# Entity-Component-System Design

## CPSC 427 Winter 21/22 - Team Robinson (Team 13)
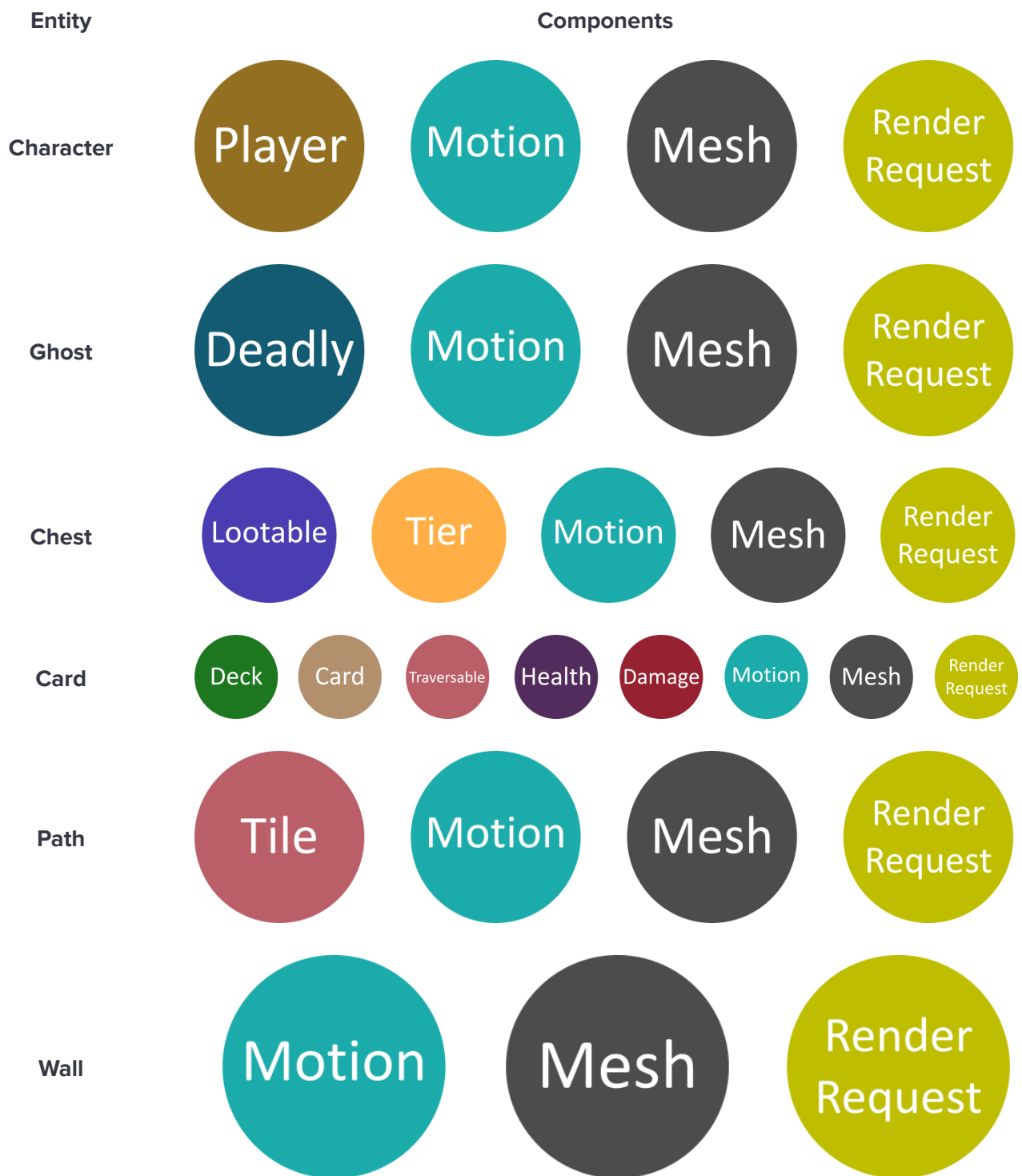
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## Components

| Component | Description |
|---|---|
| Player | Is a character the player can control |
| Deadly | Is an enemy |
| Biome | Is a biome |
| Card | Is a card |
| Deck | Is a card in the player's deck |
| Health | Has health (can take damage) |
| Damage | Does damage |
| Interactable | Is an interactable |
| Traversable | Is a tile that entities can move through |
| Lootable | Is lootable (i.e. a chest can be looted) |
| Tier | Has a tier (i.e. bronze, silver, gold) |
| Motion | Can move (i.e. has position, velocity, scale, etc.) |
| Animation | Has data for storing animation information |
| Mesh | Has data for storing vertex and index buffers |
| RenderRequest | Should display on screen |

Four new components have been added in Milestone 2, namely **Biome**, **Card**, **Deck**, and **Animation**. The **Tile** component has also been changed to a **Traversable** component, meaning that any entities that do not have the component act as a wall or obstacle.

# Entities

| Entity | Components | | | |
|---|---|---|---|---|
| **Character** | Player | Motion | Mesh | Render Request |
| **Ghost** | Deadly | Motion | Mesh | Render Request |
| **Chest** | Lootable | Tier, Motion | Mesh | Render Request |
| **Card** | Deck, Card, Traversable, Health, Damage | Motion | Mesh | Render Request |
| **Path** | Tile | Motion | Mesh | Render Request |
| **Wall** | | Motion | Mesh | Render Request |

**Tree:** Motion, Mesh, Render Request

**Health:** Animation, Interactable, Health, Motion, Mesh, Render Request

**Damage:** Animation, Interactable, Damage, Motion, Mesh, Render Request

**Biome:** Biome, Motion, Mesh, Render Request

Three new entities have been added in Milestone 2, namely **Health**, **Damage**, and **Biome**. The **Card** entity has also been updated with additional components (i.e. **Card** and **Deck**), whereas the **Wall** entity has had a component removed (i.e. **Tile**).