The project is implemented in Unity, with a Personal Edition version.

# Gameplay

## Overview

You can choose between 4 factions: Lions, Sharks, Eagles and Rhinos.

There are 2 roles: driver and shooter, both collaborate to win the battle race and gain points for their faction.

Your objective is to defeat the enemy teams by destroying their cars.

In the arena there are also mobs, traps, jumps, audience... try to avoid dangers kill enemies and win for the glory of your species!

## Gameplay description

After the matchmaking ended (when the 4 teams have been formed) the game starts with the teams’ cars in different spawn points of the arena, then the driver is free to move everywhere in the whole map, doing jumps, collecting power-ups, trying to have collisions with other teams, collecting Rational or Instinct coin or running over the AI mobs.

Obviously, your driving ability is key to avoid the dangers of the arena and to let your shooter try to hit the enemy teams to knock them out of the game.

The shooter instead must use his weapon to hit both AI mobs and enemy teams, his aim skill is fundamental to eliminate the opponents and lead his team to the victory.

When you’re able to land a shot during a jump the audience will rise and throw a power-up in the arena, collecting it will give your team a boost in one of your stats.

Different factions have different car stats and a different class special ability, discussed in the 5.2.1, that will charge up during the game along with time and kills, either mobs or players.

Every team at the beginning of the match can see two different coins: one for his Rational side and the other for his Instinctive side. Picking up one (driver) or shooting it (shooter) will make the other disappear, forcing you to make a choice between your human side or your beast one.

Once you have collected one, you will have to complete a task to get a boost to the respective stats of the side you have chosen, anyway a detailed description will be presented in chapter 5.2.5.

Bumping with your car into a mob will damage it, while bumping into an enemy car will damage both cars differently, basing on their resistance stat. Bumping into walls do nothing to your car.

The game end when only a team remains.

If at the end of 15 minutes there are still 2 or more teams then the one with more health is the winner. And if it’s a tie also for the health? Then a 2 minutes overtime starts, and the teams must cause the opponent more damage that what they take, and at the end of the 2 mins, if there still isn’t a winner the game is tied.

In the arena there will be traps the driver should avoid or the shooter can activate from distance, discussed in chapter 5.2.2.

Along with traps, the arena will be populated with mobs of different type and dimensions, a full list will be presented in chapter 5.2.3.

The audience will have a part in the game, a full explanation of audience hype and power-ups will be presented in chapter 5.2.4.

### Factions characteristics and abilities

Each faction has different value of statistics and different special abilities, one for attack and one for defense. They can be charged with time for the driver and with damage and kills, both players and mobs, for the shooter.

The stats are:

* **Attack:** it affects the amount of damage the shooter does with his weapon
* **Resistance:** it affects the amount of damage by collision you cause to others or you get
* **Health:** the health pool of the car, when it reaches 0 your team is eliminated
* **Speed:** the maximum speed the car can reach
* **Agility:** it affects the way curves are done
* **Fire rate:** (Hidden) regulates how fast each faction weapon can fire

#### Stats

Here’s the full list of each faction its stats value:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Property** | **Lions** | **Sharks** | **Eagles** | **Rhinos** |
| **Health** | 1200 | 1000 | 800 | 1500 |
| **Attack** | 9 | 7 | 5 | 7 |
| **Fire rate** | 6 | 7 | 9 | 5 |
| **Resistance** | 6 | 7 | 5 | 9 |
| **Speed** | 6 | 7 | 9 | 5 |
| **Agility** | 7 | 6 | 9 | 4 |

#### Special abilities

And here’s the list of each special ability, divided by faction:

##### Lions

|  |  |  |  |
| --- | --- | --- | --- |
| **Ability** | **Name** | **Player** | **Description** |
| **Attack** | Grenade | Shooter | Throws a grenade causing massive damage |
| **Defense** | Roar | Driver | Makes all cars spin on their position, for a limited amount of time, within a certain range. |

##### Sharks

|  |  |  |  |
| --- | --- | --- | --- |
| **Ability** | **Name** | **Player** | **Description** |
| **Attack** | Bite | Driver | Throws a grenade causing massive damage |
| **Defense** | Shark skin | Shooter | Reduces all incoming projectiles damage and cancels all incoming collisions damage |

##### Eagles

|  |  |  |  |
| --- | --- | --- | --- |
| **Ability** | **Name** | **Player** | **Description** |
| **Attack** | Net | Shooter | Throws a net, blocking for a limited amount of time all players hit |
| **Defense** | Wind | Driver | Deflects all incoming projectiles for a limited amount of time |

##### Rhinos

|  |  |  |  |
| --- | --- | --- | --- |
| **Ability** | **Name** | **Player** | **Description** |
| **Attack** | Charge | Driver | Charges furiously at a higher speed and increases caused collision damage |
| **Defense** | Shield | Shooter | Creates a shield around the car with a health pool and no time limit |

### Traps

To make life harder to the teams, many traps are spread throughout the whole arena.

They obviously need to avoid them, but in some cases, they can be activated at the right moment to damage the enemy teams.

