Project Milestone 4

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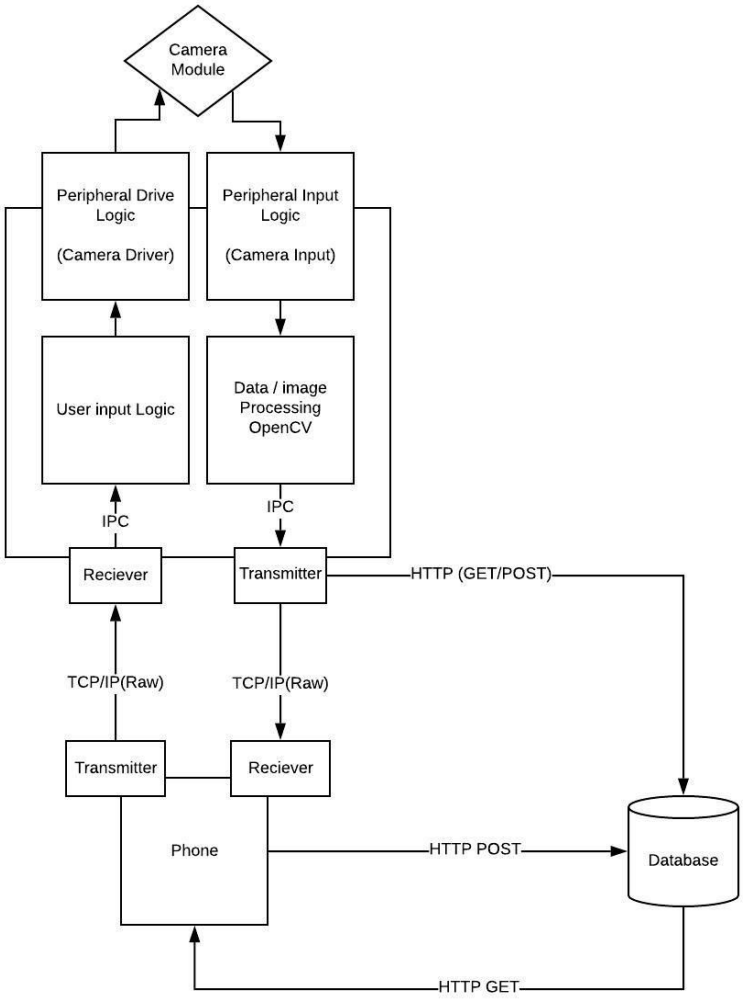
Revised List of Features:

Feature	User Story	Acceptance Criteria	Priority
In App Notifications	➔ As a gamer, I need to be notified when I received a drone hit so that I can keep track of my player stats. ➔ As a drone enthusiast, I need to be notified when my drone identifies a tag so that I can keep track of my drone's position. ➔ As an outdoor enthusiast, I need to be notified when my drone hits its target so that I can move to another stage efficiently. ➔ As a drone game administrator, I need to be able to oversee the game via push notifications.	➔ Gamer 1. Login to user portal. 2. Navigate to player stats 3. Be able to select stats and read about their subcomponents. ➔ Drone Enthusiast 1. Login to user portal. 2. Navigate to drone stats. 3. Be able to read drone stats and health using the application. ➔ Outdoor enthusiast 1. Login to the user portal 2. Navigate to sites and settings. 3. Be able to see through the drone data stream and view the drone's perspective. ➔ Drone Administrator 1. Login to the admin portal. 2. Navigate to user preferences. 3. Navigate to User statistics. 4. Be able to request data from the main database and interact with user data.	6
Flying Drone	➔ As a gamer, I need the drone to fly to be able to play the game. ➔ As a drone enthusiast, having a flying drone is everything. Without the drone I'm out. ➔ As an outdoor enthusiast, the flying drone allows me to play the game outside, so I need the flying feature to be up and running. ➔ As a drone game administrator, I need to have the drone	➔ Gamer 1. Fly the drone throughout the game 2. Login to the portal 3. Have the drone communicate with the mobile phone ➔ Drone Enthusiast 1. Login to the user portal 2. Fly the drone to participate in the game 3. Navigate through the app to see stats and settings ➔ Outdoor Enthusiast 1. Login to the portal and view stats and settings 2. View the drone's perspective ➔ Drone Administrator 1. Login to the admin portal	1

