Group Project - Specifications

Database Project

In this project, you will design and develop a database backend for a board game. Further details about this project will be provided in each milestone (each submission deadline in the end of weeks 2,4,6,8).

Project Deliverables and Submission

(1) Documentation (Word format*****) is required – each group must fill up the template provided in each milestone.

* PDF files are not allowed

(2) ER diagrams will be available on Vertabelo.com.

(3) SQL script files required to deploy each project phase, according to specifications (when required)

Peer Evaluation Form (PEF)

For each project milestone, a confidential Peer Evaluation Form (PEF) must be filled out and submitted in each group project's milestone. Every team member evaluates himself/herself and each fellow team member regarding participation in the project every two weeks. Peer evaluations could affect your and your teammate's grade; thus, it is in your best interest to ensure that these evaluations are conducted fairly. If an individual has taken on extra responsibility, such as organizing the group, extra effort for a particular model development, editing submissions for consistency, or assembling the whole project components, these activities should be indicated by group members and extra credit will be assigned to that person. Other factors considered are group leadership or ability to plan project and help keep team on track, contribution of each member to the overall project, quality of contribution, development of proposal and problem statement, contribution to the models common to all the members such as use case diagram, class diagram, and other diagrams. Without this form, your project grade will be zero.

Play-Color Game (PCG) – Specifications

Objective

Design the database to support the "Play-Color" game's backend according to the following specifications and requirements.

This game was originally designed to be implemented as a webpage game. In this project instead, you will design the backend database only (no interfaces), and all tests and simulations will happen using SQL and command-line like statements.

Game Rules

- A referee must start each game round stablishing some initial parameters:
  - Number of players (2-5) – referee is NOT included here
  - Gameboard size (number of rows [3 to 8], and number of columns [3 to 8])
    - Min 3 x 3
    - Max 8 x 8
  - Number of available colors (2-8)
- When a referee starts a new gameboard, it must wait until the max number of players to join before actually starting the first round
- Each other player can list and decide to which gameboard they will join
- Each player must start by selecting a color
  - Color selection can be changed at any time
- In each round, each player can "paint" one cell of the gameboard either when
  - The position is NOT painted yet (still white)
  - Or the position is already painted by that same player (this is the case a player wants to repaint a cell with another color
- When a player paints a cell with color X, that players will steal all adjacent cells in all four directions if they are painted with the same color by other players
- A player can have only a "partial" view of the gameboard:
  - White cells
  - Cells "owned" by the player indicating which color was used
  - Cells owned by other players (without know who player owns them, neither which color they are painted)
- Games is over when all gameboard is fully painted
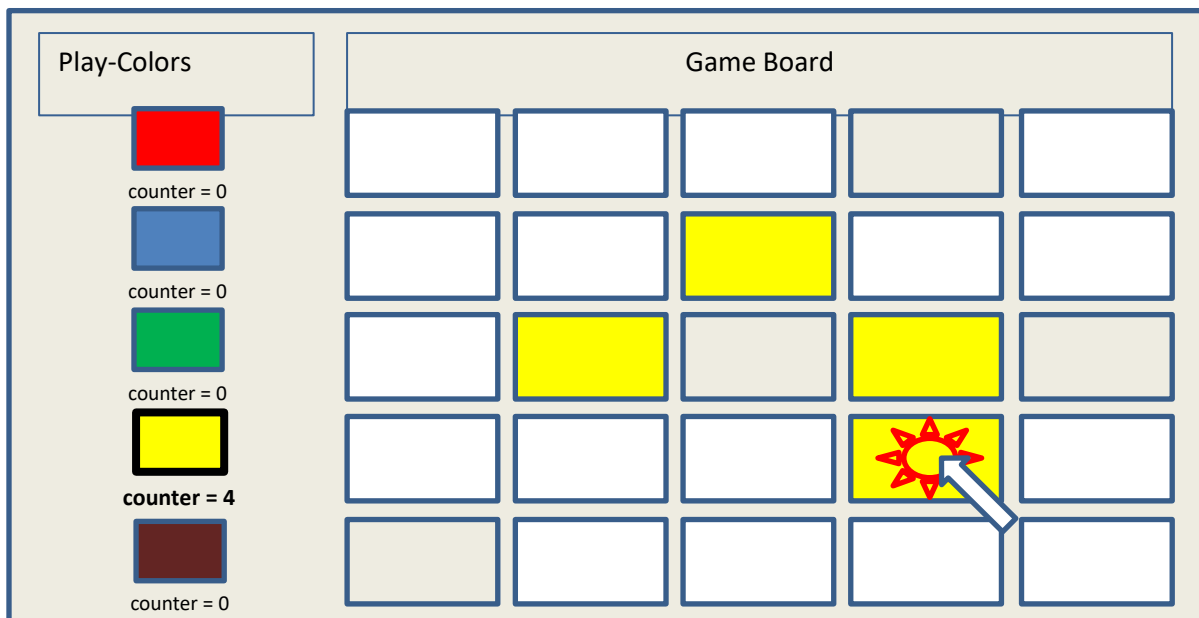- Wins the player with the greatest number of cells painted

