SEON-6441 Advanced Programming Practices
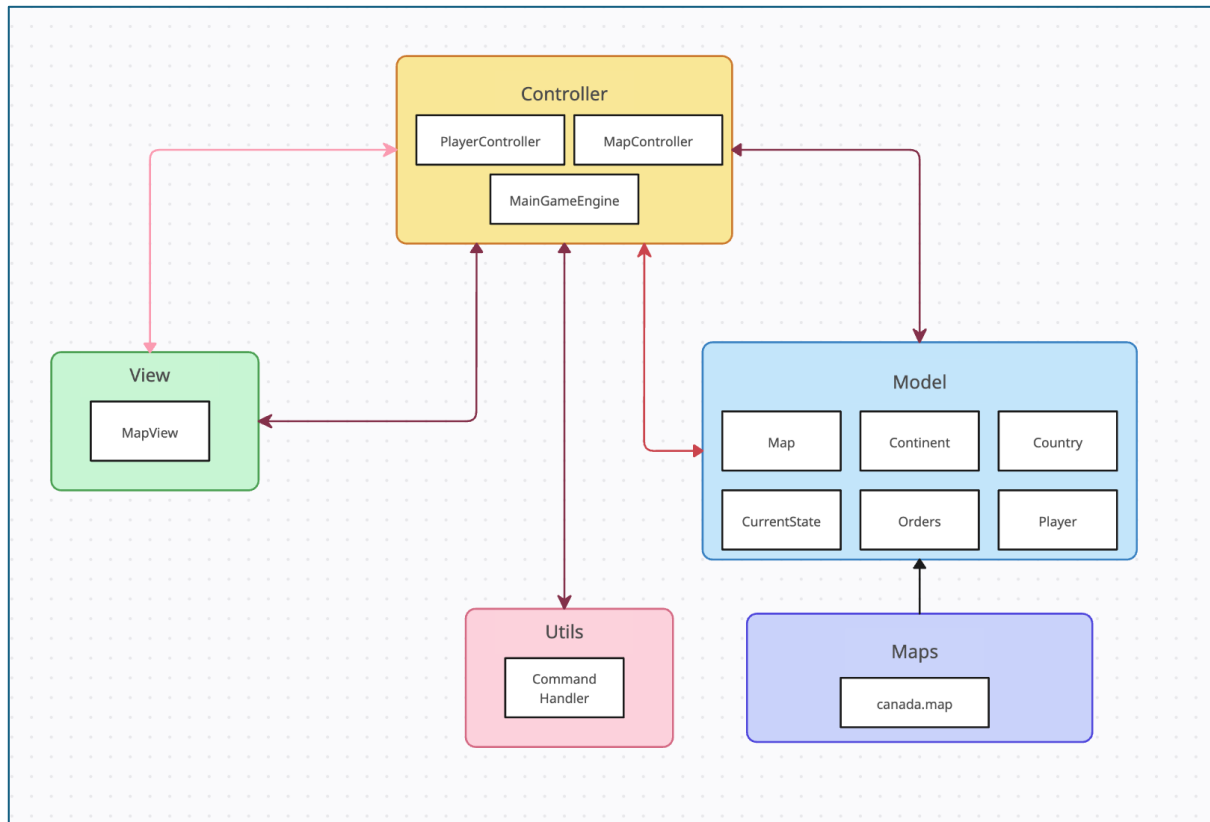
Group ADYST – Project Build 1 Architectural Design Document

Controller

- MainGameEngine: The MainGameEngine class handles the core gameplay logic for a map-based strategy game, processing user commands to load, edit, validate, and save maps, as well as managing players and their actions. It interacts with various controllers to perform operations like assigning countries, deploying armies, and executing orders.
- MapController: MapController class handles loading, editing, and saving maps in a game-like system. It parses map data from files, updates continents and countries, and manages borders between countries. It also provides functionality to edit countries, continents, and their relationships, including adding/removing entries and saving the changes to a file.
- PlayerController: The PlayerController class manages player actions in the game, including assigning countries to players, distributing armies, and handling deployment orders. It ensures proper country ownership, checks for sufficient armies, and tracks unallocated armies and unexecuted orders.

Model

- Map: The Map class that manages a collection of countries and continents, providing functionality to add, remove, and validate countries and continents. It also ensures that countries are connected and that continents form a connected subgraph, along with methods for handling neighboring relationships between countries.
- Continent: The Continent class models a continent, allowing the management of its countries. It provides methods to add or remove countries, set attributes for the continent, and format the continent's details as a string.
- Country: The Country class represents a country, allowing you to manage its neighbours and army count, and access its details like name and continent. It includes methods to add or remove neighbouring countries.
- Player: The Player class represents a player in the game, managing their name, unallocated armies, controlled countries and continents, and orders. It provides methods for assigning continents, issuing army deployment orders, and retrieving the next order the player has issued.
- CurrentState: The CurrentState class manages the current state of the game, including the list of players and the game map. It provides methods to add or remove players and retrieve the current list of players and the game map.
- Orders: The Orders class represents an order issued by a player, containing the command, target country, and number of armies to move. It includes a method to execute the order, which updates the number of armies in the target country for the specified player if the order is "deploy."

Utils

- CommandHandler: The CommandHandler class handles the parsing of commands. It processes a given command string, extracts the main command, and identifies any operations or arguments. It also provides methods to check the validity of operations and their arguments by mapping them into key-value pairs for further processing.

View

- MapView: The MapView class displays the game map, showing continents, countries, their armies, and neighboring countries. It provides an overview of each continent, its countries, and the connections between them.