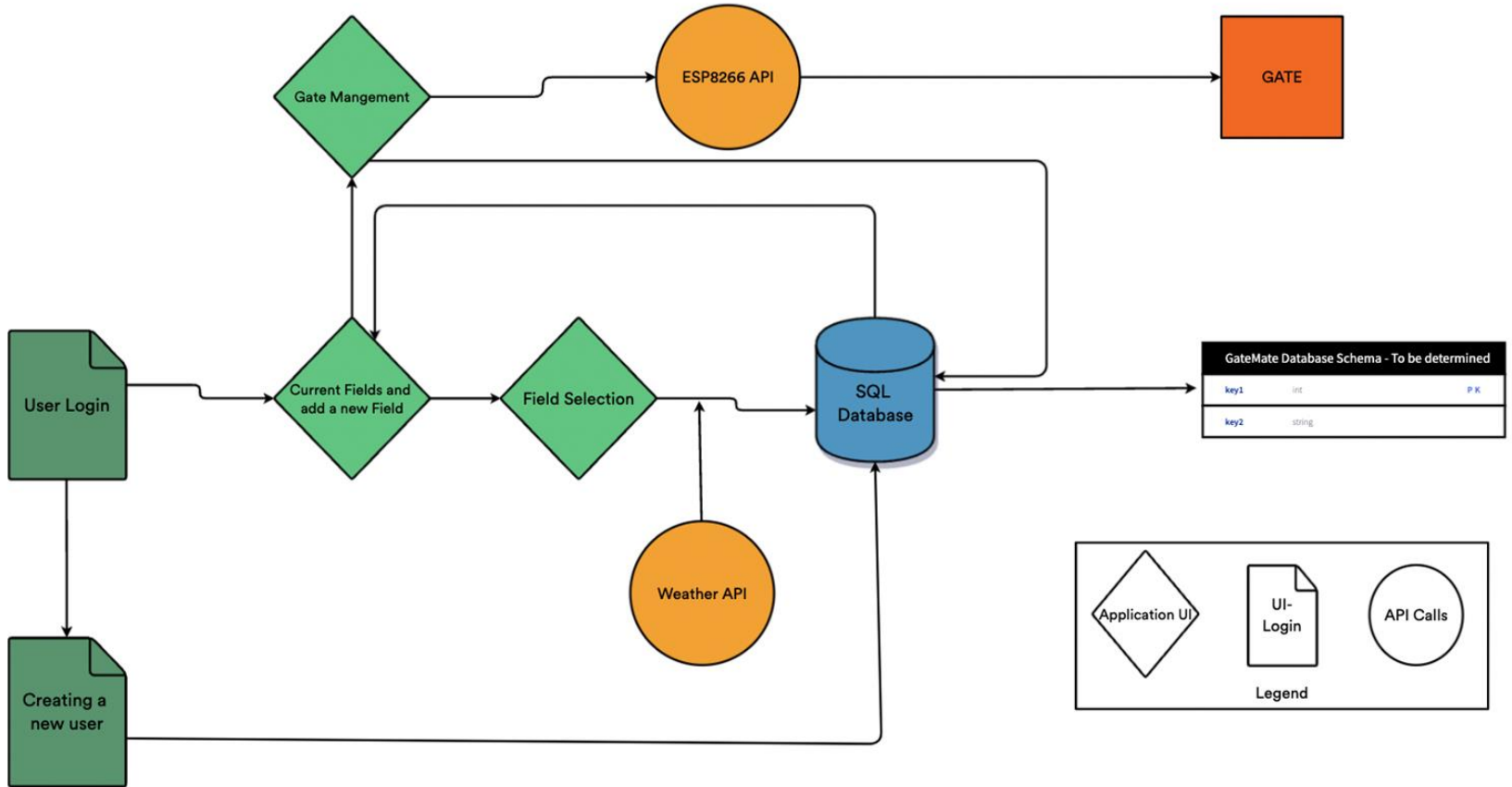
- Rice
 - Provides 21% of global human per capita energy
 - Provides 15% of per capita protein
 - US rice production exceeded \$3 billion
- Alternate Wetting and Drying
 - Labor intensive
 - Prone to human error
 - Time consuming
 - Errors lead to lost yield, lost profit, and wasted water
- Growing strain on natural resources



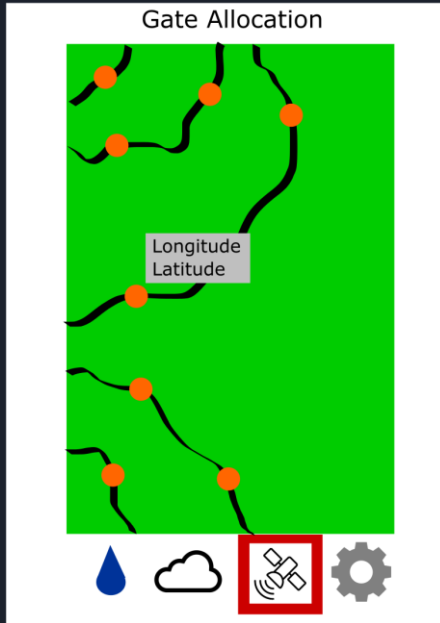
Solution

- Mobile interface to raise and lower gates remotely
- Assist with the initial gate placement
- Automatically raises and lowers gates according to
 - Weather
 - Crop life cycle
 - Growth rate of the crop

High Level Architecture

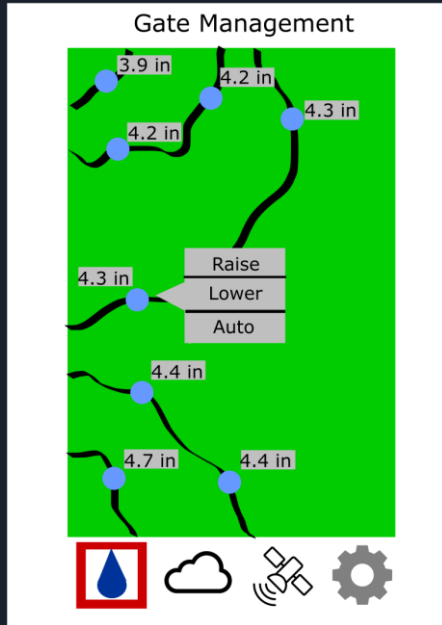


Gate Allocation User Interface



- Display optimal gate placements
- Clearly demonstrate placement reasoning
 - For example, displaying a topographic view

Gate Management User Interface



- Current water levels
- Finely tune gate heights
- Visualize gate locations

Keeping User Informed



GateMate: Weather Alert

Rainfall in forecast: Gates scheduled to raise 0.5 in.

- Notify user of weather that affects gate height
- Inform user on general gate behavior
- Notify user if a gate goes offline



Next Steps

- Learn about MSP430 Development
- Confirm application design with sponsors
- Establish a database schema