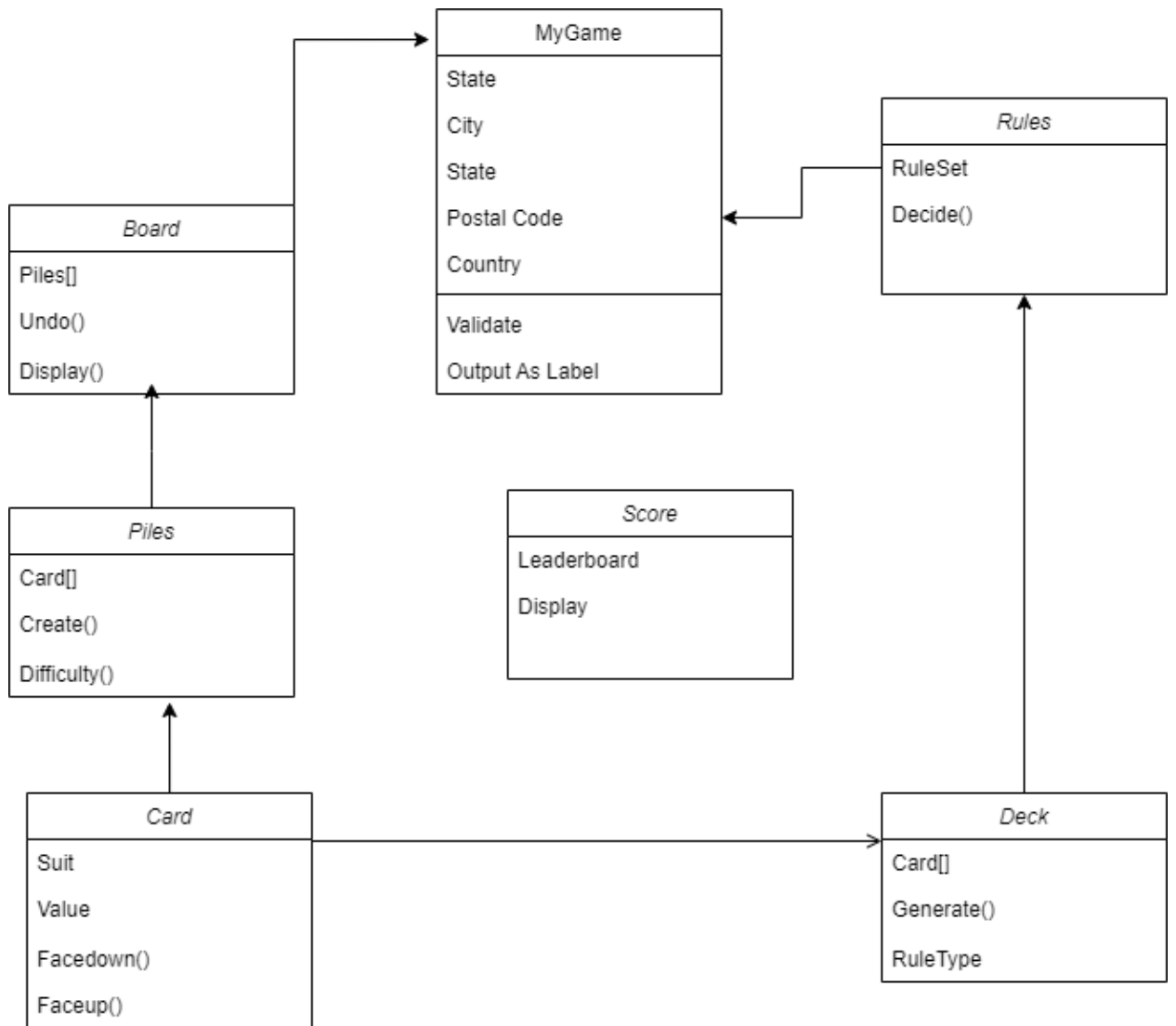
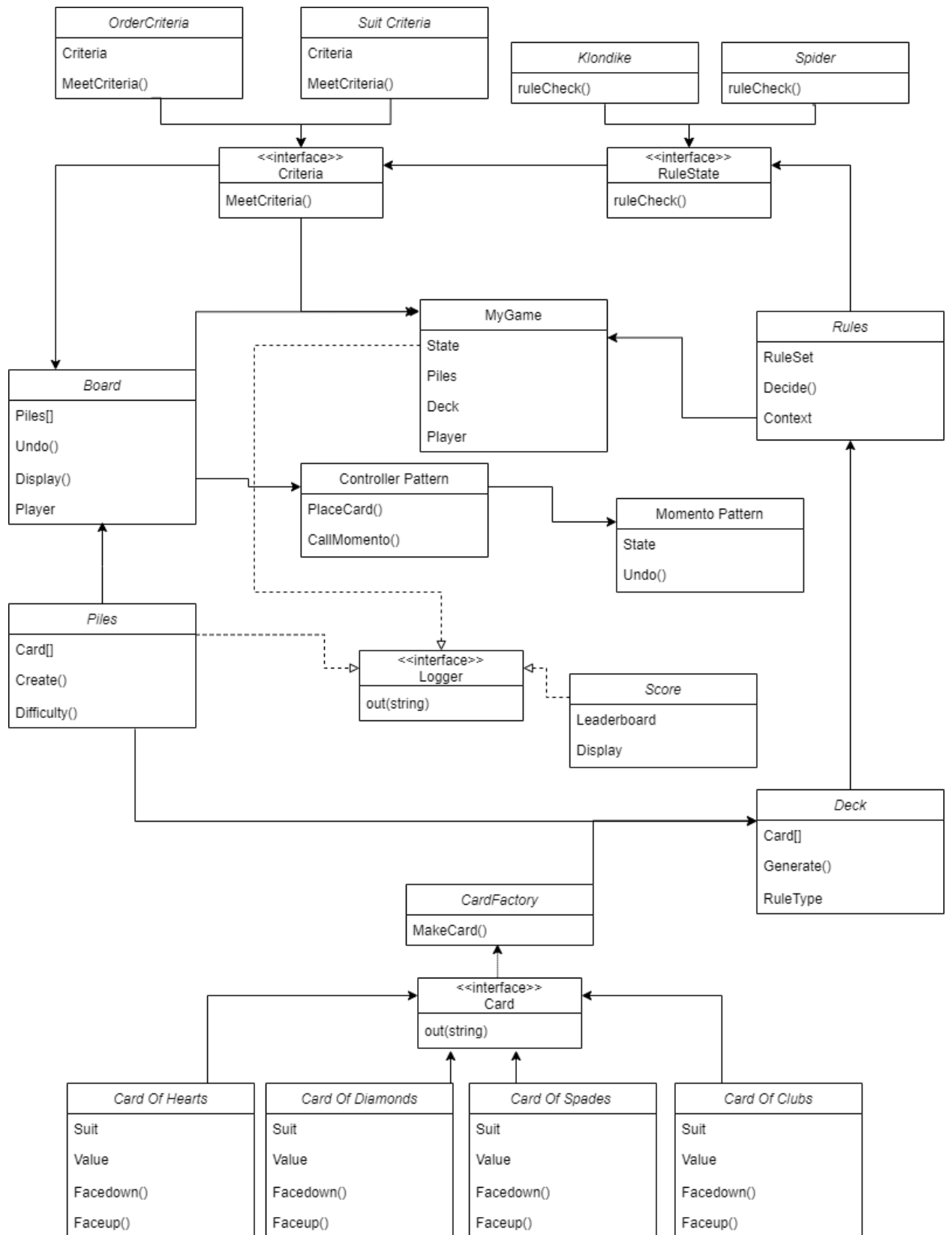
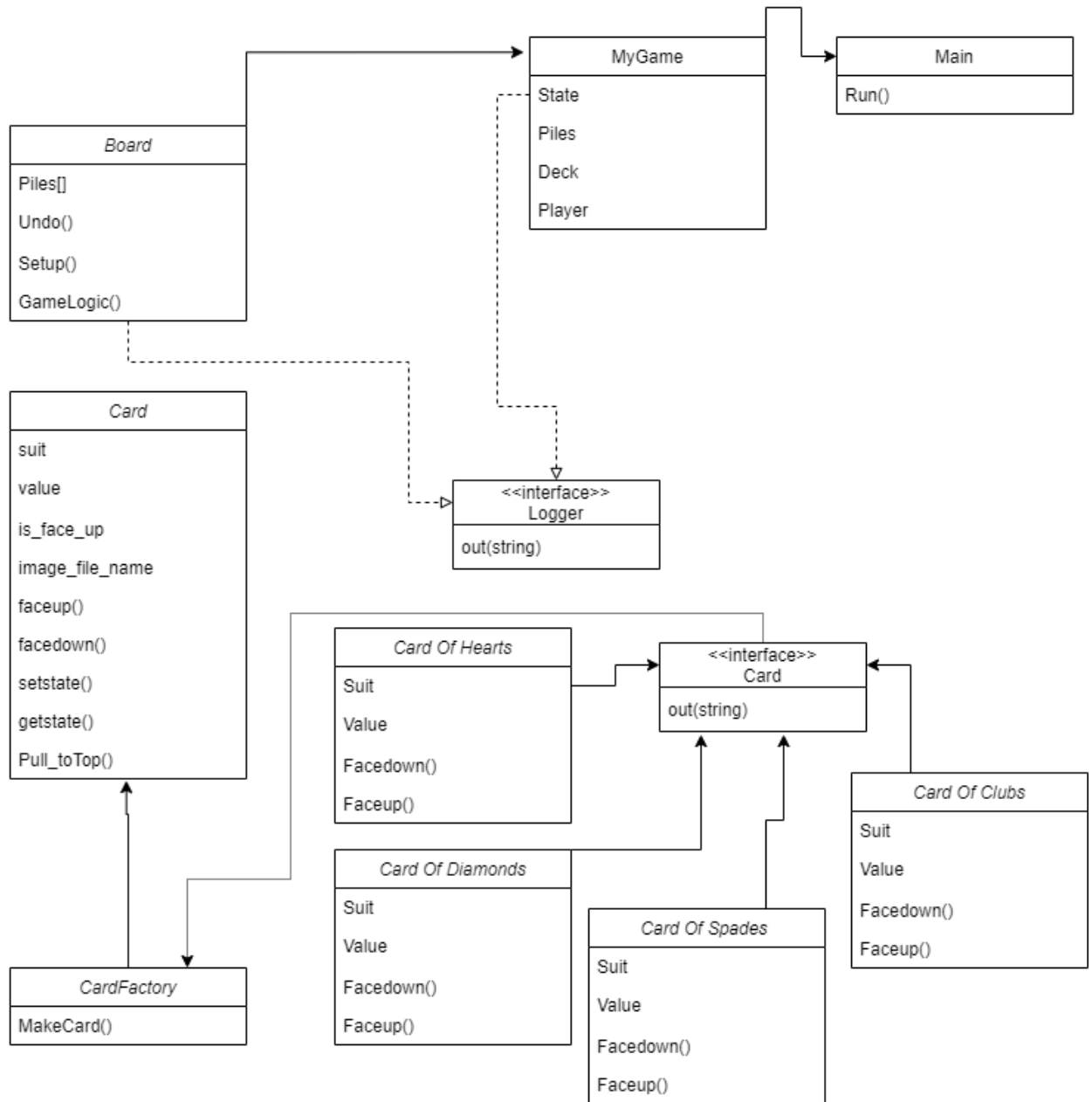


1. Kevin Busch & Michael Inouye - Solitaire Project
2. For the final state of the system we have a functioning klondike solitaire game with singleton, observer, and memento design patterns in use within the code. In the end we did not get to implement many of the features we wished to implement due to a time constraint, such as a functioning undo button, spider solitaire gamemode, scoreboard and scoring system, and more. Even though it would have been somewhat easy to implement these features, we decided not to focus on them in order to focus more on trying to use OO design patterns in the code. In the end we did not get to implement all of the design patterns we wished to either, due to a combination of time constraint as well as large debugging issues with our memento pattern.



