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# NOTEPAD

Product: NotePad, A networked, collaborative sheet music editor

## Target Customers

- Amateur musicians and music teachers / students

## Objective

- Provide an easy-to-use collaborative environment for musical composition or instruction

## Scope

- A client/server architecture enabling cooperative creation, modification, and playback of simple musical scores
- Users work together on one piece of music, adding and editing staves, notes, etc., much like collaborative text editors

## Why is this interesting?

Music is naturally a creative exercise; a collaborative environment allows artists to trade and test suggestions immediately, allowing for faster exchange of ideas.

# Software Architecture

Language: C#

Platform: .NET, Mono

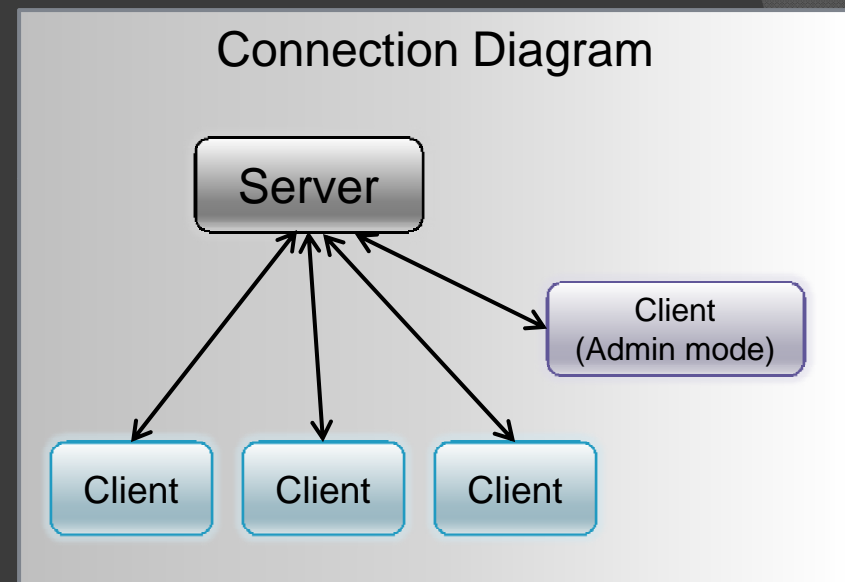
Modules:

Server

- Accepts Internet connections from clients
- Responsible for state management
- Handles edits to active sheet music
- Relays chat messages to all clients

Client

- Sheet music editor
- Interactive chat service
- Music playback (MIDI)
- Can connect to server as “admin” for additional control privileges



# Primary Challenge: Document State

The server must:

- ⦿ Coordinate edits so all clients see the same state
- ⦿ Somehow resolve or prevent conflicting edits
- ⦿ Allow the clients to present a smooth editing interface

Numerous considerations required in client interface, document permissions, and network state management make this difficult.

Could minimize development risks by choosing coarser interface if necessary:

- ⦿ Only allow edits to “checked out” portions of a song
- ⦿ Resynchronize on every check-in