



Instructor Review Meeting 3

Group 23 - Alex, Jack, Luke, and Reid

Problem Statement

"Current Wargaming training resources for cadets enrolled in an Air Force Reserve Officer Training Corps programs are expensive, physical, and overly complicated."

Users

Air Force Reserve Officer Training Corps. (AFROTC) cadets and instructors.

AFROTC cadets and instructors are required to learn/instruct Wargaming as per AFROTC Objective 10:
"Understand how the Air Force employs warfighting assets"

The background features a dark blue gradient that transitions to a lighter blue at the bottom. Overlaid on this are several sets of thin, white, wavy lines that create a sense of motion and depth. In the top-left and bottom-right corners, there are white L-shaped corner brackets.

Requirements

Non-Functional

UI

Intuitive and Informative User Interface.

Ease of Use

Requires minimal previous knowledge.

Multi-User/Game

Supports multiple users, which each user having multiple games.

Accessibility

Server shall be deployed constantly on ISU network, only offline for maintenance/reset.

Responsive

Server responds on average less than 3 seconds.

Security

Sensitive user info. is not transmitted as plaintext.

Functional

Spring Boot

Server is deployed as a Java Spring Boot application.

Data Persistence

All user information and game states saved remotely.

Downloadable Client

User-side software shall be downloadable in executable form.

Security

Users must log in and be authenticated via HTTP.

Interface

Keyboard & mouse playable game, ISU internet connection required.



The background features a dark blue gradient with intricate white wavy lines that create a sense of depth and movement. These lines are composed of many thin, parallel curves that flow across the frame. Additionally, there are thin white geometric lines: a horizontal line at the top left, a vertical line at the top left, a vertical line on the right side, and a horizontal line at the bottom center.

Design Overview

Design Visuals (MVC / Layered Design)

