

# 2-D video game documentation:

## Name to be defined

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**Runs on:** Windows, Linux and Mac. **Website:** Godot. **YouTube Chanel:** YouTube chanel.

The following chapters descrtibe the structure of the video game; character development, playability, style and animation.

## 1 Motivation

## 2 Color palette

## 3 Shapes and borders of the animation

## 4 Sound atmosphere

## 5 Physics

This chapter includes the physical concepts used inside the video game, brief explanation and equations used.

### 5.1 Nuclear decay

### 5.2 Ballistic movement of the oponents

For the moving enemies, a random ballistic motion has been used, it is defined as follows:

$$\bar{r}_i(t + \delta t) = \bar{r}_i(t) + \bar{v}\delta t \times n_{rnd} \quad (1)$$

where  $\bar{r}_i(t)$  is the position of enemy  $i$  at time  $t$ ,  $\bar{v}$  is the constant velocity of the particles and  $n_{rnd}$  is an uniform random number between  $[0,1]$ .  $n_{rnd}$  defines random path of the enemy. If it is not included, the movement becomes ballistic.

### 5.3 Boundaries

The battle field is defined as a rectangle, once the enemy interacts with the boundaries of the maps, a bouncing rule is defined, in our case **bouncing back rule**.