Cappy Project Proposal

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Cappy in a nutshell

A massively *multiplayer procedurally generated deterministic* 2D world with *deep systems* like an economic/trading system, factions, resource collection, combat, dynamic events, and house decoration (a true necessity) that allows for *a spectrum of experiences* ranging from casual to competitive.

(and caps are currency mined from stone in-game)

Product Thinking

- User: former Club Penguin players and people looking for a casual multiplayer experience
- Problem: lack of low commitment deep MMO experiences
- Vision: an MMO with cute graphics that provide players with deep systems and freedom / autonomy
- Strategy: a multiplayer hub world in the form of a browser-based / desktop client

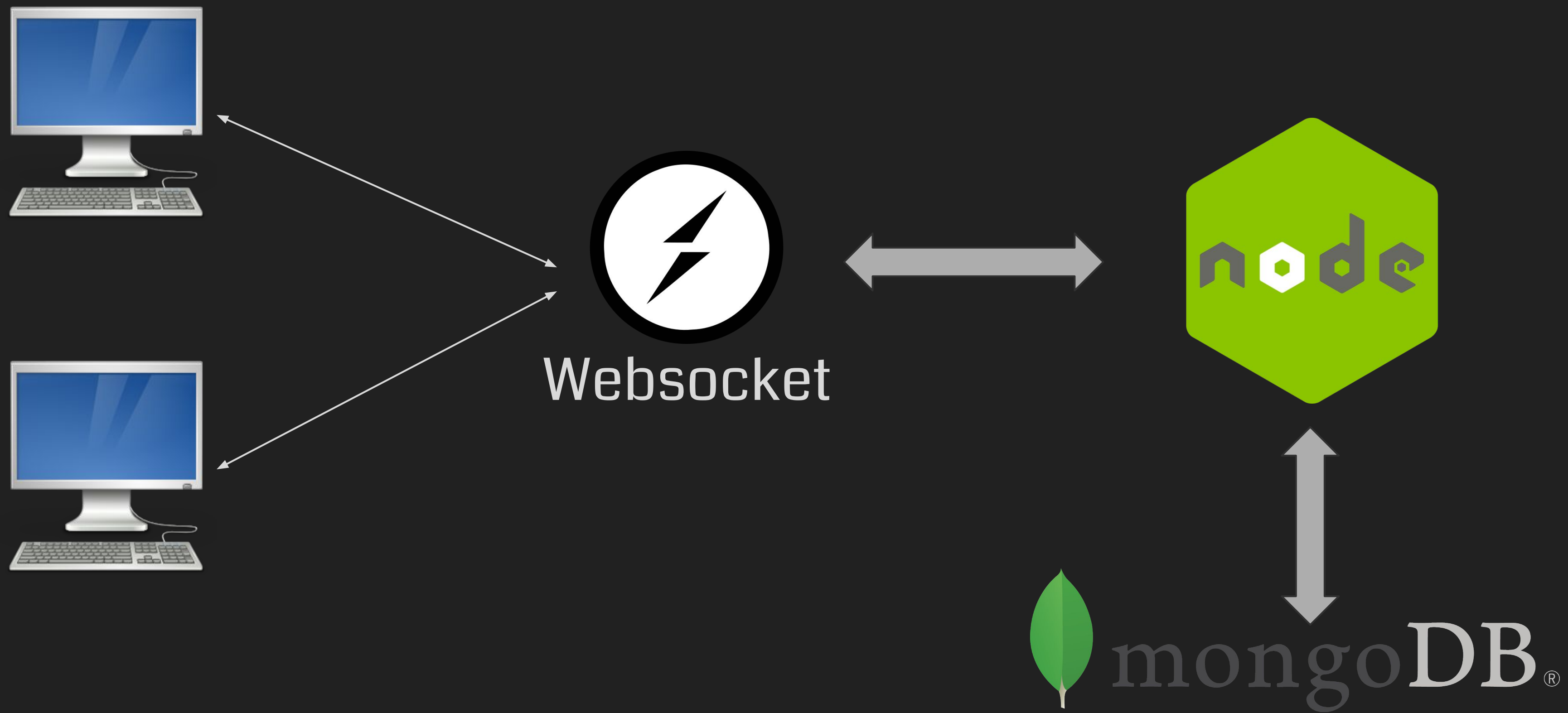
Goals:

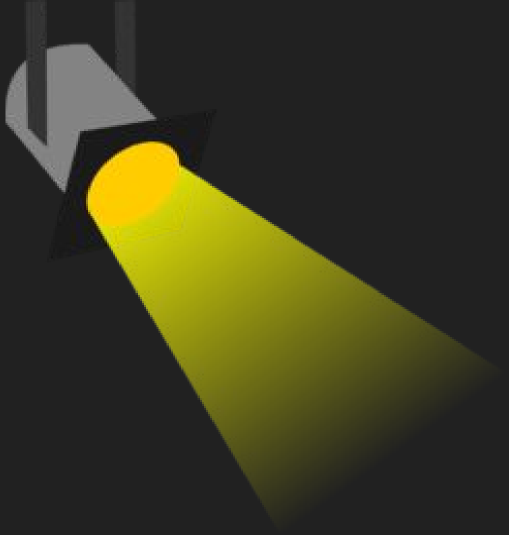
- No microtransactions
- Minimal lag
- 5 players on server
- No crashes
- Minimal security issues
- Custom character designs

Features:

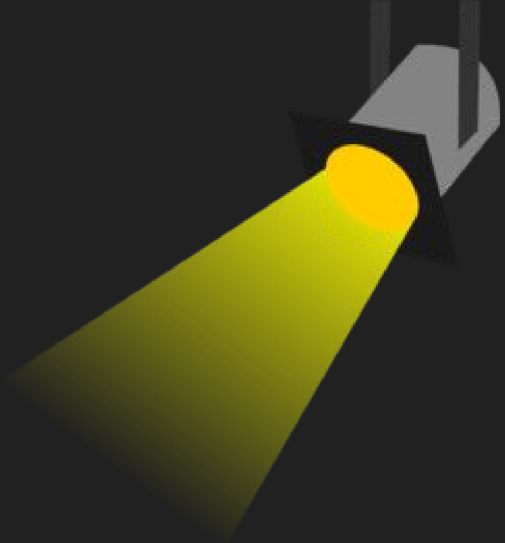
- Friends
- Resources
- Economy system
- Political system
- House decoration
- Procedural world
- Combat
- Dynamic events
- Music

Stack





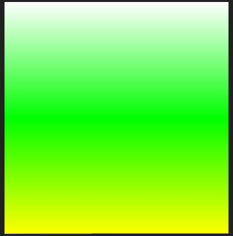
MVP



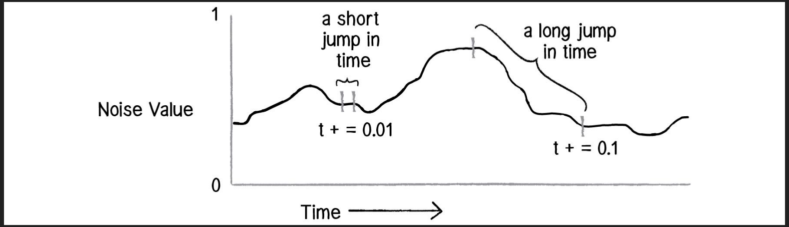
multiplayer environment with chat communication

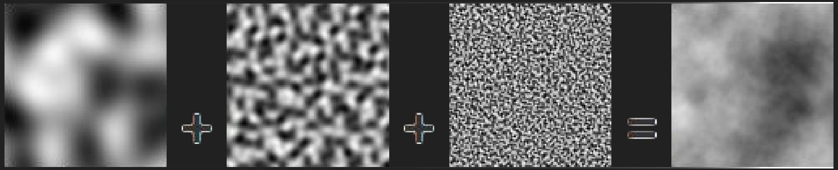
Procedural Generation

Gradient: a simple linear vertical and horizontal gradient of biomes



Perlin noise: layer perlin noise of different frequencies on each other to create a *smooth* random landscape and set rules based on noise levels (noise represents elevation, moisture, climate etc.)





Low-Latency Networks

- Need to develop a real-time API that will interface with our two platforms
- Can accomplish this in the following ways:
  - HTTP streaming
  - HTTP long-polling
  - WebSockets
  - Webhooks
- We have decided to implement our networks using socket.io, a NodeJS framework for using WebSockets, because of its greater support and easy integration with Node.