Sardines: A Networked Game

[Introduction: explain concept of game]

Architecture

Sardines is built on a straightforward client-server architecture... Reasons for choice... Citation about networking [peer-reviewed]...

[Discuss more elaborate architecture?]

Protocols

Transport Layer TCP: Reliable, etc... As much is set out in RFC 798 , where John Postel introduces the protocol:.... Provide reliability paragraph?...

Why not consider UDP?... Position updates every 0.1s...[1]

Application Layer Data sent with `Packet` struct... Break down serialisation...

While there isn't the space to break down every protocol in precise detail... [List packets used and what each

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As an example, consider how a player might join the lobby...

API

Sardines is built with C# in the Godot engine. It uses System.Net.Sockets to handle networking, and System.Runtime.InteropServices to serialize/deserialize packet structs. This report notes that...

Integration

Asynchronous I/O... Connection class...

Discuss: offline vs. online updates to position!

Prediction

Discussion of linear/quadratic prediction...

Technical breakdown of quadratic... * End on note of limitations!

Discussion of interpolation - period is half of

[GRAPHICSX: Handdrawn diagram of interpolation and prediction interaction?]

Testing

[SORT THIS LAST THING - BUT PLAN THE TESTING OUT BY 15th?]

[1] Could simplify even further with event-based - have server calculate all positions from key presses...