

Explanation of Design Patterns

The design patterns we used:

Information Expert: We assigned the GameGUI class as an information expert. The GameGUI contains both the SettingsController and BidController. It also updates the players' scores and announces who is the winner at the end of the game.

Creator: The creator pattern has been used for several classes. For instance; the Robot objects, Token objects, and Barrier objects are created & contained in the GameBoard class. And Bid objects are created & contained in the BidController. These are some examples of the classes in our program that follow the creator design pattern.

Low Coupling: By using classes such as BidController and ColorPalette, we are lowering the responsibilities of the GameGUI. This reassignment of responsibilities allows the GameGUI to be changed without affecting related classes. This is only one example of the low coupling design pattern being implemented in our program.

High Cohesion: To keep classes related and focused, we created classes for each game piece, this way not just one class was responsible for storing the data of a game and implementing the role of the game piece. Another example of high cohesion in our design is with the creation of the BidController; by giving the BidController the responsibility to create and store Bid objects, we take a significant amount of responsibility away from the GameGUI. These are only a couple examples of the high cohesion design pattern being implemented in our program.

Controller: We implement multiple controllers within the controller package of our program. Examples of controllers from our program are BidController and SettingsController. The bid input by the user is passed to the BidController, which controls the players bid throughout the game. The SettingsController is passed all the settings chosen by the user in the SettingsMenu and controls the design of the GameGUI based off the user's settings. There are more controllers within the controller package, but we are only discussing a couple of them.