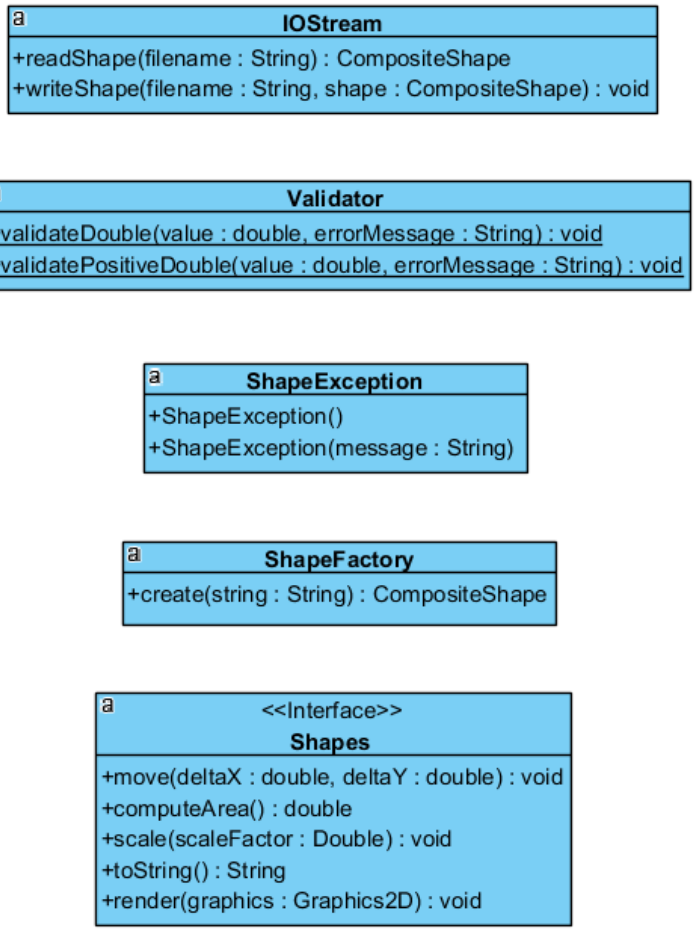
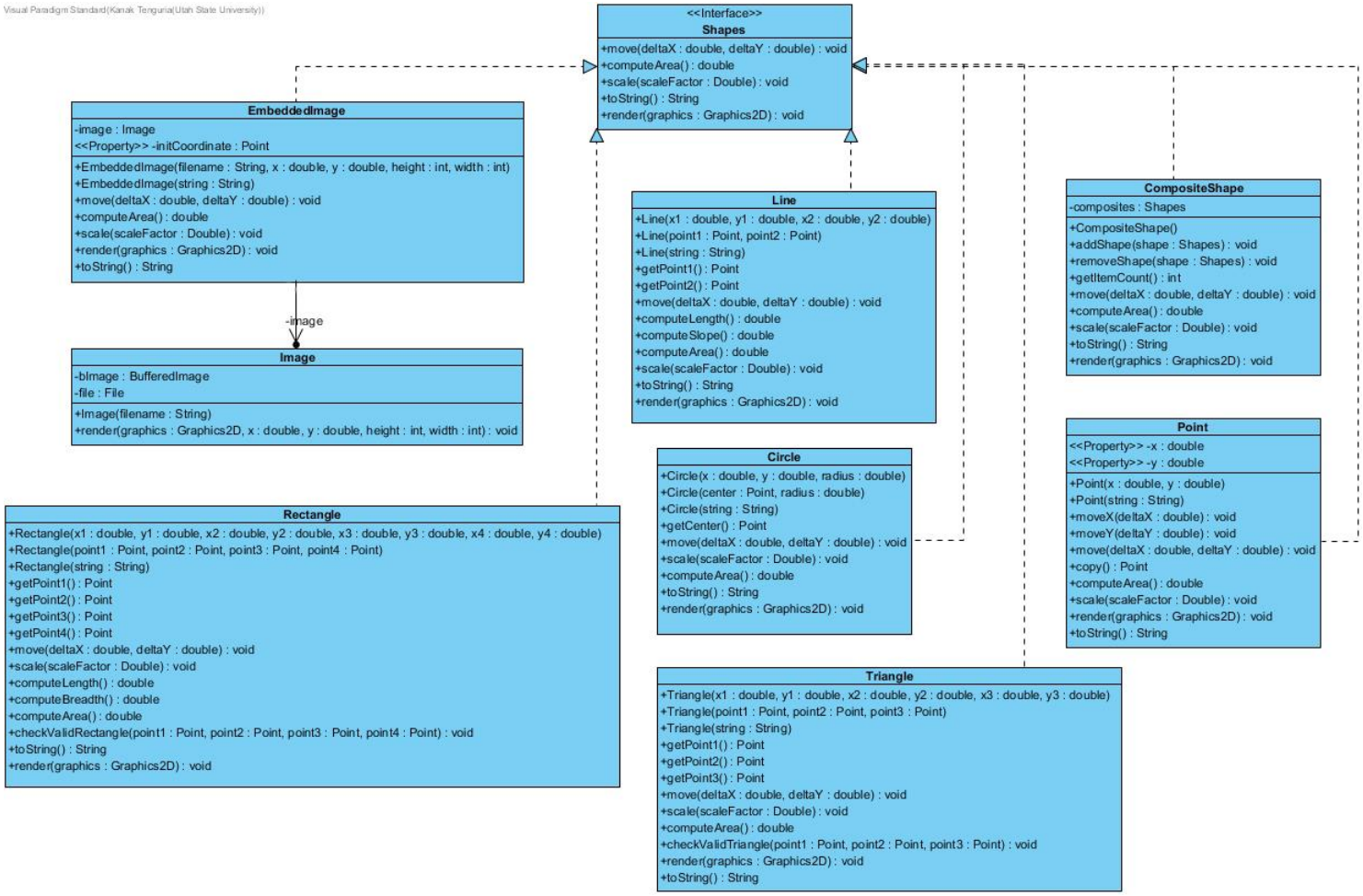
HW3 Report
Submitted on: 24 October 2019

