Full Ahead!

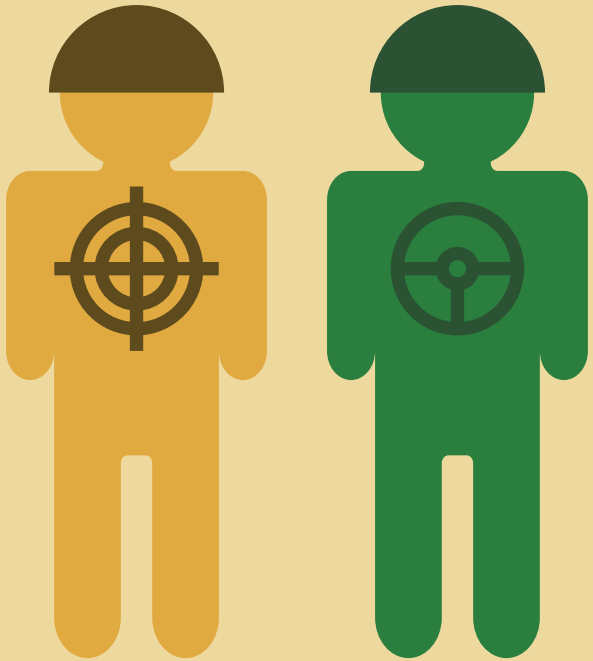
Design Document
Anna Catton FYP

Contents

Concept II
Overview III
Generic IV
Driver VI
Gunner VII
Menus IX
Levels X
AI XI

Concept

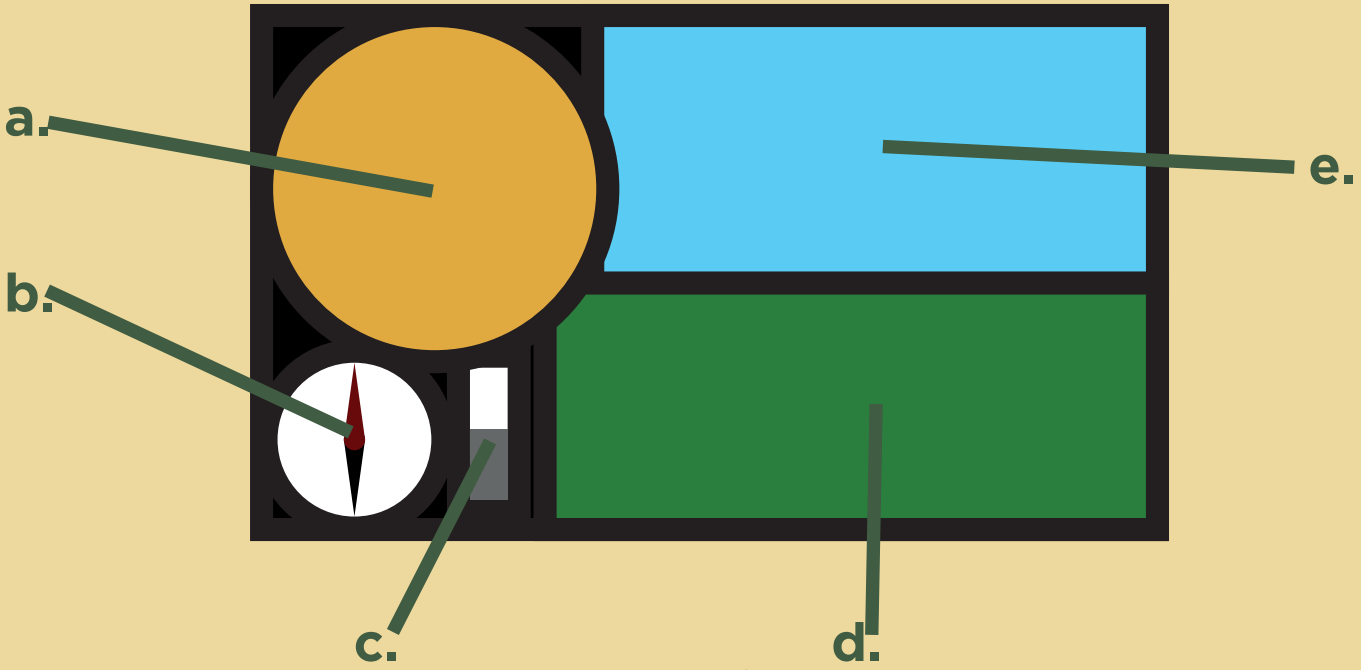
Full ahead is a two-player co-operative game in which players taking the role of gunner and driver must work together to effectively operate a single tank.