Gameboard View – from Player A's perspective (example playing 5 x 5)

A) When game starts all cells are empty
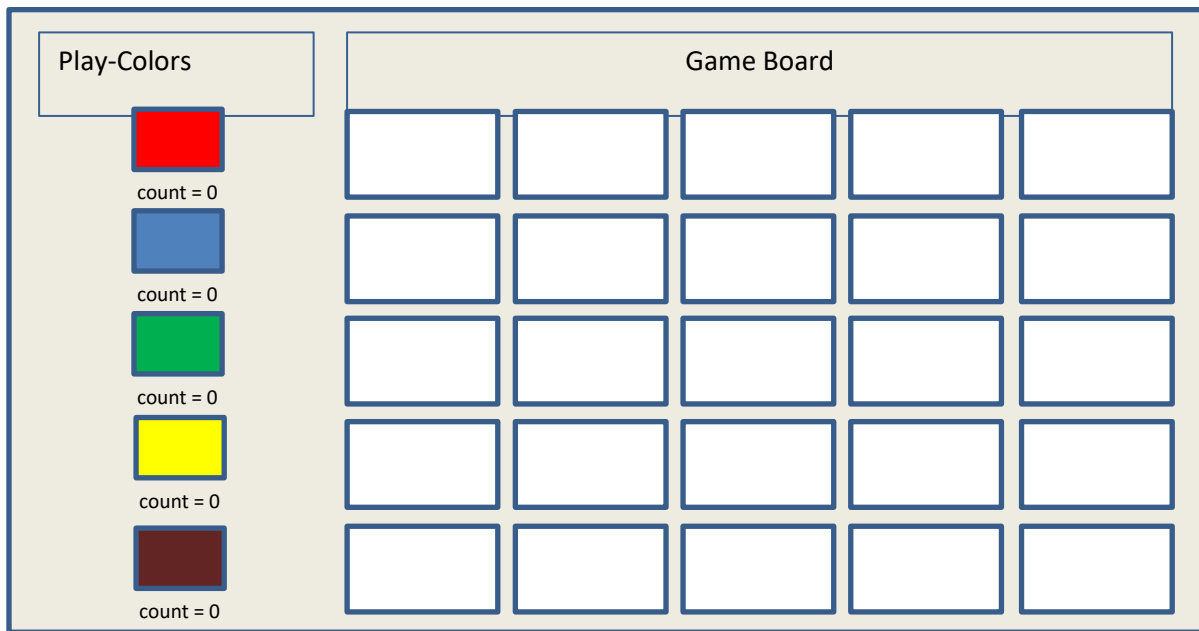
B) After player selects "yellow" and paints 4 cells – other gray cells are painted by other players

Future Requirements

- Allow any number of players to register with a Player-ID
- Any player can be a referee, except:
    - Each player can only be a referee in one single gameboard
    - When playing as a referee, player can NOT join any gameboard as a player
- Any player can join any gameboard still waiting for players (until complete the max number of players), except:
    - When playing in one gameboard, player can NOT play in another gameboard