**Design Paradigm, Software Architecture, and Design Patterns**

**Identify the design paradigm you (i.e., the team) chose for your prototype and explain why you chose that paradigm.**

**Within the context of your chosen design paradigm, describe the software architecture of your protoype.**

**Identify the design patterns you used in your design and explain how you applied them.**

We will use a mediator, which is a behavioral design pattern, because our Connect.Js file will encapsulate all of the objects and functionality of the program. We will also use the User Interface Design Pattern because our project will be done using HTML and Javascript. This will allow the user to interact with the game in a web browser. The game should be intuitive to use for the user, and the interface should look professional and aesthetically pleasing. This allows for a web design pattern to also be used in our game. We will use the typical colors used in a connect four game, such as a blue grid and red and yellow chips. This will make our online version of the game more similar to the physical version of the game. We will also be building a prototype, which is a type of creational design pattern. Our prototype is a Use-Case Diagram because it shows all of the inputs and outputs involved for both players during the game. There are multiple functions that will be used by both of the players in the program, so we believe a Use-Case Diagram is the best option. We will also be using an iterator, which is a behavioral design pattern. We will have an updateGrid method that will be constantly updating the grid whenever a player clicks on a button to change its color to either red or yellow. It will also check if a player has won to end the game.

**Prototype- Use Case Diagram**

**Diagram

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