Presentation
& Views

Map/Game
Screen

Login
Screen

Game Select
Screen

Business &
Controller

Game Loop

Coordinate
Calculation

Inject Card
Flag Setting

Game
Retrieval

Account
Verification

Persistence
& Controller

Game
Controller

Account
Controller

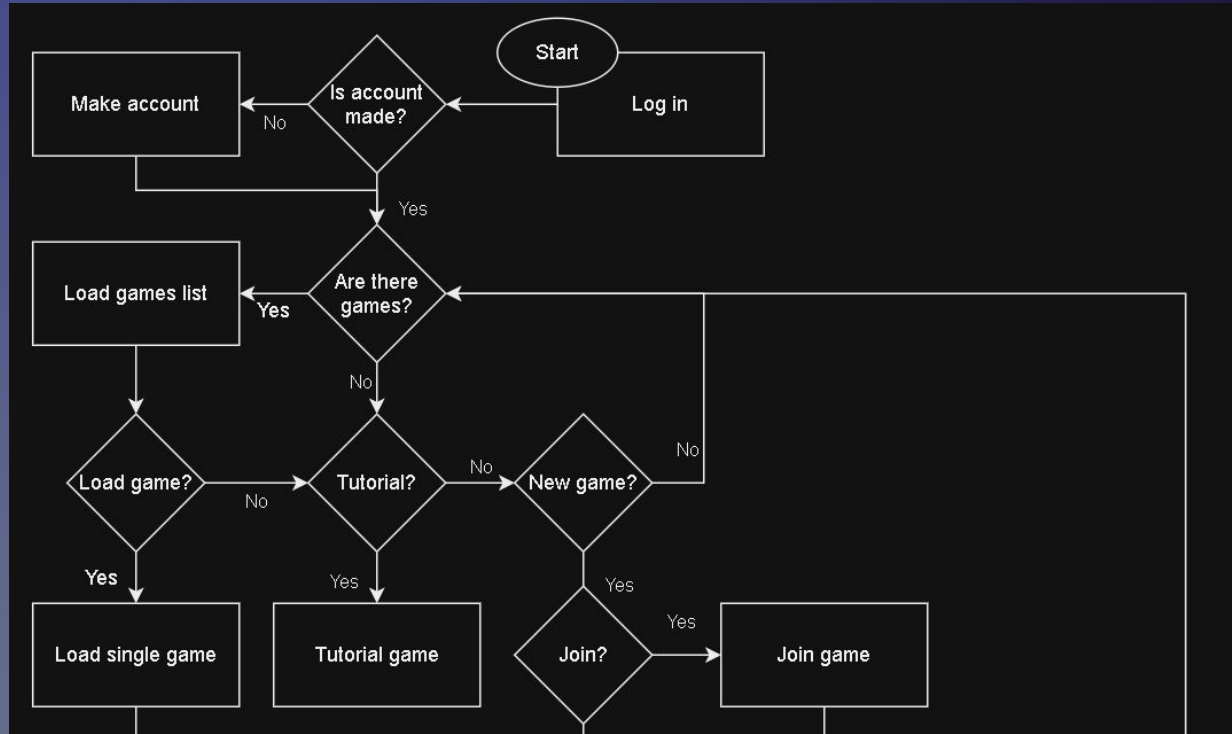
Database &
Model

Account
Database

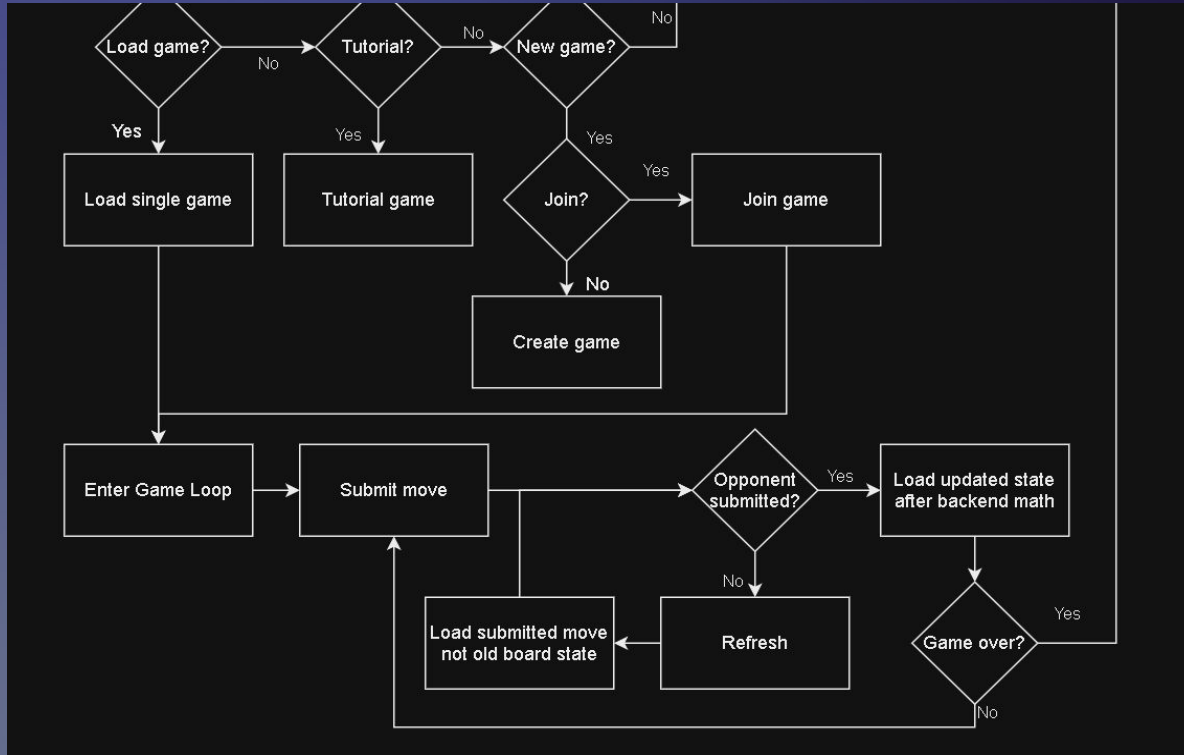
Game
Database

Join Code
Database

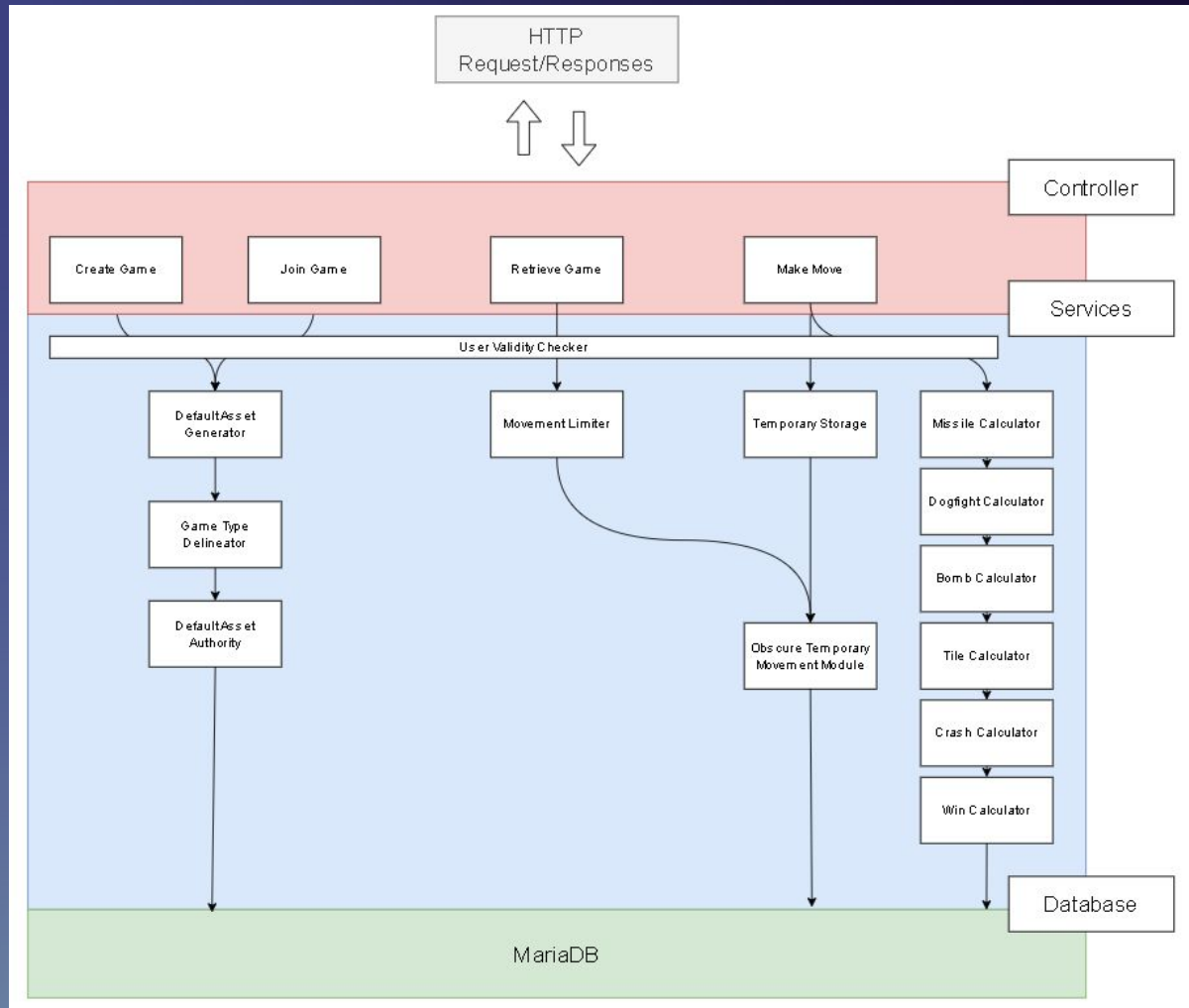
Functionality (Use Case Pt 1)