Overview

The game is played by two players with a controller each, sharing a single screen. Although all game controls are placed on the analog sticks and right bumper, some other buttons are used for menu functions.

Generic



a. Gunner View
b. Compass
C. Loading Meter

d. Driver View
e. Commander view

The gunner view provides a magnified ‘scope’ with crosshairs, but very limited FOV. It moves with the gun.
The driver view has wide FOV, but is low-down so cannot see far. It is linked to the hull.
The commander view is a blend of the two. It sits with the turret, turning but not elevating.

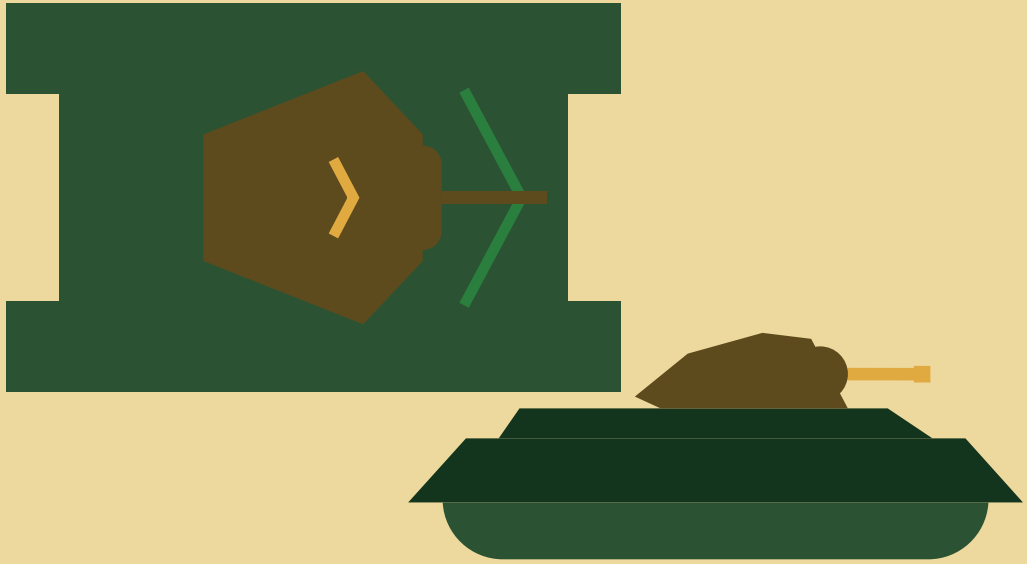
The compass is mostly used as a quick reference for the gunner and driver to tell where the turret and hull are in reference to each other.
The loading meter shows the progress of the reload.

The tank

Visually based off of a WWII ‘Crusader’ tank, the tank can be split into two connected but seperate parts for purposes of gameplay.

- The turret, in yellow, controlled by the gunner.
- The hull, in green, controlled by the driver.

All gameplay takes place in the tank, from the perspective of the tank crew.

