

UML Diagram for Assignment 1

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Project design allows extendibility through Board, Cell, GameManager, Leaderboard, and User. Those classes are defined to accommodate extensions. All the board games have to hold a board, and all boards have to have some kind of cell. In addition to that, regardless of whether it is a board game or not, there should be a game manager in all games. And as it is in my implementation, the User and Interface classes are extremely beneficial to hold user data and accommodate any kind of leaderboard data.

For scalability, I have considered the case when a user demanded larger boards. I have limited the board size between 2x2 and 10x10, because it is extremely hard to solve puzzles bigger than 10x10 (which can be changed by adjusting parameters); however, I have implemented the output functions such that if the elements in a cell have a number with 2 digits, then I am extending the board to have a bigger width.

In addition to that, the program is implemented robustly so that the cases in which the user can disrupt the program have been covered, forcing the user to prompt expected input types both via code and instructions.