3.





To begin with, the largest change from Project 5's diagram to now is that the entire project is different. From Project 6's diagram to now, the largest changes made to the diagrams are related to taking out design patterns due to time constraints and a lack of resources to help us debug the Memento Pattern we tried to implement.

4. Code that was referenced from other sources includes code from the Python Arcade Library tutorial for a card game, mBuschCTU's GitHub repository of Python Observers, Python Patterns guide for Singletons, and sourcemaking.com's guide for Mementos.
  - a. [https://api.arcade.academy/en/latest/tutorials/card\\_game/index.html](https://api.arcade.academy/en/latest/tutorials/card_game/index.html)
  - b. <https://github.com/mbuschCTU/Observer>
  - c. <https://python-patterns.guide/gang-of-four/singleton/>
  - d. [https://sourcemaking.com/design\\_patterns/memento/python/1](https://sourcemaking.com/design_patterns/memento/python/1)
5. One key design process issue that we had was that we had never had practice implementing many of the design patterns that we wanted to try to implement in the project, meaning that when we tried, we ran into many problems, which forced us to revert to simply using the patterns we already knew and were comfortable with as we were running out of time. Another design process element that ended up being a problem for us was our unfamiliarity with Unity when we first tried to use it, to the point where we ended up needing to switch our project idea because we did not like what we had originally planned out. Lastly, we did not really do a good job of designing by pattern when designing this project, which definitely hurt us in the long run, and is something we would change next time, if our circumstances were changed.