Functionality (Use Case Pt 2)



Backend Modules Overview



Game Board and Logic

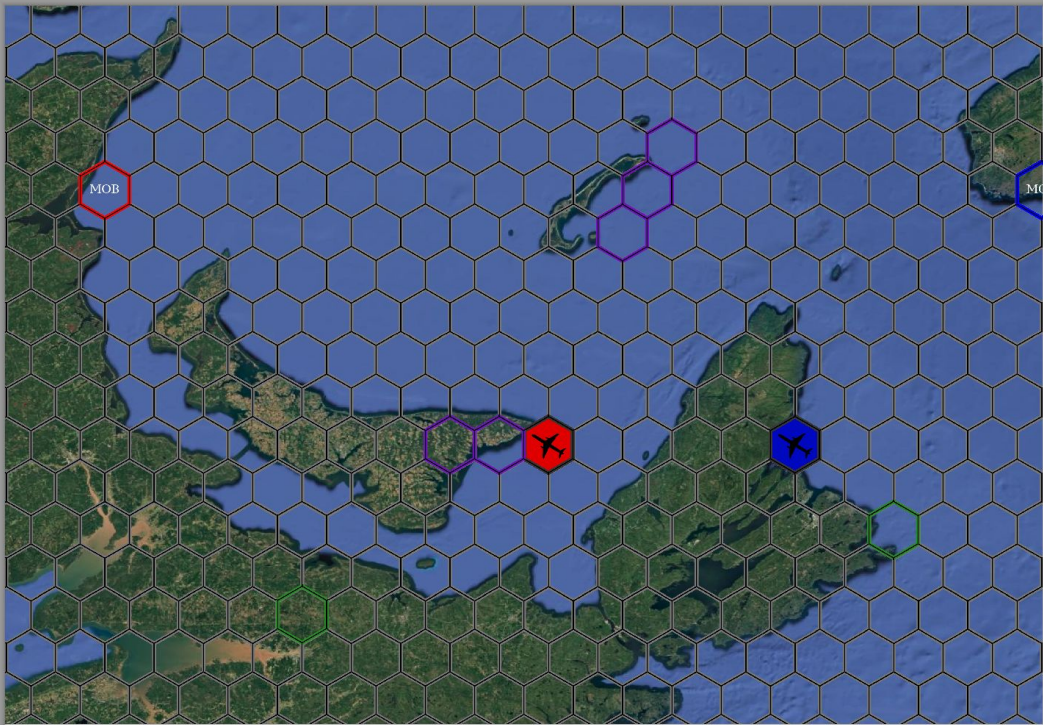
- Hexagonal grid with coordinates
- Dynamic grid cell storage for assets
- Pop up menus for easy viewing
- Point and click movement
- Asset range circles and movement limiting
- Display of all assets
- Compilation of all asset coordinates for transmission
- Refresh feature on returned HTTP requests

UI Screenshots



UI Screenshots

TURN: 1



A hexagonal grid map of Europe and the surrounding Mediterranean and Atlantic regions. The map is overlaid with a grid of hexagons. Several hexagons are highlighted with colored outlines: a red hexagon on the left coast, a blue hexagon on the right coast, a purple hexagon in the central region, a red hexagon with a black airplane icon in the central region, a blue hexagon with a black airplane icon in the central region, and a green hexagon in the southern region. Two hexagons are labeled 'MOB' in white text on a red background.

