Player

- RED
- BLUE

Direction

- NORTH
- SOUTH
- EAST
- WEST

GameModel

Methods:

- void placeCard(int row, int col, Card card): Place a card on the grid.
- Player getCurrentPlayer(): Get the current player's turn.
- boolean isGameOver(): Check if the game has ended.
- Player getWinner(): Determine the winner of the game.
- Grid getGrid(): Retrieve the current game grid.
- List<Card> getPlayerHand(Player player): Get the specified player's hand.
- void switchTurn(): Switch to the next player's turn.

GameModelImpl

Fields:

- Grid grid
- Map<Player, List<Card>> hands
- Player currentPlayer
- List<Card> deck

Methods:

- Implements all methods from GameModel.
- void executeBattlePhase(int row, int col): Handle the battle phase logic. + combo
- boolean canPlaceCard(int row, int col): Check if a card can be placed at the position.

Grid

Fields:

- Cell[][] cells
- int rows
- int cols

Methods:

- Cell getCell(int row, int col): Get the cell at specified position.
- void setCell(int row, int col, Cell cell): Update the cell at position.

- List<Cell> getAdjacentCells(int row, int col): Get adjacent cells.
- int getRows(): Get number of rows.
- int getCols(): Get number of columns.

Cell
Fields:

- boolean isHole
- Card card
- Player owner

Methods:

- boolean isOccupied(): Check if the cell has a card.
- void placeCard(Card card, Player owner): Place a card in the cell.
- void removeCard(): Remove the card from the cell.
- Card getCard(): Get the card in the cell.
- Player getOwner(): Get the owner of the cell's card.

Card
Fields:

- String name
- *Map<Direction, Integer> attackValues or* int[] attackValues (using indices for directions)

Methods:

- String getName(): Get the card's name.
- int getAttackValue(Direction direction): Get attack value for a direction.

GridConfigReader
Methods:

- Grid readGrid(String filename): Read the grid configuration and return a Grid object.
- **Grid Configuration file** The file's format is as follows
- ROWS COLS
- ROW_0
- ROW_1
- ROW_2

CardConfigReader
Methods:

- List<Card> readCards(String filename): Read the card configurations and return a list of Card objects.
- **Card Database File** This file's format is a list of cards
- CARD_NAME NORTH SOUTH EAST WEST

- `CARD_NAME NORTH SOUTH EAST WEST`
- `CARD_NAME NORTH SOUTH EAST WEST`

TextualView

Methods:

- String render(GameModel model): Generate a string representation of the current game state.
- void display(GameModel model): Output the game state to the console.

Helper Classes and Methods

In GameModelImpl

- Helper Methods:
    - void flipCard(int row, int col, Player newOwner): Flip the ownership of a card.
    - List<int[]> getEnemyAdjacentPositions(int row, int col, Player player): Get positions of adjacent enemy cards.
    - boolean battleCards(Card attacker, Card defender, Direction attackDirection): Determine if attacker wins.

In Grid

- Validation Methods:
    - boolean isValidPosition(int row, int col): Check if the position is within grid bounds.