## Player controller

Problems: what can the player do with their tank

1. having the player move forward and backwards
2. moving forwards is faster than moving backwards.
3. the player can rotate the tank left and right
4. the player can move the turret with the mouse
5. changing camera position for being able to zoom in.
6. while zoomed in, display where the shell will hit
7. the camera follows where the mouse moves
8. the player can change barrel elevation
9. the barrel elevation has a max height and min depression
10. the player can shoot shells
11. having a reload time

Solutions: Pseudocode it out

* 1. Set the movement speed factor
  2. Set input keys for moving
  3. Get the tank’s current position
  4. IF player inputs, have the tank’s current position changed by a movement speed factor over a change in time.
  5. IF player input, for moving backwards, have the movement speed factor halved
  6. Set tank’s rotation speed factor
  7. Set input keys for rotating
  8. Get the player’s current rotation
  9. IF player input, have the tank’s current rotation changed by a rotating speed factor over a change in time
  10. Set a mouse sensitivity factor
  11. Set input to mouse
  12. Get turret's rotation
  13. IF mouse movement is active
      1. Update the turret’s rotation by the sensitivity factor over a change in time

## Enemy controller

Problem: what does the enemy need to do with their tank

Controlling elements

1. moving the tank forwards and backwards
2. rotating the tank left and right
3. to rotate the turret
4. being able to shoot
5. having a reload time
6. Max fire range

A.I elements

1. checking whether within range of player
2. moving within range of player
3. aim at the player
4. shoot at the player’s current position.

Solution: Pseudocode it out

With the Move Towards function, the goal is for the tank to always move in the direction of the player using the Look At function, we can set the tanks rotating towards the player position, and then just how tanks should move, moving only along the forward’s vector.