

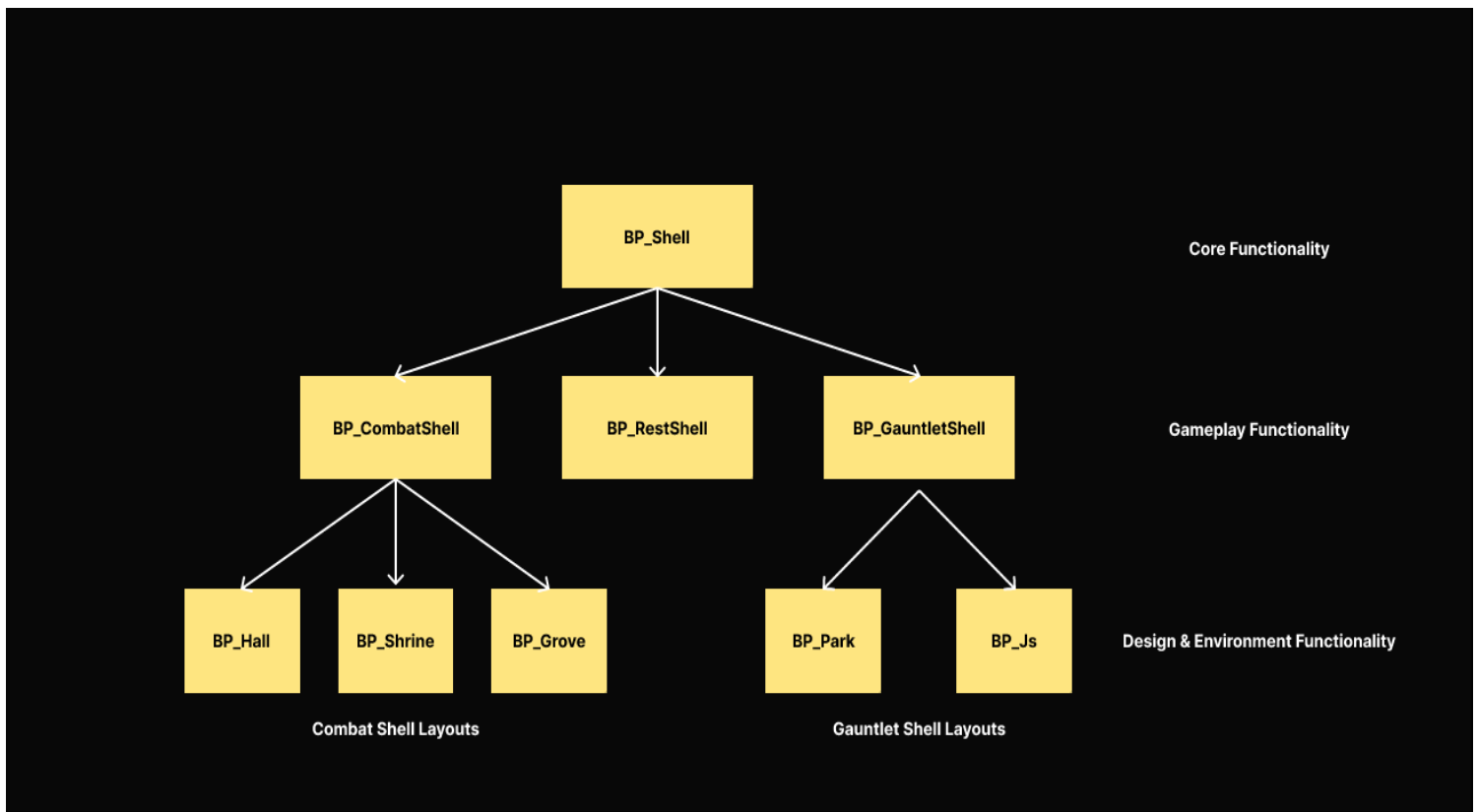
# Tea Time's Over Procedural Level Design

## High Summary

Players fight and navigate through a pseudo-random string of level shells. The shells are connected at randomly chosen doors. As such, the shells are designed to accommodate random rotations for a more dynamic player experience.

A string of level shells is called a Chunk. Chunks are typically 4-8 shells long, and contain a mixture of Combat shells and Gauntlet shells. Between chunks there is always a Rest shell to help the player progress.

## Inheritance Structure



## **Shell**

A shell is a blueprint actor which functions as our base unit for level generation. Shells have a Shell Type to determine its gameplay function, and are constructed on top of a Pancake which holds Sockets to be used by the C++ system.

### **Shell Types**

#### **Combat Shell**

The core of our game. These shells are assigned a difficulty rating, and spawn enemies until that difficulty is satisfied. Once all enemies in the room have been defeated, the exit opens, and the player may advance.

#### **Gauntlet Shell**

Gauntlets are challenging encounters for players. These shells typically have high difficulty ratings and provide a constant flow of challenge for the player. As enemies are defeated, new enemies take their place until the room has exhausted its difficulty rating.

#### **Rest Shell**

Time stops in these shells. They appear between chunks and restore time to the player. There is ALWAYS a rest shell between chunks.

### **Pancake**

A pancake is a singular static mesh which contains a shell's floor, walls, Sockets, and any other persistent objects (water or bridges typically). They are placed into Shell blueprints as a static mesh component, and all other art props are placed on top of them. Pancakes are only used at the Design & Environment Functionality level of our inheritance structure.

### **Sockets**

Sockets are a feature in Unreal Engine. They are invisible transforms that are attached to a static mesh. We utilize them on Pancake meshes for the sake of connecting our level shells, and spawning enemies. Our system finds sockets via substring, so it is VITALLY IMPORTANT that sockets cohere to the following naming convention.

#### RoomConnector

- These sockets are used to connect shells, spawn doors, and spawn walls.
- When placing RoomConnector sockets
  - The socket should be placed at floor level of the Pancake
  - The rotation of the socket should have the RED vector pointing 180 degrees away from the Pancake

#### EnemySpawn

- These sockets are used to spawn enemies
- When placing an EnemySpawn socket
  - Ensure the socket has a Z position of at least 200 to avoid collision issues when spawning