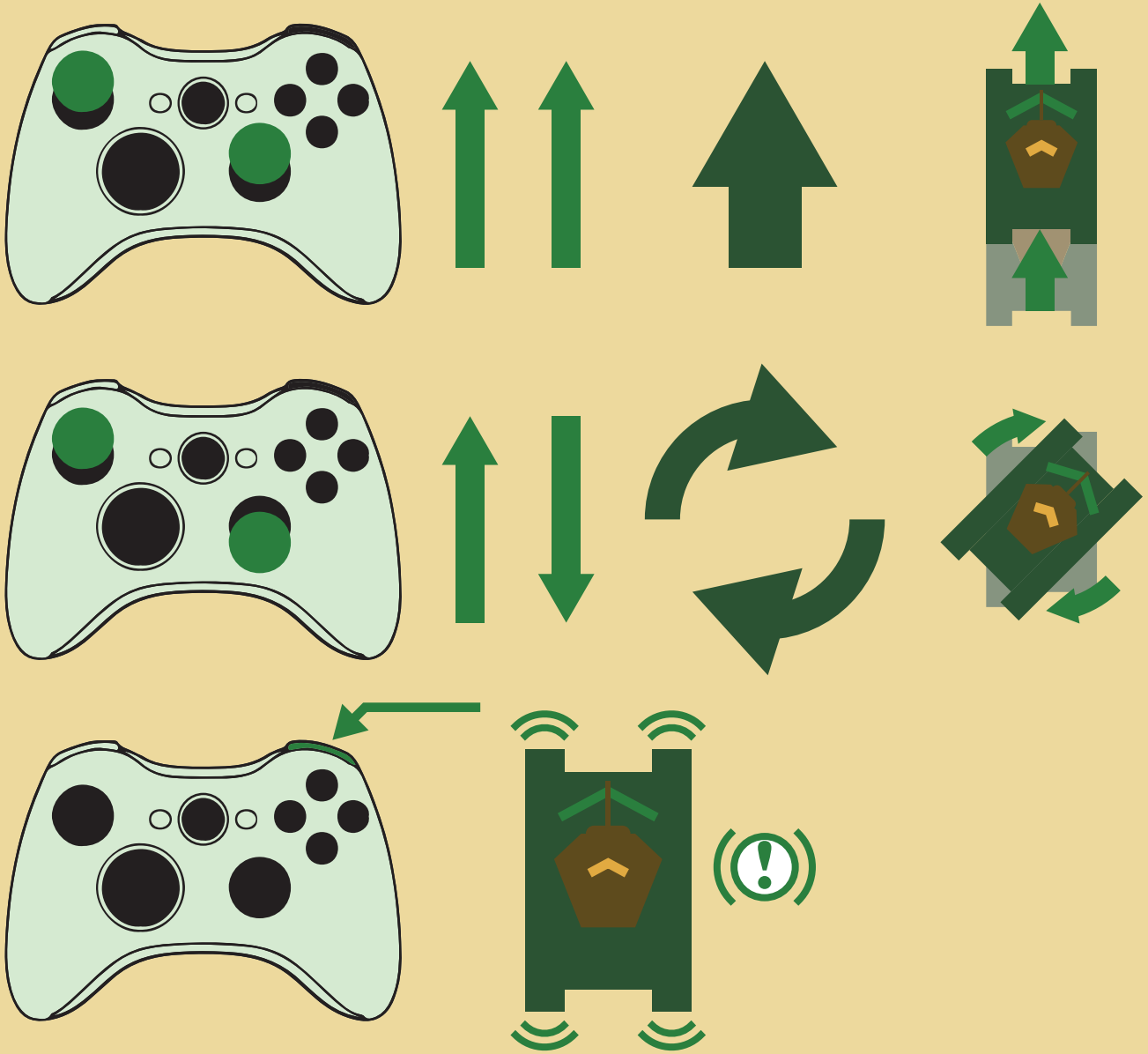


Driver

The driver uses their analog inputs to control the individual tank tracks. Moving them together moves the tank in the inputted direction and moving them in opposite directions produces a turn.

These controls are blendable, so left stick full forwards right stick neutral will result in half forwards, half right turn.

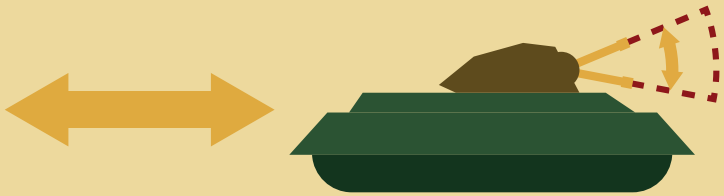
Right bumper is handbrake. It cuts all directional input and applies the brakes.

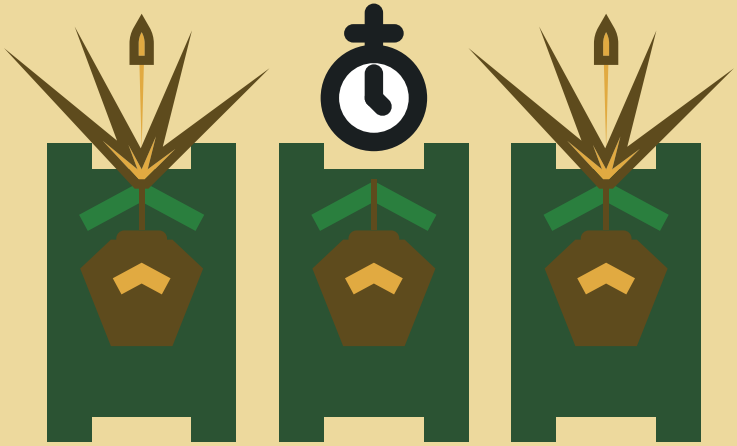


Gunner

The gunner uses their left analog stick for yaw input, and their right analog stick for elevation input. Although there is no limit on yaw, elevation is limited within a small range to prevent the gun clipping.

Right bumper is fire - spawning a projectile at the gun, providing they're not reloading. After firing, a 4s reload timer is started, after which the gunner can fire again.





