An Overview to Game Development Using Rust

A Toxic Relationship With Rust

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OmniMeet

November 25, 2025

Where am I?

1. What is Bevy?
2. Why use Bevy for game development?
3. How does Bevy works?
   - ECS Architecture
   - Imagine that you have a cow (Conceptual Example)
   - Bevy's Rendering Pipeline
4. Building a simple game with Bevy.
5. Bevy Basics
6. Core Content
7. Conclusion

Bevy Game Engine

Bevy is an open-source data-driven game engine built in Rust.

- It emphasizes simplicity, modularity, and performance.
- Bevy uses an Entity-Component-System (ECS) architecture.
- It provides a range of features including 2D/3D rendering, audio, input handling, and more.

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Advantages of Bevy

- **Rust Language**: Memory safety without garbage collection, zero-cost abstractions, and fearless concurrency.
- **ECS Architecture**: Promotes clean code organization, scalability, and high performance through data-oriented design.
- **Cross-Platform**: Deploy to Windows, macOS, Linux, Web (WASM), iOS, and Android from a single codebase.
- **Open Source**: MIT/Apache 2.0 licensed, actively maintained by a vibrant community.
- **Code-Driven**: Pure code workflow with no lock-in to proprietary editors (Official editor in development).
- **Modular Design**: Use only what you need - built as a collection of plugins you can mix and match.

Bevy vs Other Engines

Godot

Unity

Unreal Engine

- **Lightweight**: Lightweight compared to larger engines.
- **Flexibility**: More control over low-level systems and architecture.
- **Paradigm**: ECS is still not really popular in general.

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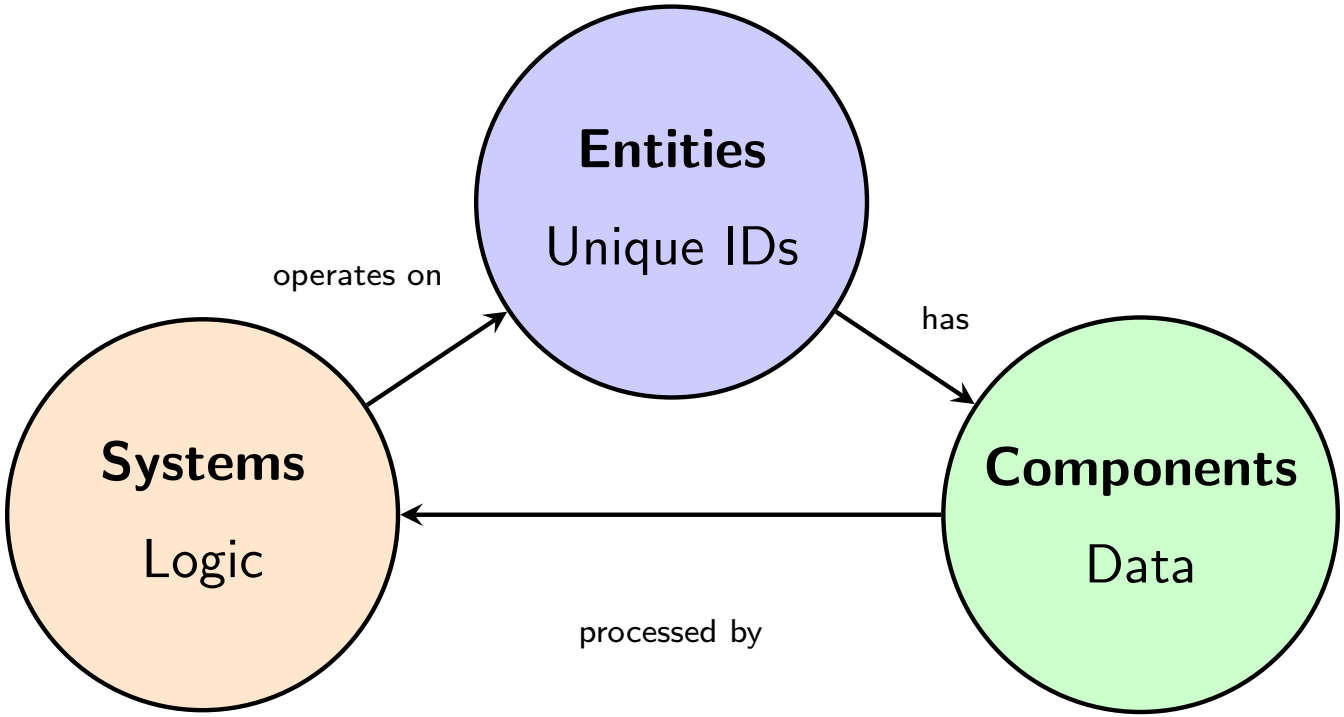
Entity-Component-System (ECS)