KC: 135 | ML: 10 | GC: 10 | AC: 10

GAME LOG

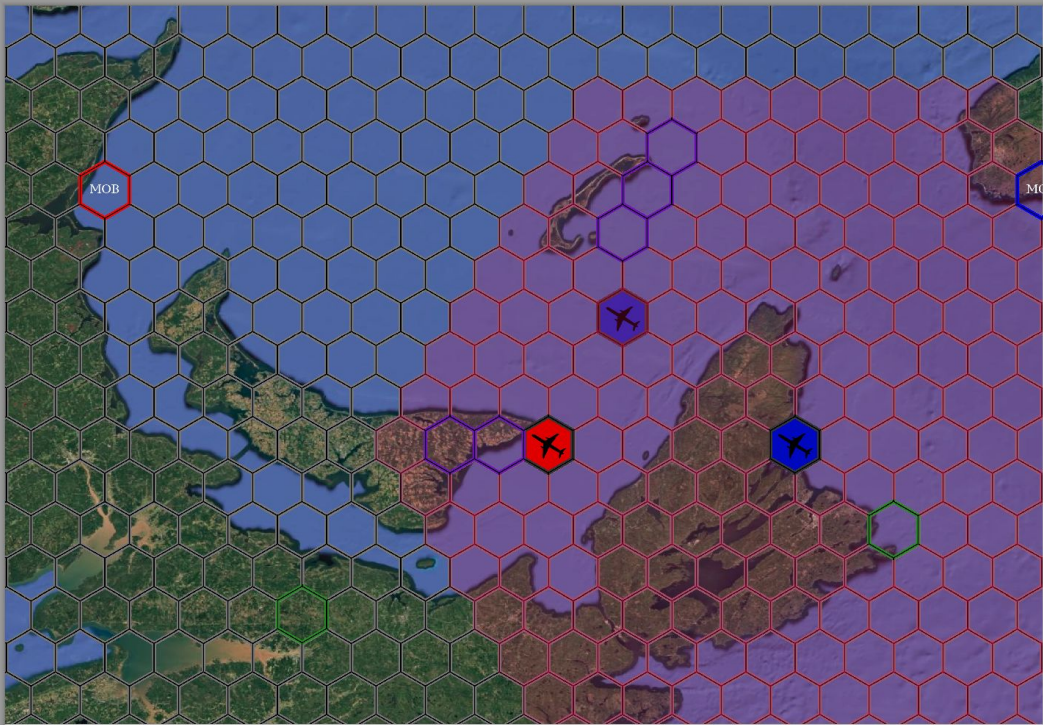
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◀ TURN # ▶

SUBMIT BACK

UI Screenshots

TURN: 1



A hexagonal grid map of Europe and the surrounding seas. The map is overlaid with a red hexagonal grid. Several hexagons are highlighted with colored borders: a red hexagon on the far left labeled 'MOB', a purple hexagon in the center, a red hexagon with a red airplane icon in the center, a blue hexagon with a blue airplane icon to the right, and a blue hexagon on the far right labeled 'MOB'. The map is divided into regions by colored borders: a purple region in the center, a red region on the right, and a green region at the bottom.

KC: 135 | ML: 10 | GC: 10 | AC: 10

GAME LOG

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SUBMIT BACK

The background features a dark blue gradient with intricate, white, wavy line patterns that create a sense of depth and movement. These lines are arranged in a series of concentric, overlapping curves that sweep across the frame. Additionally, there are several thin white lines: a horizontal line at the top left, a vertical line at the top left, a vertical line on the right side, and a horizontal line at the bottom center.

Progress / Outcomes

Implemented thus Far

- Secure login/user authentication
- Database Creation
- User-to-user HTTP communication
- Game creation, joining
- Game move submission, turn iterations, combat calculations
- Game board updates and combat results animations
- Base creation
- Game key tiles/objectives
- Game log
- Player asset controls (Movement, Equipment)
- Game theme music



Pending Issues / Concerns

Pending Issues

- Need to implement permanent server deployment
- Configure client hosting/software distribution
- Finalize UI improvements
- Perform User Play-Testing
- Various bug fixes