The Game of Set

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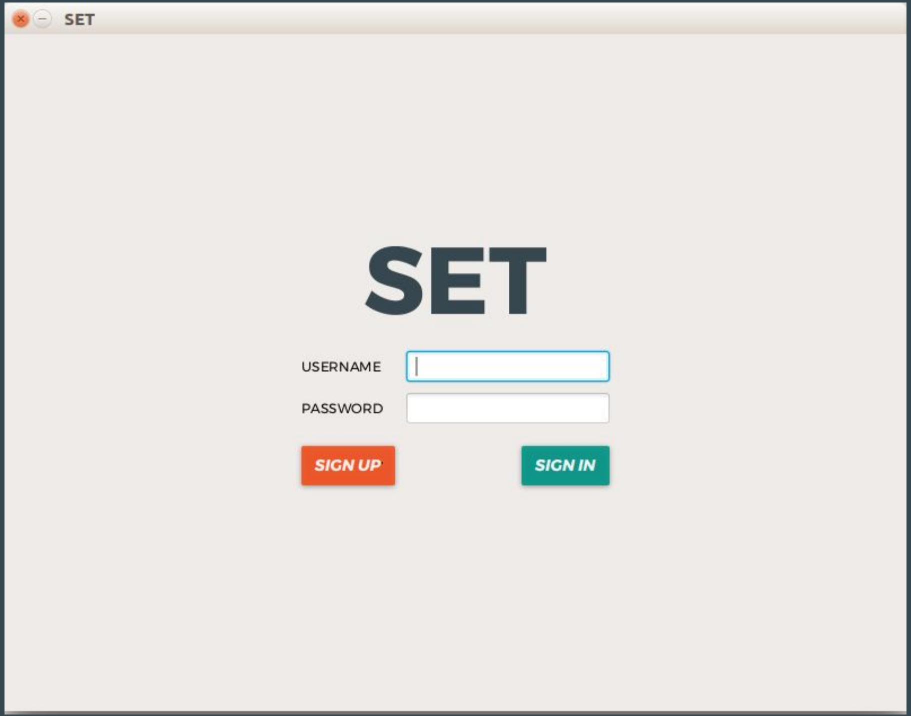
Design Goals

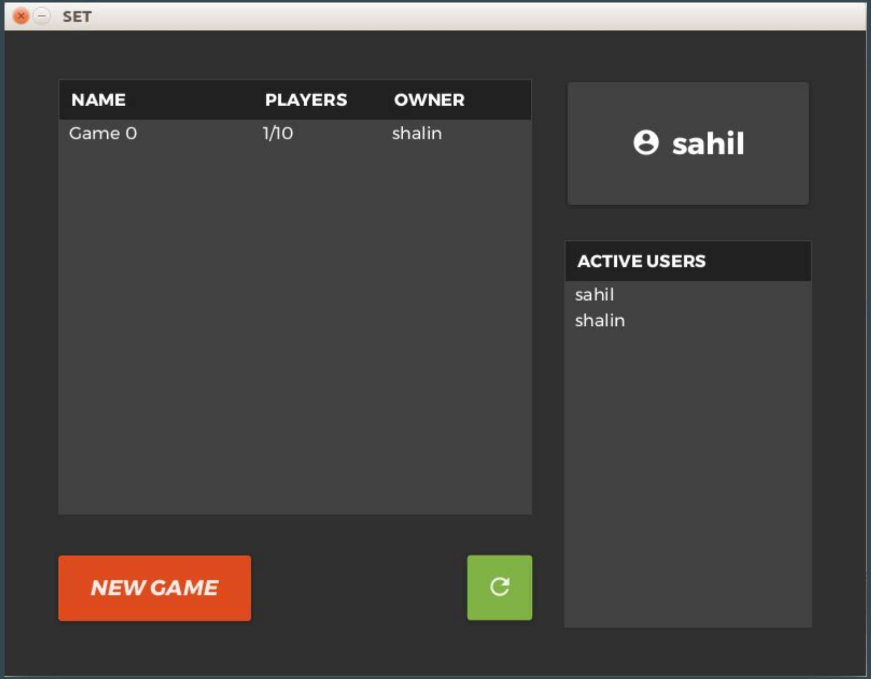
Goals:

