Technical Design Document

Introduction:

Ticket to Ride is a turn-based strategy board game where players compete to claim railway routes across North America. The objective of the game is to score the most points by connecting cities and completing destination tickets.

For our implementation of Ticket to Ride, we will be building a 2D game using the Unity game engine. The game will support multiplayer with up to 3 players.

Rules

1. Game Setup:

Each player starts with 45 train cars, 4 train car cards, and 3 destination ticket cards. The remaining train car cards are placed face down in a draw pile, and 5 cards are turned face up to form the train car card market.

1. Turn Sequence:

On their turn, a player can perform one of three actions:

* Draw two train car cards: The player draws two cards from either the face up cards in the train car card market or the top of the draw pile. The player can take two cards of the same color or two different colors.
* Claim a route: The player plays a set of train car cards that match the color and length of a route on the game board. The player places their train cars on the route to indicate that it is now claimed by them. If a route is already claimed by another player, the player must play additional train car cards to claim the route. Each player can only claim one route per turn.
* Draw three destination ticket cards: The player draws three destination ticket cards and must keep at least one of them. The other two cards are placed face down at the bottom of the deck. Destination ticket cards represent a set of cities that the player must connect with their train routes. If the player successfully connects all the cities on a destination ticket, they earn the points indicated on the card. If the player fails to connect all the cities, they lose the points indicated on the card.

1. Game End:

The game ends when one player has two or fewer train cars left. At this point, each player gets one more turn before the final scoring. During this last turn, players can only claim routes that are one or two train cars long.

1. Scoring:

Players score points for the routes they have claimed and the destination tickets they have successfully connected. Players lose points for any destination tickets that they have failed to connect. The player with the most points at the end of the game is the winner.

1. Game mechanics:

The game mechanics of Ticket to Ride will closely follow the rules of the original board game. Players will take turns drawing cards and claiming railway routes on the game board, using their cards to match the colors and lengths of the routes. Players will also have the option to draw destination tickets, which award bonus points for connecting specific cities.

At the start of the game, each player will be dealt a set of train car cards and a set of destination tickets. On their turn, a player can perform one of three actions: draw train car cards, claim a route, or draw destination tickets. Each turn, players will also have the option to discard train car cards to draw new ones from the deck.

The game will end when one player has only a few train cars left or when the train car deck runs out. At the end of the game, players will score points based on the length of the routes they have claimed, the destination tickets they have completed, and any bonus points earned for having the longest continuous route.

The game will be presented in a 2D top-down view, with the game board and player hands displayed on screen. Players will interact with the game using a combination of mouse clicks and keyboard shortcuts.