Feedback

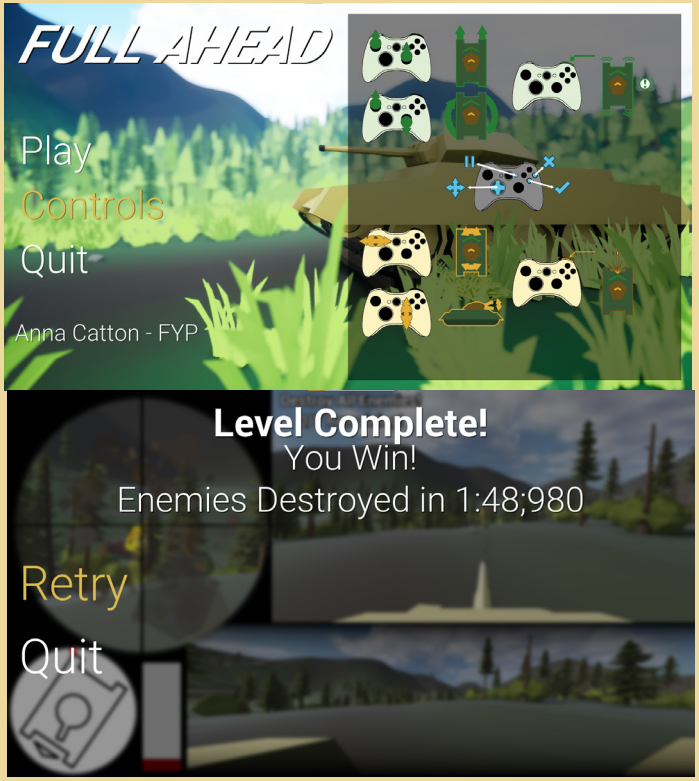
The driver is given feedback in the following ways:

Input	The engine noise responds to the engine's working state
Speed	The controller rumbles in response to acceleration of all types
Speed	At high speed the suspension begins to squeak
Rotation	The compass provides an accurate bearing at all times

The gunner is given feedback in the following ways:

Input	The turret noise correlates to the turret speed
Input	On firing, there are noises, rumble and a particle effect
Input	While a shell is in flight the 'whistle' pitch tells it's distance
Input	On shell hits there is an explosion noise and particle effect
Input	On accurate tank hits there is a second, metallic noise
Reload	The controller rumbles and there is a clanking noise on reload
Rotation	The compass provides an accurate bearing at all times

Menus



The menu screens were intentionally kept simple.
All ‘control’ panels are toggleable through their associated options and all buttons do exactly as they say they will - some variation being in that quit means ‘quit to menu’ in all places except the menu, which quits entirely.
The mid-game pause varies based off of which player paused, meaning players can see their own controls accurately and there is no confusion regarding who is in control.

Levels

The only level currently present is the ‘training grounds’. In this level, players must race to destroy all 7 inanimate enemies in the fastest amount of time possible.

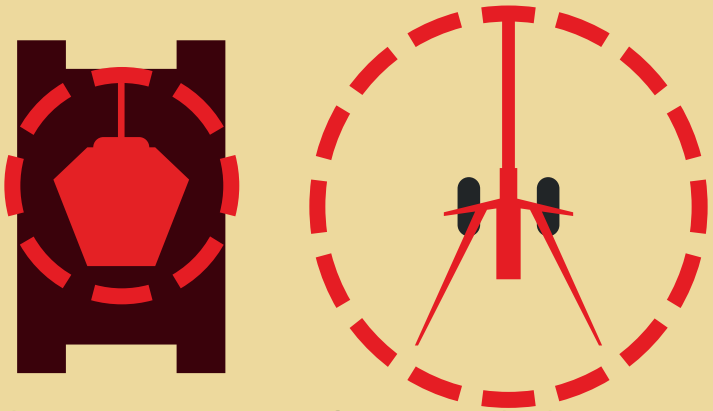
Woodlands, difficult terrain

Enemy/Friendly tank spawns

Smooth road path

Level boundary

AI



Ai will be implemented seperately for tank hulls and tank/antitank guns. Enemies will need to do different things depending upon the context, hulls can programmed on a case-by-case basis, doing tasks such as path following, wandering, or remaining static until chasing the player.

Guns, however, will largely act the same. Once a player is detect within a radius, they will turn to face the player and then repeatedly fire wihile still having aimed correctly. They will have a set inaccuracy which will decrease with each shot, making them seem to ‘walk’ their shots onto the target.