- Robust & Reliable
- Smooth User Experience
- Modularity

Authentication



Lobby + Room

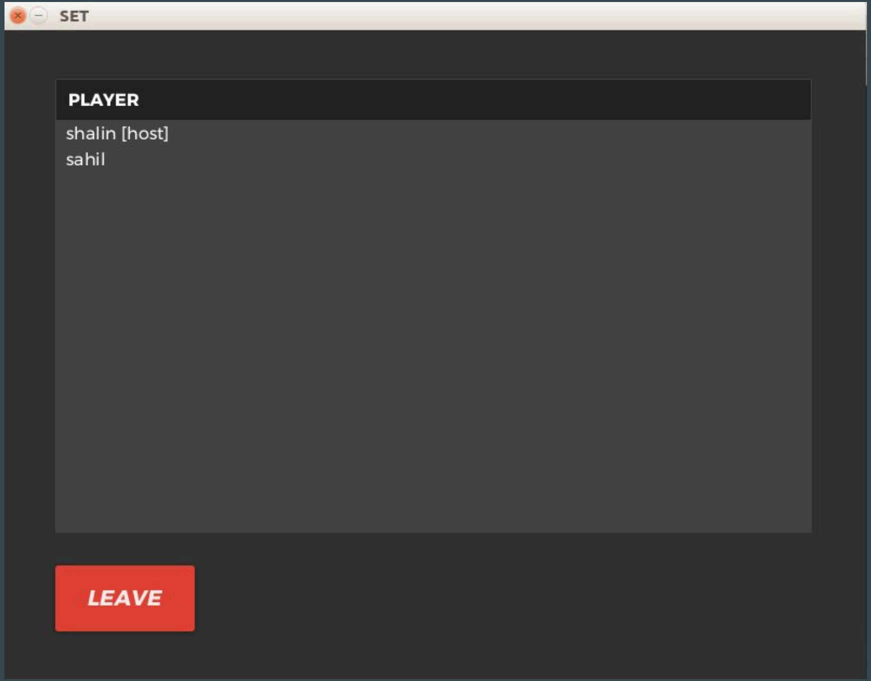


SET

NAME	PLAYERS	OWNER
Game 0	1/10	shalin

sahil

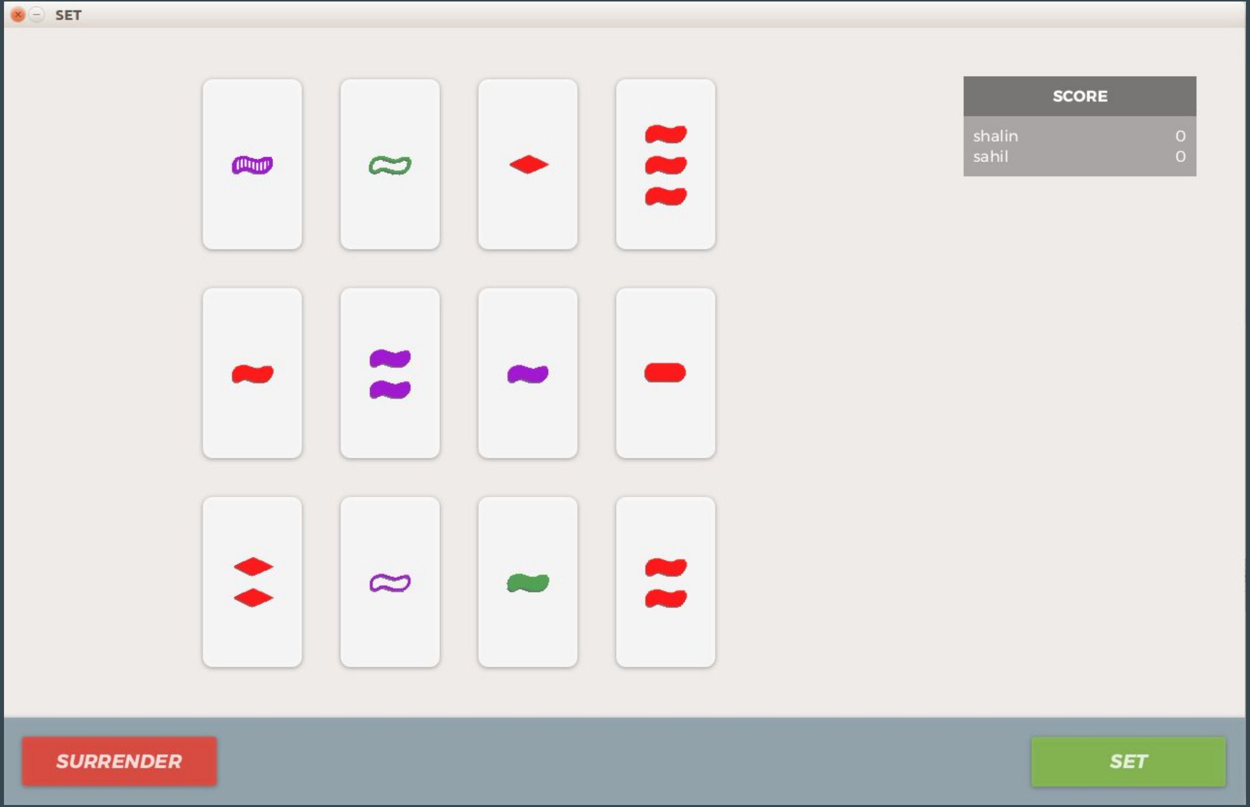
ACTIVE USERS
sahil
shalin



SET

PLAYER
shalin [host]
sahil

Game



SCORE	
shalin	0
sahil	0

Client-side Decisions

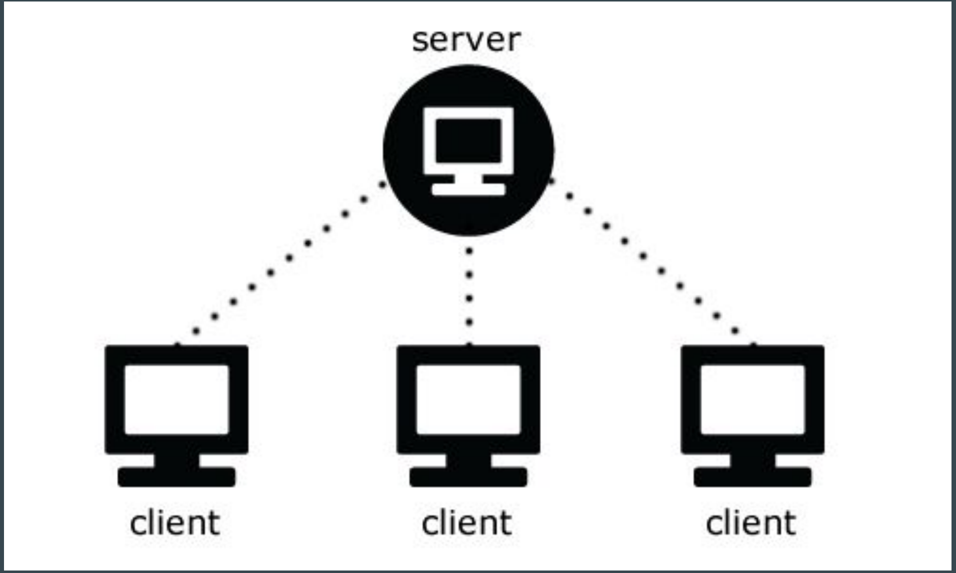
- JavaFX8 vs Swing
- Minimizing Logic
  - Client avoids logic as much as possible to avoid inconsistency.
  - UI elements send messages and updates are performed based on data in received responses.
- Multithreading (Task and runLater)
  - All game and window state updates are handled in one *Task*, which runs outside of the main GUI thread.
    - Allows updates without freezing UI.
    - Task is within its own class, separating UI from logic and data.
    - Manipulates 4 scenes, each its own object.
  - Within this task, UI updates are called with *Platform.runLater,* which allows adds the update into a queue for the main GUI thread to run as soon as possible.

