Milestone 3

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Game Overview

Crazy Eights Overview

- Turn-based card game.

- Match the top card by suit or rank.

- Eights are wild and set the suit.

- First player with no cards wins.

Important Concepts

- Shared board: top card, current suit, turn order.

- Private hands stay hidden.

API Endpoints

Game Management Endpoints

- POST /api/games

- POST /api/games/:id/join

- POST /api/games/:id/start

- GET /api/games/:id/state

Game Action Endpoints

- POST /api/games/:id/play

- POST /api/games/:id/draw

- POST /api/games/:id/end-turn

Deep Dive: Play Card

Route
 POST /api/games/:id/play

Purpose
 Discard a card and update game state.

Validation

- Game exists

- Player in game

- Game in playing state

- Correct turn

- Player owns the card

- Card matches suit or rank

- For eights: suit choice required

State Updates

- Deal hands

- Set top card

- Set current suit

- Pick first player

Events

- game:state:update

- game:turn:changed

Deep Dive: Draw Card

Route
 POST /api/games/:id/draw

Purpose
 Draw one card from the deck.

Validation

- Game exists

- Player in game

- Game in playing state

- Correct turn

- Player requires to draw a card

State Updates

- Add card to player hand

- Remove the card from deck

Events

- game:hand:update

Socket.io Events

game:state:update
 Shared update.
 Top card, current suit, turn, deck count.

game:turn:changed
 Sent after a turn ends.
 Shows next player.

game:hand:update
 Private.
 Only to the player.
 Used for draws or discards.

game:player:joined
 Lobby update.
 Sent to all players.

Public and Private State

Public State

- Current turn

- Top card

- Current suit

- Cards left per player

- Deck count

- Game phase

Private State

- Player hand

- Drawn card

- Suit selection from an eight

Edge Cases and Security

Edge Cases

- Deck empty

- Illegal plays

- Player draws but cannot play

- Two actions at same time

- Player disconnects mid-turn

Security Rules

- Server validates all moves

- Client never decides legality

- Private hands never broadcast

- Turn order strictly enforced

Summary

- Server is the single source of truth

- All actions validated

- Private and public data separated

- API endpoints support full Crazy Eights flow

- Socket.io keeps the game real-time