



Bigger Games - Game Developer Case

Design the simpler version of the game Ball Blast by Voodoo in 3D with features described below.

- You can use simple 3D geometric shapes to construct the world of Ball Blast. It consists of ground, side walls, top wall, a character that you can control sideways and shoot bullets, balls that moves.
- Game rules are the same. Balls spawn at a controlled pace. If any ball touches the player, game ends.
- Ball spawn rates, speeds, gravity, and HP should be variable.
- Game is level based. Each level has a set number of balls to spawn, with certain HP values. First 5 levels is hand picked which is stored in a json file (provided). Game should read this json every time it inits. After level 5, levels will be generated randomly similar to the level 5. Each level after 5 has the total ball HP (including splits) equal to **Level 5 total HP +-20% (randomized to 80% or 120% of level 5 total hp)**. This total hp should be distributed over 4 initial balls randomly that will eventually split to two. (sample generated level below)
- Game has really simple 4 screens: Start (waiting to play), Gameplay, Lost Screen, Win Screen. Start screen consist of only a touch to play text. Gameplay screen has simple current hp killed / total level hp text. Lost screen has you lost text with a score (current Hp killed) and a replay button. Win screen has you won text with a score and a replay button.
- Game does not have an upgrade system like the original, instead each level player gains increased bullets count and damage. (which is described in level json)
- Delay values in the json means the seconds before spawning that ball from the start of the level.

Sample Generated Level

Total hp = 126

```
{"balls": [  
  {"hp": 22, "splits": [ 12, 12 ], "delay": 0 },  
  {"hp": 6, "splits": [ 4, 4 ], "delay": 4 },  
  {"hp": 24, "splits": [ 15, 15 ], "delay": 10 },  
  {"hp": 6, "splits": [ 3, 3 ], "delay": 12 }  
]}
```