	flying so that my game is a success.	2. Navigate to see user stats and drone functionality	
Identification of April Tags	➔ As a gamer, I need to identify each player in the game, so that I can play the game. ➔ As a drone enthusiast, I need to know which player is my target,so I can chase them. ➔ As an outdoor enthusiast, I need to which players are on my team. ➔ As a drone game administrator, I need to have the drone scan QR codes so that players can be tagged and the game functions properly.	➔ Gamer 1. Have instant access to the streaming camera 2. Navigate to the camera section and pick basic settings such as resolution and depth. ➔ Drone Enthusiast 1. Be able to identify april tags / QR Codes. 2. Have an applicable course set up to navigate through. ➔ Outdoor enthusiast 1. Be able to traverse the wilderness and place april tags in a desired location. 2. Be able to monitor the location of tags using the drone camera. ➔ Drone Administrator 1. Be able to monitor tag lifetimes. 2. Have a database storing the identification of QR Codes and their respective statistics. 3. Log into admin portal 4. Navigate to tag settings.	2
Geolocation	➔ As a gamer, I need to know where the players and tag is. ➔ As a drone enthusiast, I need to track my drone and not to lose it. ➔ As an outdoor enthusiast, I need to realize how dangerous the place that i want to go. ➔ As a drone game administrator, I need to have my players know where they are so they can navigate.	➔ Gamer: 1. Identify their position relate to drone's position 2. Find drone by notification from game ➔ Drone Enthusiast 1. Identify their position relate to drone's position 2. Identify situation around drone 3. Find drone by notification from game ➔ Outdoor enthusiast 1. Identify their position with drone's position 2. Identify situation around drone 3. Identify ground situation around drone 4. Find drone by notification from game ➔ Drone Administrator 1. Login to the admin portal	4

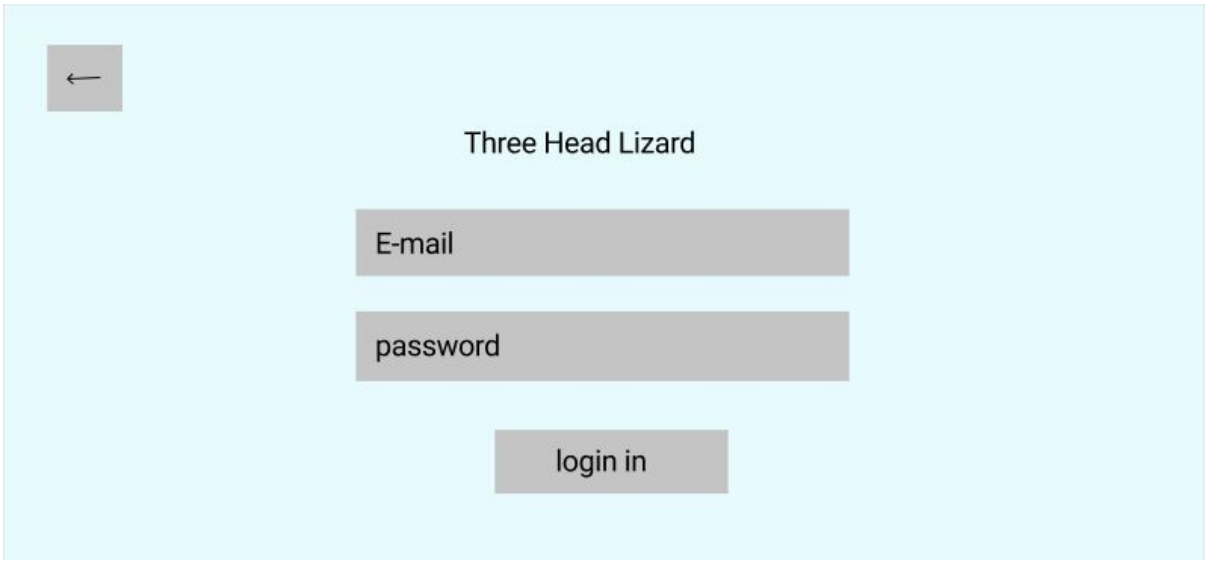
Mobile Support	➔ As a gamer, I need to be able to play the game on my phone to maximize functionality. ➔ As a drone enthusiast, I need to be able to connect to the drone via a mobile phone to play the game. ➔ As an outdoor enthusiast, I need to be able to connect the game with a mobile phone to be able to go outside and truly enjoy the game. ➔ As a drone game administrator, I need mobile support to be up and running or else the game does not work.	➔ Gamer: 1. Easy access to the game everywhere. 2. Support more than one mobile system. 3. Being able to play the game with at least 2 players. ➔ Drone Enthusiast: 1. Check the drone status. 2. Change setting easily. 3. Control the settings efficiently. ➔ Outdoor Enthusiast: 1. Play the game everywhere. 2. Being able to take videos and pictures while playing. 3. Being able to locate player and the drone without the controller. ➔ Drone Administrator: 1. Can take off and land without the controller. 2. Pull a map to locate players and the drone. 3. Login to admin portal using only a mobile.	3
User to User Interaction	➔ As a gamer, I need to be able to interact with other players throughout the game. ➔ As a drone enthusiast, I need to be able to fly the drone and have fun doing it throughout the game. ➔ As an outdoor enthusiast, I need to be able to get some fresh air and still play this fun game. ➔ As a drone game administrator, I need users to be able to interact with each other so my game runs smoothly.	➔ Gamer 4. Login to user portal. 5. Navigate to player stats 6. Be able to select stats and read about their subcomponents. ➔ Drone Enthusiast 4. Login to user portal. 5. Navigate to drone stats. 6. Be able to read drone stats and health using the application. ➔ Outdoor enthusiast 4. Login to the user portal 5. Navigate to sites and settings. 6. Be able to see through the drone data stream and view the drone's perspective. ➔ Drone Administrator 5. Login to the admin portal. 6. Navigate to user preferences. 7. Navigate to User statistics. 8. Be able to request data from the main database and interact with user data.	5

