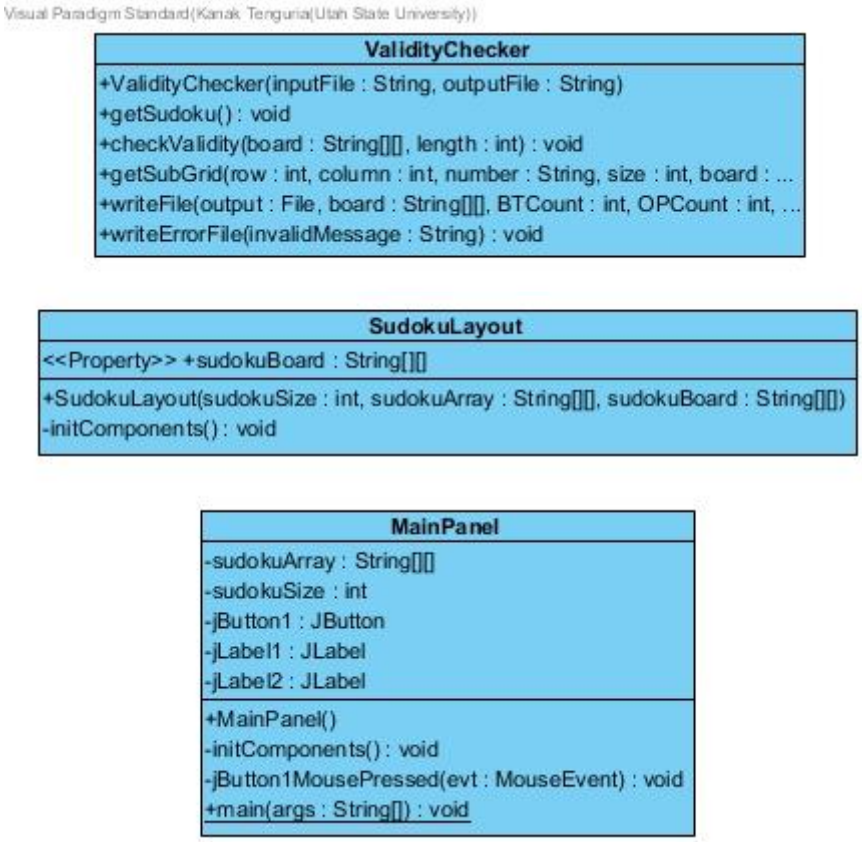
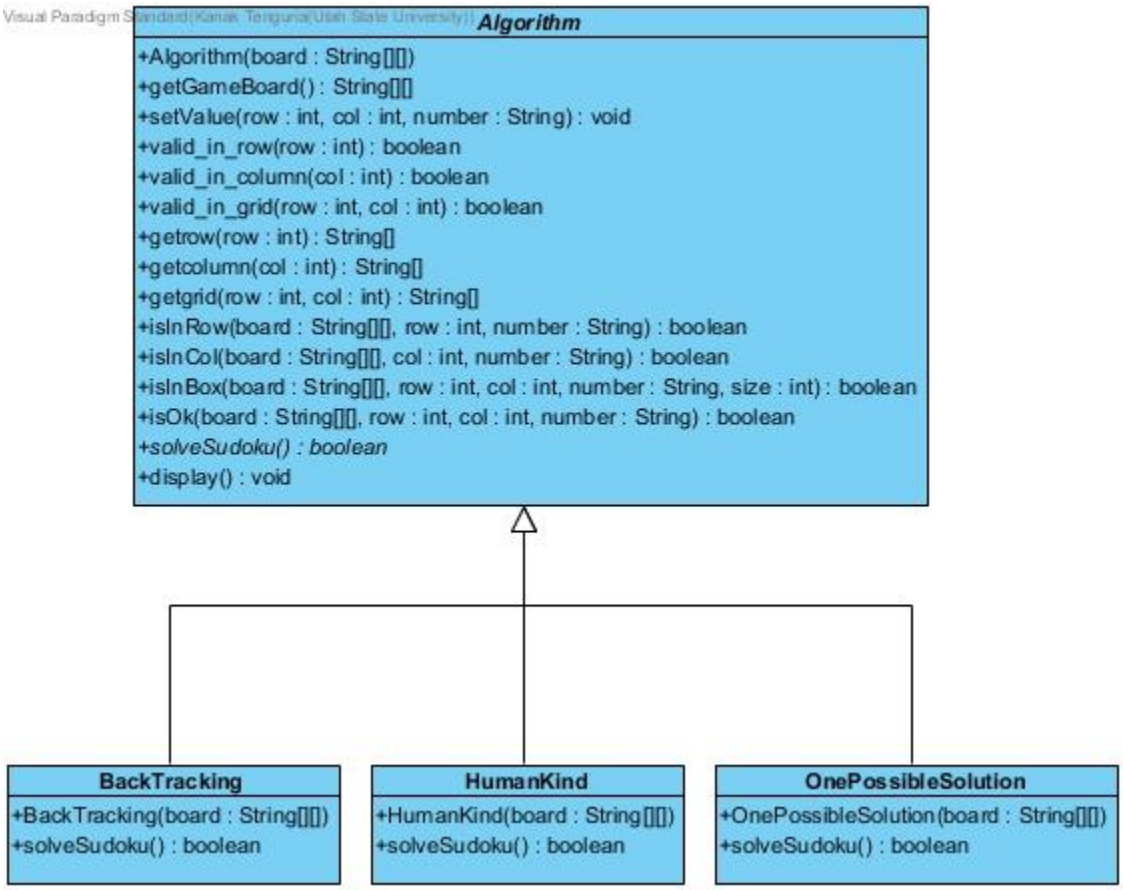
HW4 Report
Submitted on: 20 November 2019

