

Gameplay

- The player is in a vehicle on a loop of road.
- The vehicle drives automatically at a constant speed
- The player controls an aiming reticle with the mouse and can shoot from the vehicle
- Enemies fly near you and follow you, attacking you (range and melee).
- Score points based on enemy kills(?) loops round the circuit(?)
- Difficulty increases on loops round the circuit(?)
- If the player runs out of health, there is a game over and you restart.

Requirements

Project must include demonstrations of:

- **Abstraction:** reducing duplicate code by “abstracting out” repeated details or information.
- **Encapsulation:** “encapsulating” data and the methods that manipulate that data together in a class, protecting it from misuse by other classes.
- **Inheritance:** child classes deriving (or “inheriting”) behaviour from parent classes.
- **Polymorphism:** changing (“morphing”) methods into many (“poly”) forms (i.e., method overloading and method overriding).

Abstraction:

Enemies have Move() ; Attack(); DecideAction();

Encapsulation

Anything with HP can have a getter for HP but only a private Setter and then have a TakeDamage() that Has a check for 0 or less HP

Inheritance

Have an enemy class that other enemy types inherit from.

Enemy type variation dimensions:

- Level of movement
- Range vs Melee
- Health
- Damage

All things with HP can be children of HpActor

Polymorphism

Enemies will have different implementations of the Attack() and Move() methods

Scope

This is a prototype of a gameplay loop /mechanic. Assets can be placeholder.

The project will be completed when:

- A loop of road exists to drive on.
- A player can indefinitely go round the road (subject to not getting a game over).
- There are at least two types of enemies.
- The player can damage and kill the enemy.
- The enemy can damage and kill the player.
- The player scores point in some way (loops and/or kills)
- All Programming theory concepts are demonstrated within the code base.

There is no need for a menu system for this prototype, just a title screen.