Database Decisions

- MySQL
- Hand out connection for every interaction
- Created objects to simplify queries into function calls

Server-side Decisions

- Multithreaded design
  - Main process
  - Player thread
  - Game thread
  - Thread communication via pipes
- Class to store player info
  - username
  - Input/Output stream objects
  - References to pipes between player & game threads



Server-Client Communication Decisions

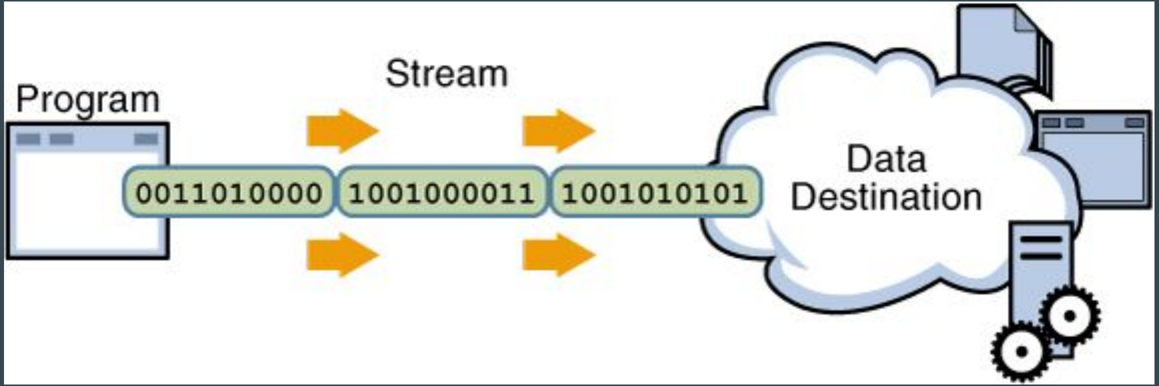
Publish-Subscribe:

- Server *publishes* messages to users *subscribed* to that specific event
- Ex: When a user clicks on the *SET* button, the user sends out a SetSelectMessage, and all users currently in the game receive a SetSelectResponse.

Server-Client Communications

Messages/Responses:

- Object Hierarchy approach
  - Each Message is its own class that inherits from a *Sendable* interface
  - Allows for easy sending to clients/server



Questions?