UML Diagrams

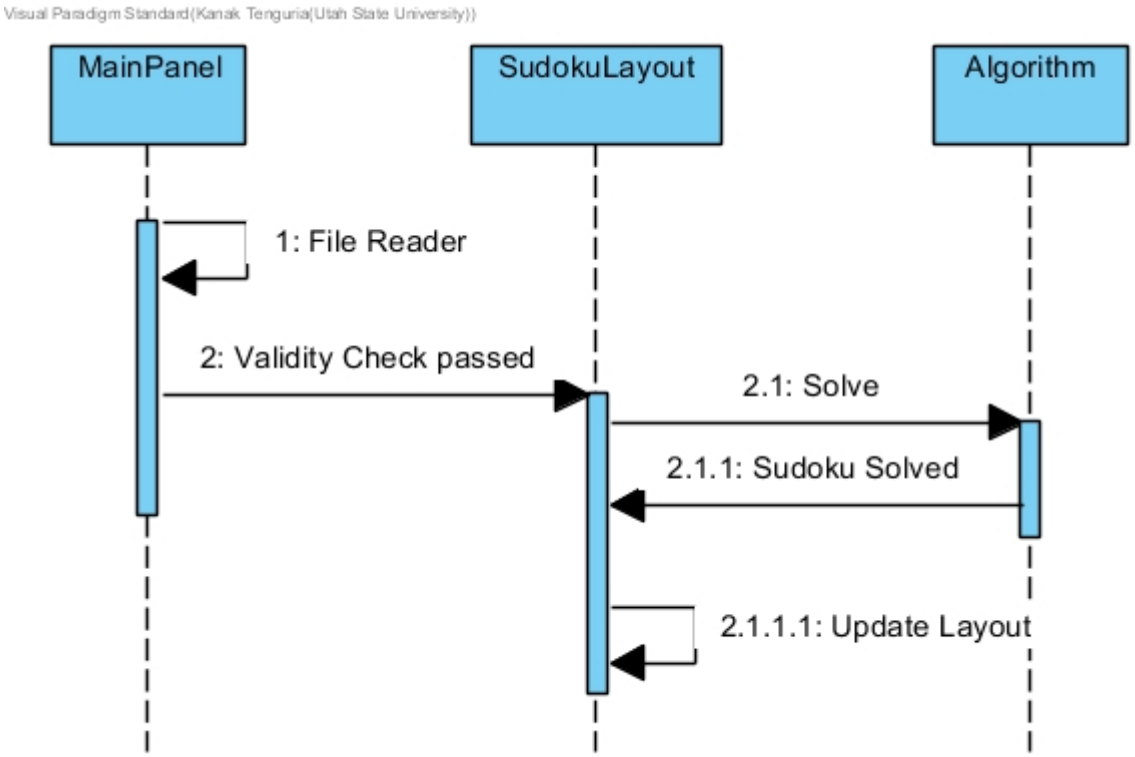
1. Class diagram of GUI and ValidityChecker:



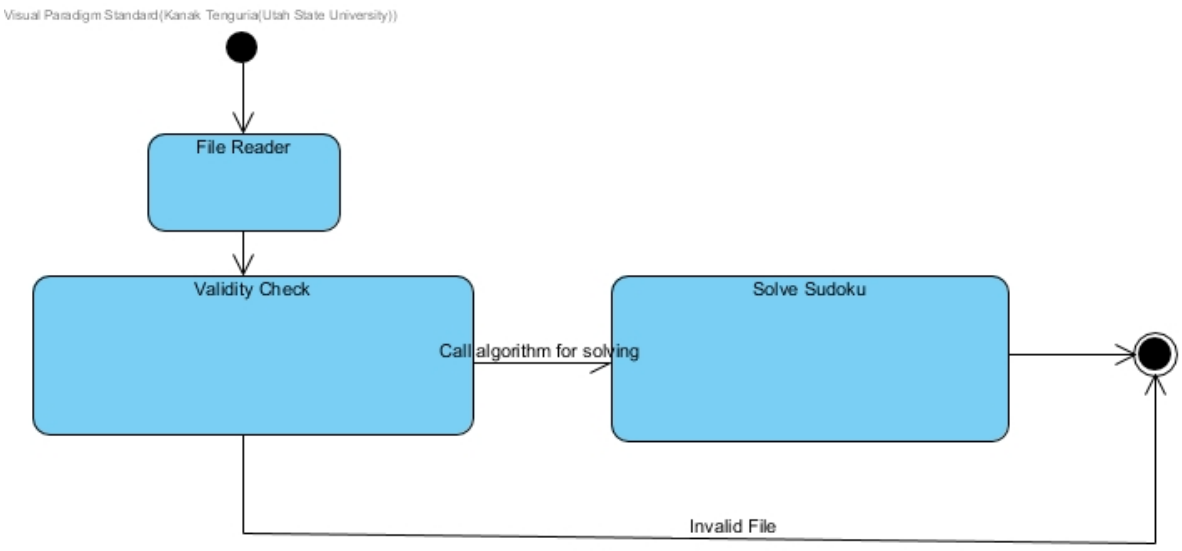
2. Class diagram of Algorithm:



3. Interaction diagram:



4. State Diagram:



Insights uncovered during the project

This project helped me a lot in understanding importance of modularity, abstraction and encapsulation. This assignment majorly helped in improving my testing abilities and UML designing abilities. I got to dive deeper and leverage use with strategy pattern.

This project focused on developing a sudoku solver GUI which can be used for solving sudoku of size 4x4, 9x9, 16x16, 25x25, 36x36. While developing this project, I came across many challenges because I have never developed a GUI application before. I tried to keep it closed to modification. Also, it was very difficult to merge GUI with non-GUI components. At one point, I felt like I am losing focus from AME concept because of that.

More importantly, I tried to implement observer pattern in this project. I ended removing it from the code because I could not make it work with GUI but since I tried, I learned a lot about it. The difference between public and private and also the significance of keeping high cohesion and low coupling was something I got more deep knowledge on. I had no practical exposure so that is something very important I learned from this project. I also learned different aspects of using different pattern.

Talking about the strategy pattern, it was fun to study and implement. It is very powerful when you want selection of algorithm on runtime.

After creating the class diagram, the flow was very clear to me and it was easy to understand everything going on in the project. Also, creating a state chart was useful as well. It gives insight to how things change in transition.

Overall, this project and applying design pattern in this assignment gave me good exposure for developing industry class software. I realized the value of design patterns and learned many new things in the process as well.