# 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 reticule 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.