Entities

Unique identifiers representing objects in the game world

Components

Data containers that hold attributes of entities

Systems

Logic that operates on entities with specific components

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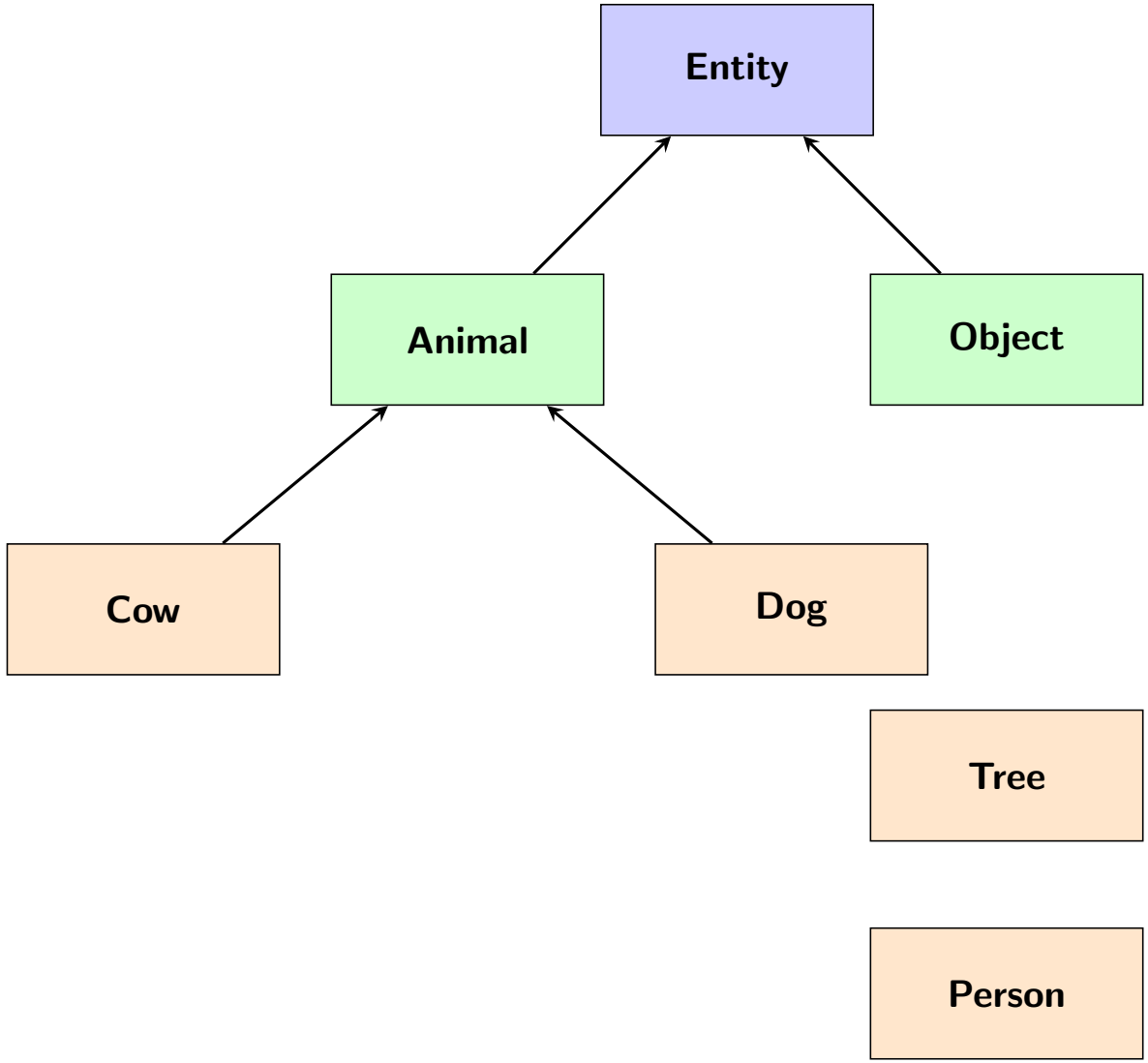
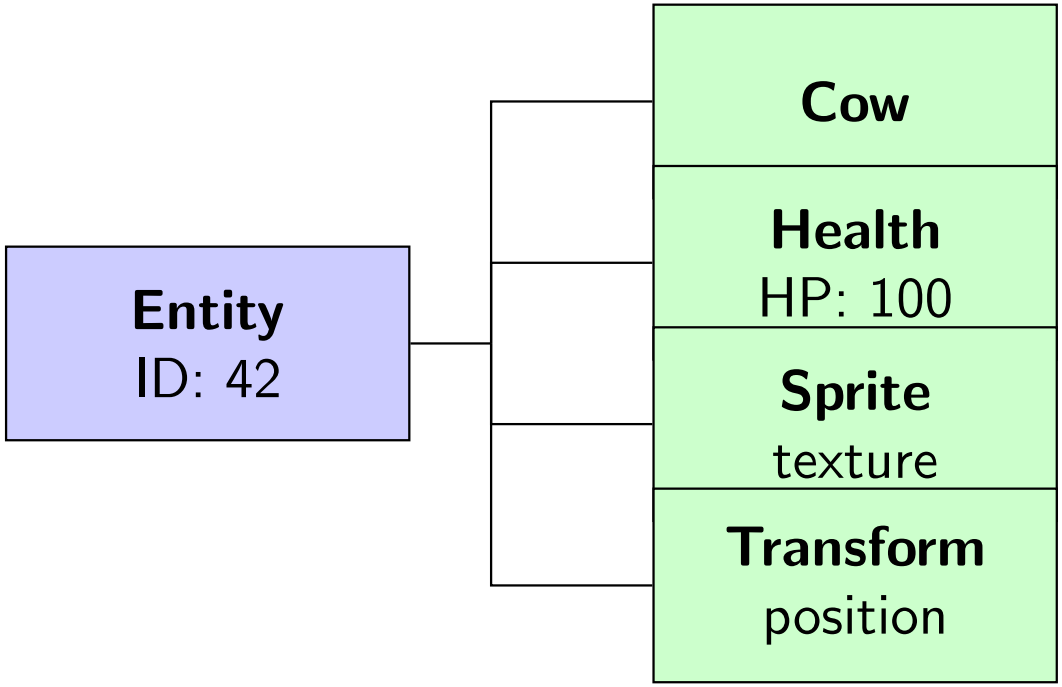
Traditional OOP Approach

Shitty Inheritance Hierarchy



ECS Approach

Nice and Clean Composition



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Rendering in Bevy

- Bevy uses a modern rendering pipeline based on wgpu.
- Supports both 2D and 3D graphics.
- Provides built-in shaders and materials.

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What is this presentation about?

So lets beging with an overview for what we can expect from this presentation.

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- How does bevy works?
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Two-Column Layout

Left Column

- Perfect for placing text next to an image or a chart.
- This column takes up 50

Right Column Remember to add an image named 'placeholder.png' in your project directory.

Showing Off Some Code

```
fn main() {
    println!("Hello, Beamer!");
}
```

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Thank You!

Questions?