



CCWC 2023

Aspects of VR Entity Component Systems

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Outline

Inheritance is not a panacea - Game design

Entity: Bicycle

Components

- Made of metal

- Can be used by humans

- Transportation

- Bought/sold

- Man made

- Popular b-day presents

Systems

- Physics 2D, 3D

Why not OOP?

Entity Component System

OOP is often used for libraries of components that have hierarchy

Example: Bicycle

Made of metal

Transmits electricity

Can be used by humans

Transportation

Bought/sold

Man made

Can be thrown

Entity Component System

OOP is often used for libraries of components that have hierarchy

Example: Car

- Made of metal

- Transmits electricity, generally not hurting occupants

- Can be used by humans

- Transportation – very fast

- Bought/sold

- Man made

- Cannot be thrown

- Needs fuel

Component Oriented System (COP)

Entities – each item in a scene

Components – groups of entities with functionality

Code & data split into: Entity-components and systems

System – acts on all entities containing the desired components

Entity Component Systems

Entity – general purpose object for each thing in a scene – no data and no methods

Components are made of entities – they hold information

Getting components in clusters (grouped by entity) from common pool

System should work with the components based on their entities