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Cit 447
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CIT 447 Deliverable 1 Document

Game Concept

I initially wanted to possibly do a pre-flight check game that would go over the steps that it takes to ready a civilian aircraft for flight, but after considering the topic it seemed a bit too dry and linear task solving to be entertaining. Over the weekend I tried to ram my head against any other ideas of what would be an interesting job or task to try and simulate, I then remembered an old phone game I used to play called Air Control. Instead of being a plane flying simulation, I've decided to make an Air Traffic Controller simulation that boils down the job of being an ATC.

Teaching mechanics

For the mechanics and teaching of the game, I plan to organize the game in a manner similar to Papers Please, incrementally increasing the amount of mechanics so the player has a smooth ride with what needs to be achieved. While all this is occuring, the player will be getting a handbook of instructions on how to proceed, again similar to Papers Please, which should hopefully reflect what they've learned as the game progresses.

Mechanics and Task List:

- Display board with simulated positions of planes
    - Each plane represented by a tiny 3d model
    - Projected flight path for where it is moving to on the board
    - Simplified GPS coordinates on board to give them basic routing
        - 12 by 12 or 20 by 20 range on board
    - Planes can have variable amounts of fuel to add managing of time
- Input method for giving planes order
    - No altitude adjustment for planes, only XY distance checking
    - Button input on a control console
        - Line of sight drawn from camera forward, if it collides with a button and button is active it will activate
    - Planes numbered in standard plane format: 3 letters, 4 numbers
    - Number and letter keys for getting a plane from the board.
        - When the player puts the code for a plane in, the game checks to see if that is a valid name in the playspace.
        - Planes are held in an object array
    - Goto button for direction
        - Requires coordinates as a primary command on the Grid

        - Default behavior is to navigate towards GPS coordinates
        - Holding pattern button to tell plane to stay in air on a preset track of nodes.
        - Landing pattern button to tell plane to navigate to airfield at the specified point.
        - Departing pattern button to tell plane to navigate off map in a straight line.
- Simulated collision with planes
    - Planes have large hitbox circles that alert player to incoming crash before a plane hits.
- Dynamically updating manual as days progress
- Coffee machine

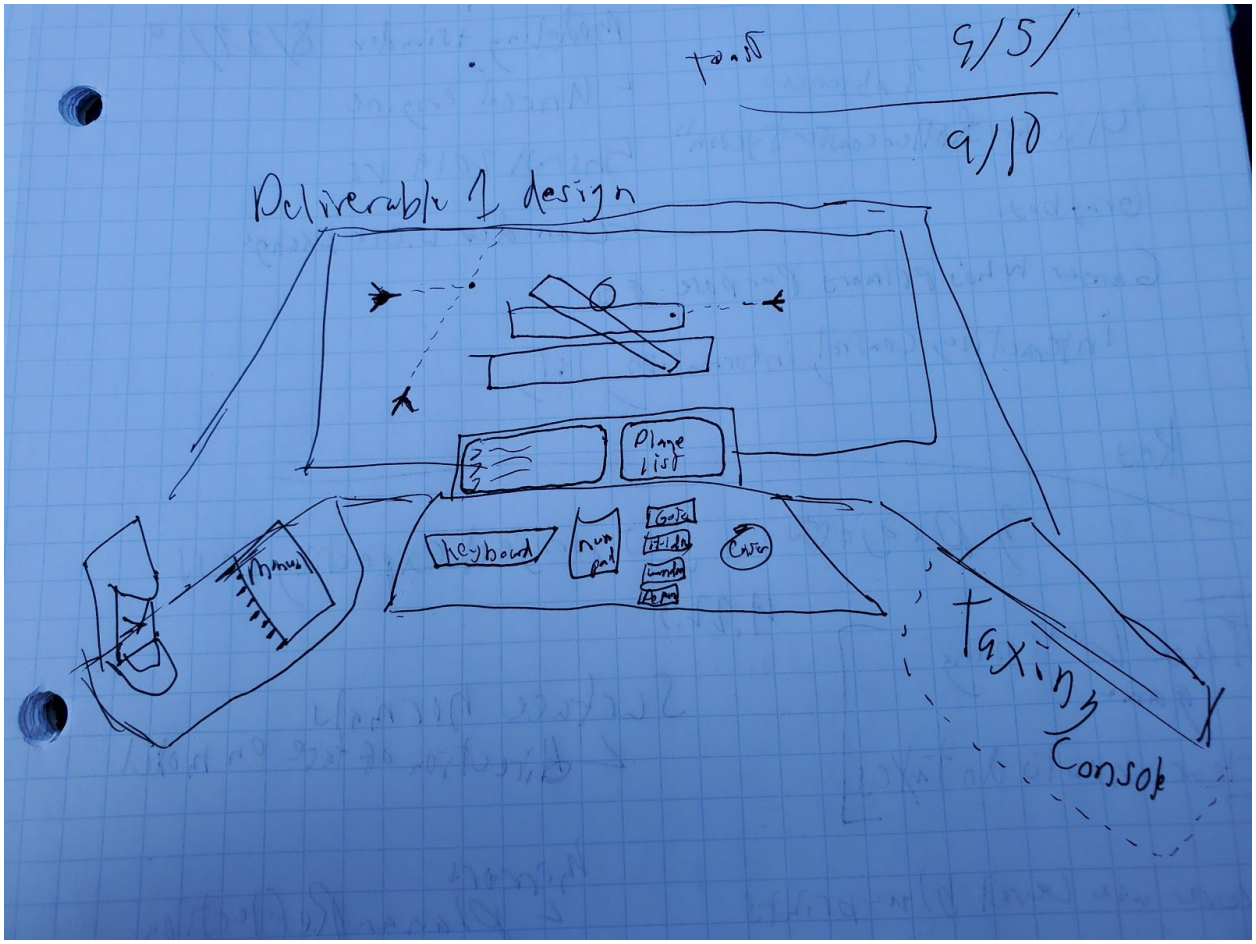
Possible pony features:

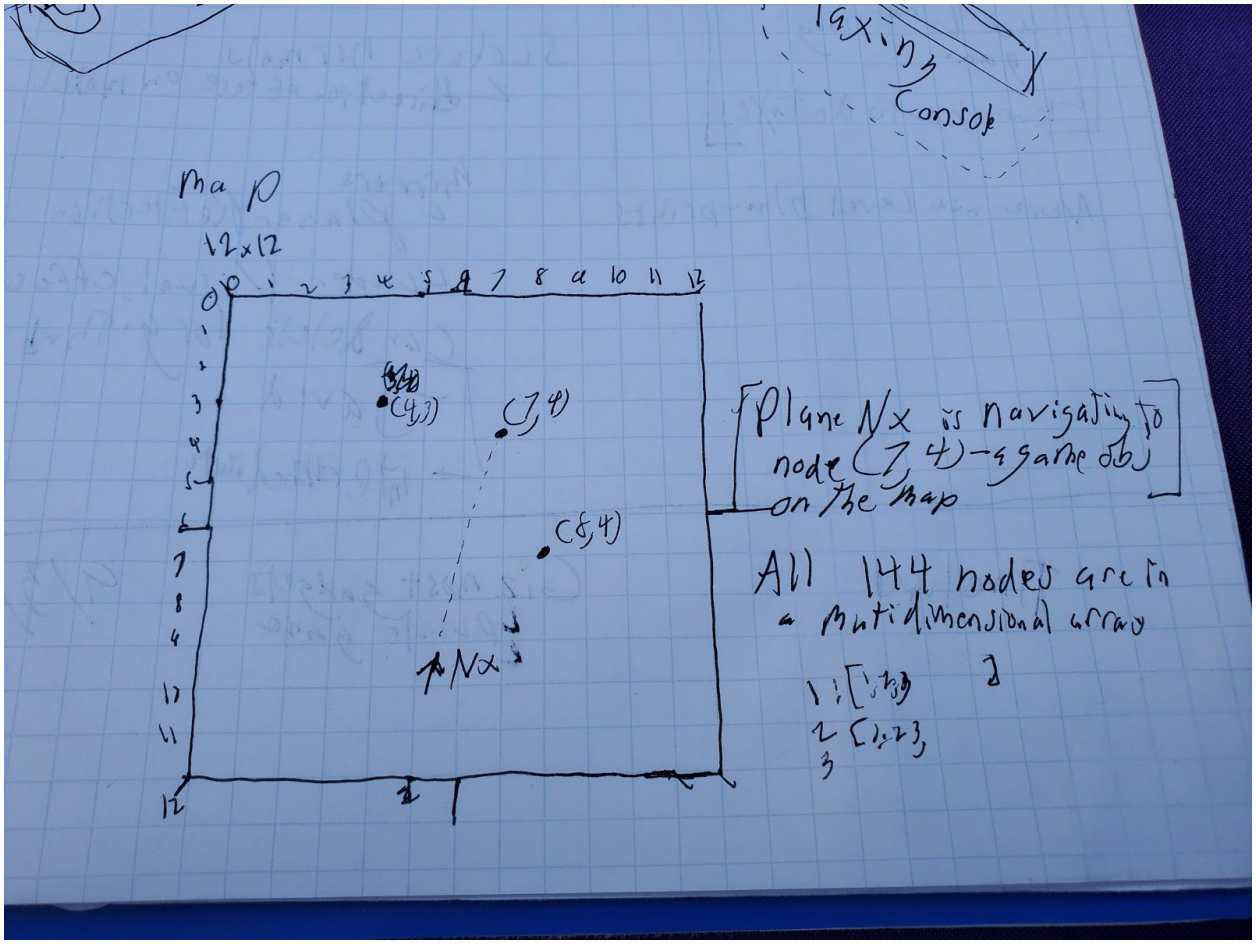
- 3 tier altitude setup for approach and other planes
- Other types of planes need to go to specific airfield.
- Refilling the coffee machine
    - Endurance
- Map board for planes currently on airfield
    - Separate control panel, all reskinned from main display board
        - Less buttons that are specific for Taxing on runway
    - Limited spaces where planes can go, collision for when planes are on same track

Background research and other games:

- Games/Simulations/Maps
    - https://www.openscope.co/
    - http://www.atc-sim.com/simulator
    - https://www.nats.aero/careers/trainee-air-traffic-controllers/games/game/atclanding/
    - http://www.airplanegame.us/airport-madness-3-air-traffic-control-game/?play=game
    - https://www.nasa.gov/centers/ames/Sector33/iOS/index.html
    - https://flightaware.com/live/
- ATC Research
    - https://kids.kiddle.co/Air_traffic_control
    - https://careerkids.com/pages/air-traffic-controllers
    - https://www.natca.org/index.php/acronyms-breakdown/kids-corner

General design layout of console:


tasks
9/5/
9/10
Deliverable 1 design
Plane List
keyboard
num pad
taxiing Consol


Console
Map
12x12
(4,3)
(7,4)
(5,4)
Nx
Plane Nx is navigating to node (7,4) - same obj on the map
All 144 nodes are in a multidimensional array