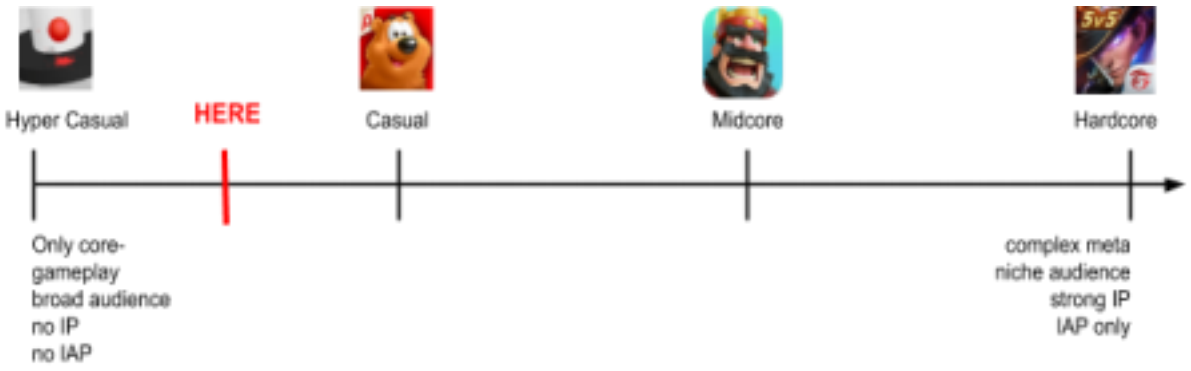
Casual Game Developer

Technical Challenge

Voodoo is a **mobile game** company based in France with studios in Barcelona, Amsterdam and Berlin. We design, develop and distribute worldwide fun games for everyone such as Paper.io 2, Hole.io, Ball Mayhem, Helix Jump and many more (+1 billion users).

We target the **mass market** so, both women and men, of any age, all around the world, called "**casual gamers**". Imagine both a fourteen-year-old boy and a fifty-year-old mother as your average gamers.

We are looking next to **create new experiences for our audience beyond the hypercasual** market (i.e. Archero) and this is where you come in!



The Challenge:

Definition

We would like you to implement the base for a fight simulator game like *Army Clash.*

Using Unity generate a project that has two armies of random units (specs below) and have the units fight until one side wins. Once that is in place, pick **one** (and only one) additional feature that in your opinion will differentiate your game and implement it.

Requirements

- Units must have 4 characteristics composed of ATK (Attack Points), HP (Health Points), SPEED (Movement Speed) and ATKSPD (Attack Speed).
- The color, shape, and the size will impact these characteristics.
- The shape of the units determines how units will find their target.
- Units will be either CUBE or SPHERE with either size of SMALL or BIG.
- Each unit can be one of these colors: BLUE, GREEN, RED
- Future additions of new colors & shapes should be as convenient to do.

Basic Unit Characteristics

100 HP	10 ATK
10 SPEED	1 ATKSPD

Shapes Characteristics

CUBE	**SPHERE**
Add 100 HP	Add 50 HP
Add 10 ATK	Add 20 ATK
Targets the closest enemy	Targets the enemy with less health left

Sizes Characteristics

BIG	**SMALL**
Add 50 HP	Remove 50 HP

Color Characteristics

BLUE	**GREEN**	**RED**
Remove 15 ATK	Remove 100 HP	Add 200 HP
Add 4 ATKSPD	Add 20 ATK	Add 40 ATK

Add 10 SPEED	Remove 5 SPEED	Remove 9 SPEED

Simulation Rules:

- Each army will be composed of 20 units on a flat surface facing each other.
- The user is able to randomize armies before the start of the simulation.
- All the combat will be hand-to-hand so the units will have to be close enough before they can attack.
- **ATKSPD** determines the cooldown between attacks. (i.e. bigger ATKSPD is slower attacks)
- On a hit, a unit deals **ATK** damage to the target (to simplify each attack will hit, there is no armor, buffs or evasion)
- Units die when their **HP** reaches zero (and are removed from the board)
- To find the enemy the unit can move at **SPEED** units per second (i.e. bigger SPEED is faster movement).
- After an entire army is defeated the user is taken back to the menu screen.

Evaluation:

- Include a readme that explains your architecture and the thinking behind your decisions.
- For the **one** additional feature, pick something that is reasonable to accomplish in the time frame. (if it's bigger: a technical design of your feature included in the readme above is also acceptable in lieu of actual code).
- The goal is to produce maintainable code that a team can extend for months to come.
- You are free to choose any concept/design pattern for the test (MVC, ECS, MVP, MVVM, Reactive etc.), please mention your intent behind it in the readme.
- Avoid or document any performance concerns.
- The audio is for the sequel, no need to spend time here.
- It must run out of the box without any compile errors :)

Please send us the following elements:

- Unity 2019.4 (LTS) is recommended for the test.
- Unity Project (everything needed to build the project)
- Please don't include the .git repo, or generated files to keep the zip file size down.
- Make a ZIP of the project and upload it via Wetransfer: https://wetransfer.com/
- Send the finished zip to the **HR TEAM**