

## Unit Tests:

### Boat:

- SteerLeft - Tests that the boat moves left if in the river but does not move left if at or over the left bank.
- SteerRight - Tests that the boat moves right if in the river but does not move right if at or over the right bank.
- MoveForward - Tests the boat moves the correct distance forward.
- IncreaseSpeed - Tests that speed increases if the boat is not tired and is below the speed limit and stays the same otherwise.
- DecreaseSpeed - Tests that speed decreases if the boat is above the minimum speed and stays the same otherwise.
- CheckCollisions - Tests that when a boat collides with obstacles that it takes the correct damage, slows down and the obstacles are removed from the lane.
- ApplyDamage - Tests that the correct damage is applied to the boat.
- CheckIfInLane - Tests that this returns true if the boat is in the lane and false otherwise.
- UpdateFastestTime - Tests that the fastest time is updated correctly, including time penalties.
- IncreaseTiredness - Tests that tiredness is increased if below the maximum and stays the same otherwise.
- DecreaseTiredness - Tests that tiredness is decreased if above the minimum and stays the same otherwise.
- Reset - Tests that all affected values are reset to their defaults.
- ResetFastestLegTime - Tests that the fastest leg time is reset to default.
- GetProgress - Tests the correct progress is returned before and after finishing.

### Goose:

- ChangeDirection - Tests that the goose always changes to a valid next direction.
- Move - Tests that the goose only moves if it has room in the lane to move forwards in the direction it is facing.

### Lane:

- SpawnObstacle - Tests that obstacles are only spawned if the obstacle limit won't be passed.
- RemoveObstacle - Tests that an obstacle is always removed if it exists in the lane.

### Leaderboard:

- UpdateOrder - Tests that the positions on the leaderboard are correctly updated based on leg time.
- GetTimes - Tests that the correct times are returned in the correctly sorted order.
- GetFinalists - Tests that the correct number of boats are returned from the top of the leaderboard in the correct sorted order.
- GetPodium - Tests that 3 boats are returned from the top of the leaderboard in the correct sorted order.

### SaveLoadGame:

- SaveGameString - Tests that all the necessary data from the game objects is correctly serialised into a valid JSON string.
- LoadGameString - Tests that a valid JSON string is correctly deserialized into all of the necessary data for the needed game objects.