Here’s the list of all the traps present in the game:

* **Spin Trap:** if a car run over it, it causes the car to spin around for a little amount of time
* **Mud:** a pool of mud in which the cars go much slower
* **Mine:** an explosive mine that detonates on touch, it can be activated on distance by a shooter to damage opponents’ cars. Respawn after 30 seconds.
* **Geyser:** it lifts the car for a while, causing low damages over time and exposing it to other teams’ projectiles
* **Meteoritic Rain:** After 5 and 10 minutes, a meteoritic rain will fall in the arena, trying to hit teams’ cars and causing massive damage to them

### Mobs

To make the environment more dynamic mobs will be spawned during the match.

They are of 3 types and dimensions, and they have different purposes:

* **Spider robot:** organized in group, they can’t hurt the team’s cars, in fact they can be killed easily by running over them
* **Tank robot:** it guides the group, it doesn’t hurt the players, but can’t be killed by simply running over it, in fact a collision with it will cause the players’ car to bounce.

It can be killed only by the shooter with his projectiles or special abilities.

When a car kills the last small robot spider of its group, the leader will follow the car till its destruction, trying to have collisions with it obstructing the team game.

* **Goliath:** spawns at the center of the map at mid match (around 7:30), targeting the players who enter its range of attacks.

A special medal will be given to the players of the team that succeed to kill him and a score board of the players with more medals will be online, granting, at the end of the season, an in-game reward to the first positions.

### Audience Hype

Another important mechanic is the management of the Audience.

Audience in the arena is composed by all the 4 factions’ supporters and they will react to their champions doing acrobatic jumps on ramps.

Ramps are of 2 types:

* **Single:** you can execute the jump in only one direction
* **Double:** the jump can be executed in both directions, paying attention not going short and falling in the trap between and with the possibility of an aerial collision with other teams’ cars

Each faction has its own hype bar and it can be raised only by the team of the same faction the amount of bar progression depends on 4 factors:

* The **max height** reached in the jump
* The **flight time**
* **Hits on target** while on air
* How the **car lands** on the ground

In the last 2 minutes of the match the progression is doubled.

When the bar is completely full it will automatically reset to 0 and the audience will throw a power-up in the arena, activated on passage only by the team of the same faction.

Here’s the list of the power-ups:

* **Immunity to traps** for 30 seconds
* **Invisibility**, edges can be seen, for 30 seconds
* **Medi Kit**: restore 20% of lost health, health cannot go over 100%
* **Bonus charge** to both driver and shooter **special abilities** of 20% of the bar

### Reason vs Instinct

As it has been said before, players must face a choice as soon as they spawn, a choice between their rational side and their instinctive one, each one giving different bonuses to their stats upon completing the task given.

There will be 2 tokens, one with a brain on it (Reason) and the other with jaws (Instinct), players can decide their team side by running over or shoot a token, which will automatically make the other one disappears.

As soon as the team has decided his fate a task will be given to him, here’s the list of the different tasks:

* Reason:
  + Don’t get hit from enemies’ projectiles for 1 minute;
  + Avoid 3 collisions;
  + Run over and kill 5 small robot spiders;
* Instinct:
  + Kill 5 mobs with your weapon or your special ability(shooter);
  + Cause 200 damage in total to other players;
  + Detonate 3 mines by shooting them.

As it can be seen, Reason is related to driving skills and will give a bonus to them (Speed and Agility), while Instinct is related to shooting side hence it will grant a bonus to Attack and Resistance.

## Controls

### Driver mode

|  |  |
| --- | --- |
| **KEYS** | **ACTION** |
| **W** | Go ahead |
| **S** | Go back |
| **A** | Go left |
| **D** | Go right |
| **L** | Use special ability |

### Shooter mode

|  |  |
| --- | --- |
| **KEYS** | **ACTION** |
| **Mouse L** | Fire |
| **Mouse R** | Activate special ability |
| **Mouse** | Camera movement |

## Interfaces

### Start menu

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### Characters selection

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### Match making

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### Loading

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### Game UI

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## Rules

* 4 teams, 8 players
* A role is given to the players for the whole battle, so they cannot change it during the match and cannot have both.
* When the health of the car becomes zero, the team is defeated, and the players are taken back to the menu.
* When a car is hit by an enemy bullet, its health decreases by an amount of damage that depends on the species’ characteristics.
* Bumping into an enemy car will damage both according to their respective resistance stat.
* Players can not shoot to themselves.
* The special ability of the team can be used only when it is completely charged.
* Players’ cars cannot leave neither the arena nor the car.
* The battle has a time limit of 15 minutes, set to prevent stalls. When time’s up, wins the team that has more health left. Otherwise a 2 minutes overtime starts. If at the end the teams have the same health left, then the game is tied.

## Scoring/winning conditions

The game can be win by defeating all others team before the time’s up.

If the time ends, the team with more remaining car health is the winner, if there isn’t a winner even in this case, a 2 minutes overtime starts and at the end if the health is still the same the match is tied.

## Modes and other features