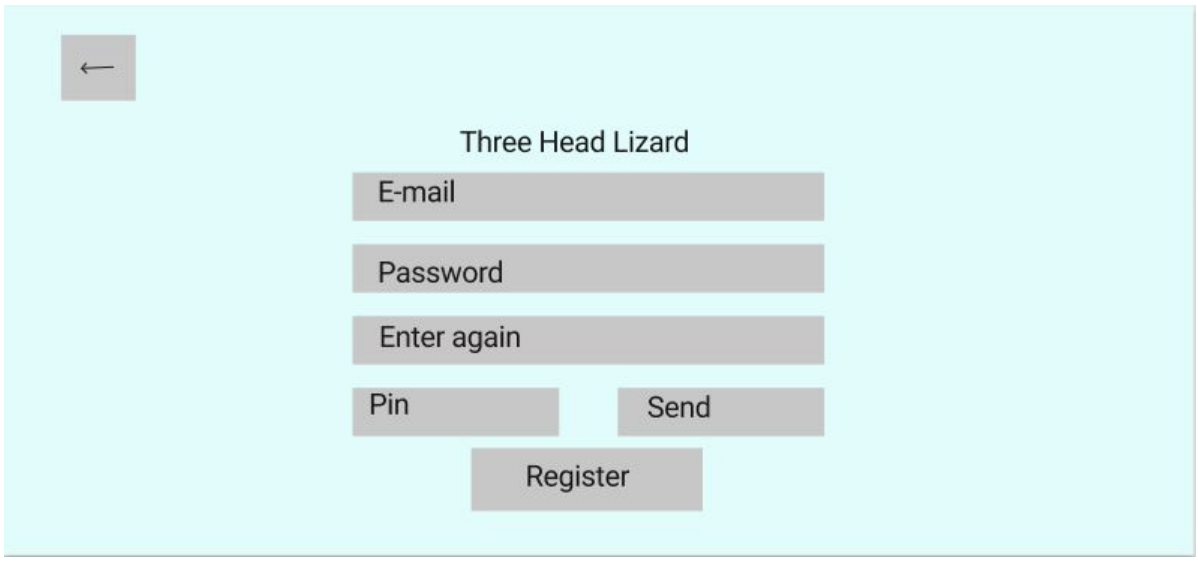
Architecture Diagram:



Front End WireDiagram:


Three Head Lizard
Login in
Register
Visitor


←
Three Head Lizard
E-mail
password
login in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E-mail
Password
Enter again
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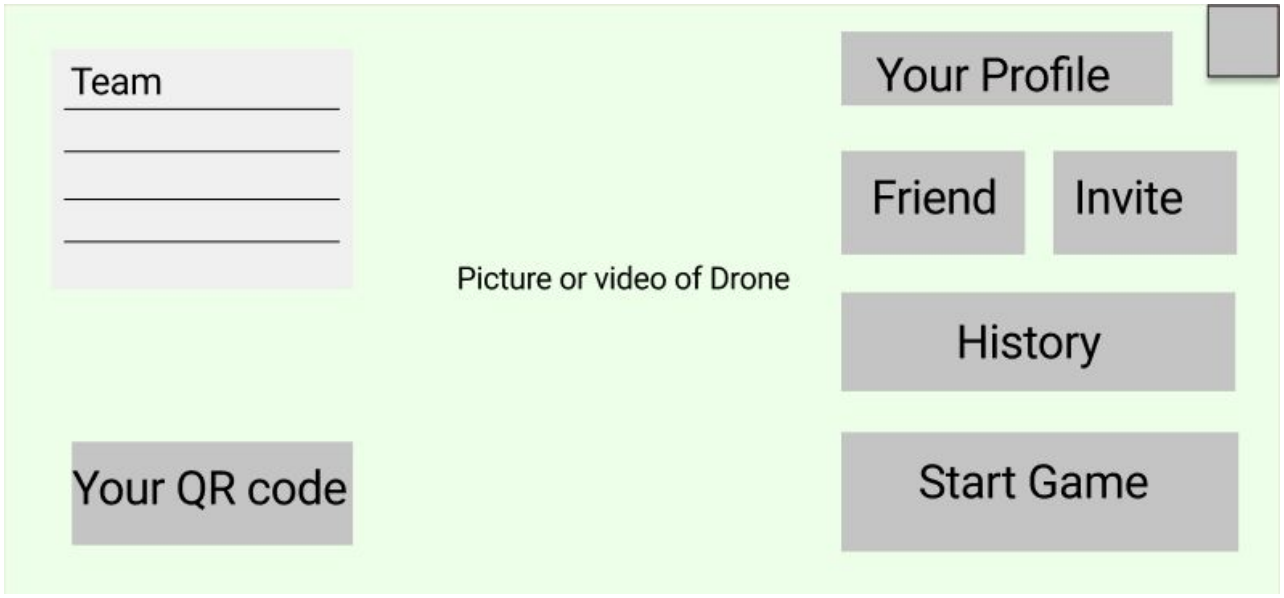
Team
Your Profile
Friend
Invite
Picture or video of Drone
History
Your QR code
Start Game


Disconnected
N/A
N/A
UserName
Dudley
Tag Time
5 sec
ISO
SHUTTER
EV
WB
CAPACITY
N/A
N/A
N/A
N/A
N/A
N/A
0
2km
D N/A
H N/A
H.S N/A
V.S N/A
N/A

Front End Description:

The front end has a login, register, and pilot screen for the Android app. The register page populates the Users database with each field needed to create a user. The login page validates the user login credentials to become the user flying the drone, and the Games database will be populated by the user flying the drone. The piloting screen will allow the user to interface into the drone, fly it, and by scanning an April Tag with the camera, will contact the server with a POST request.

Web Service Design:

We are using the Maverick API for our drone as well as OpenCV. Through the drone we are passing data by pinging the server when the camera sees an april tag and receiving data on the mobile app to access the database and the stats of the users.

Database Design:

We are using PostgreSQL as DBMS to store our game data. The database will be queried locally using an ongoing server receiving post requests from drone modules. Modules will contain a hashed key that validates on input in order to prevent XSS attacks and other security concerns. Users will be stored in the database as well as user scores that can be queried and compared.