UML Diagrams

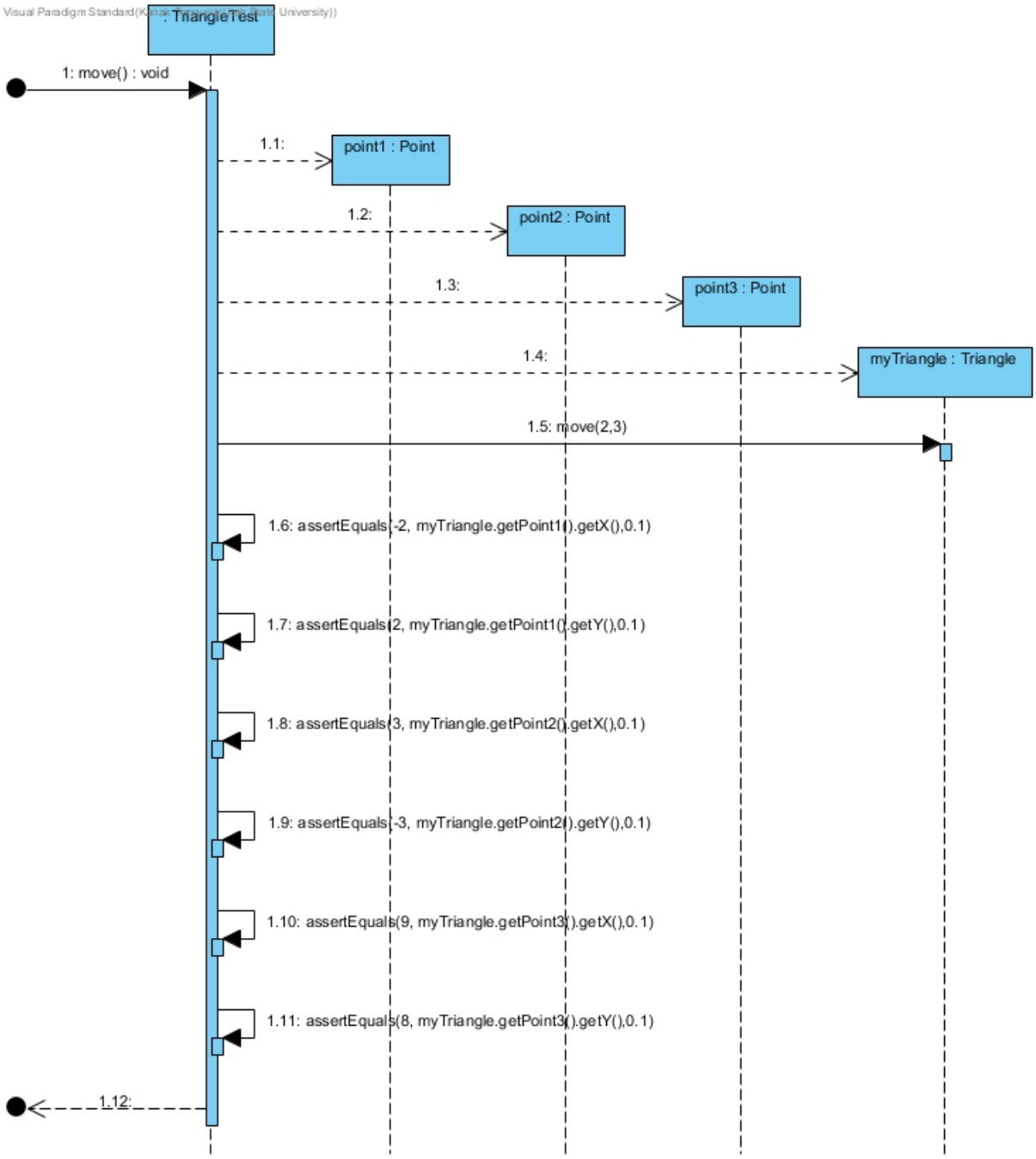
1. Class diagram of Shape Library:



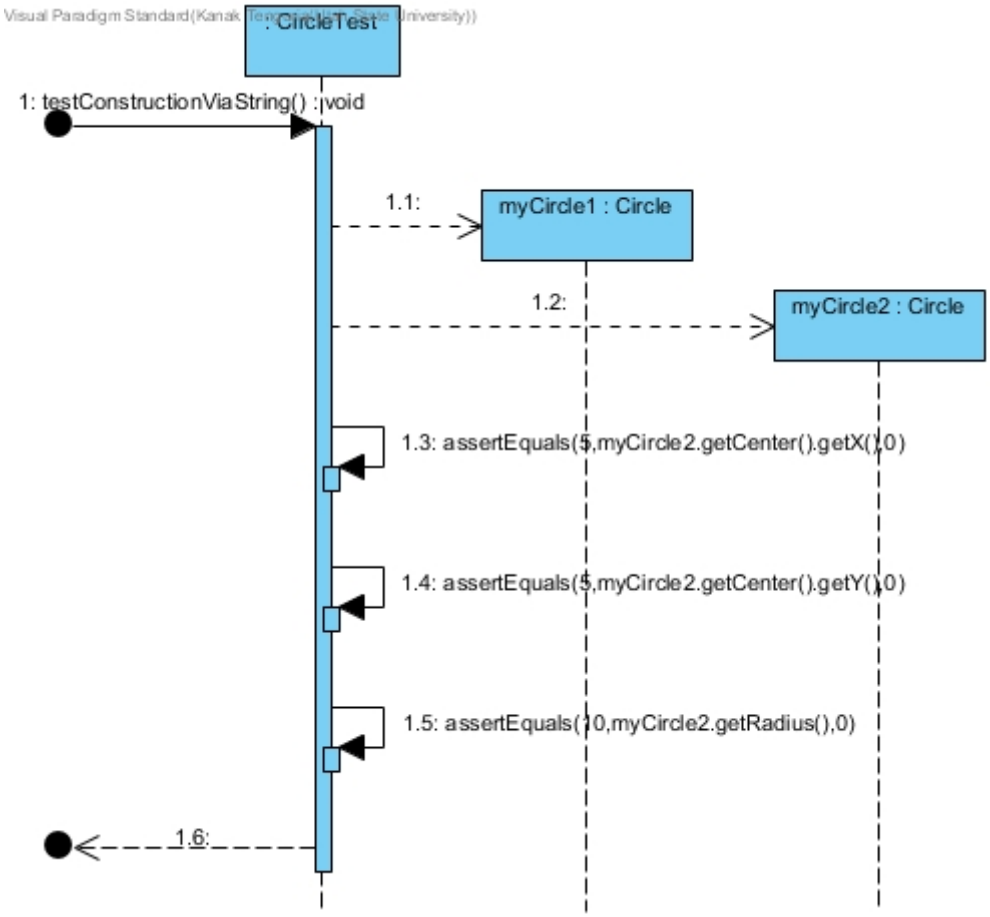
2. Class diagram of Shape Interface:



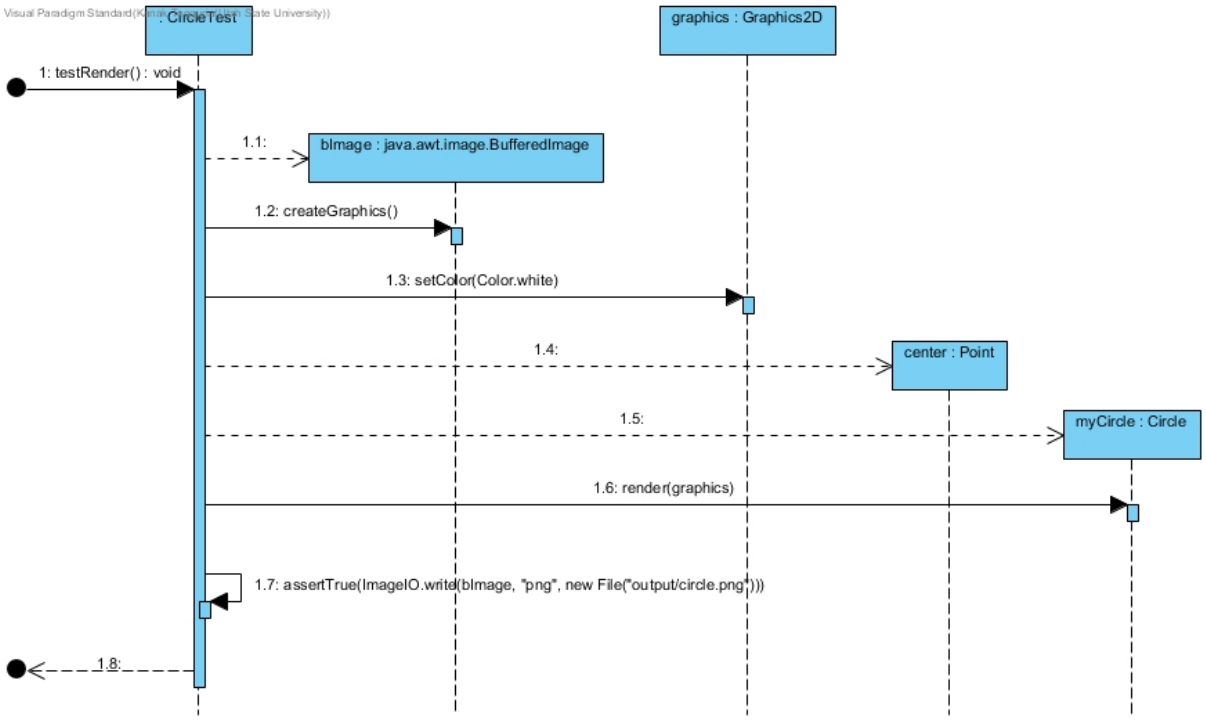
3. Interaction diagram of Triangle construction:



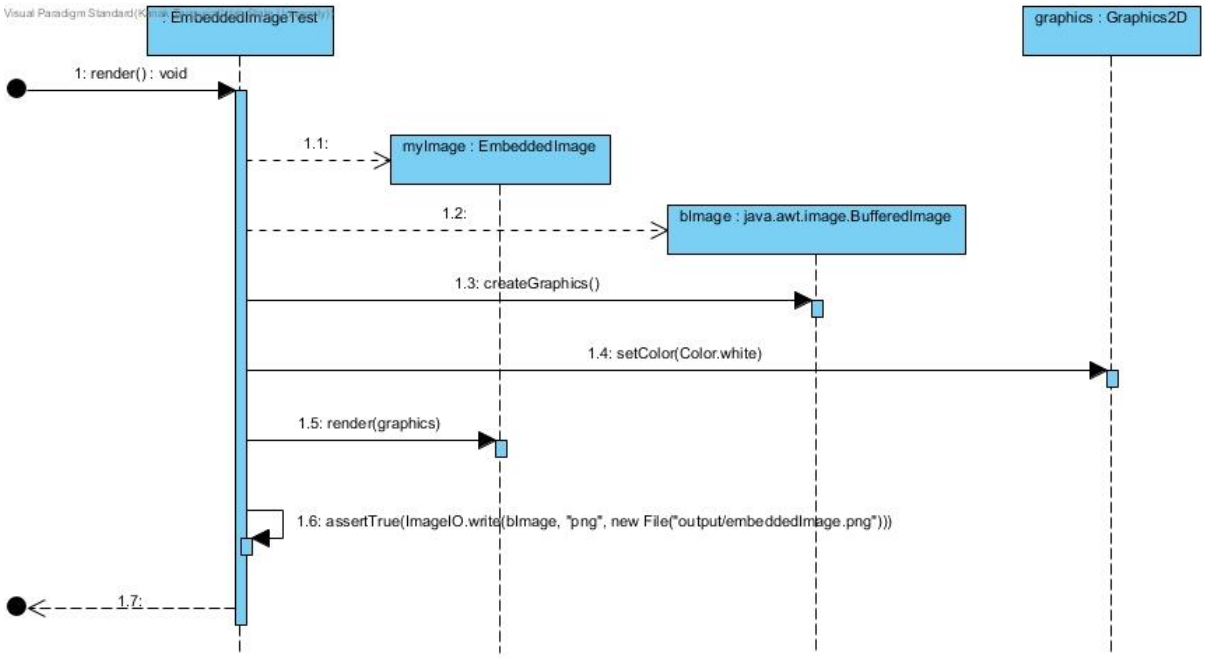
4. Interaction Diagram of Circle construction via String:



5. Interaction Diagram of Circle render:



6. Interaction Diagram of EmbeddedImage Render:



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. I got to dive deeper in testing and know different aspects of testing

This project focused on developing a reusable library which can be used for creation of shapes. While developing this project, I kept in mind that we have to maintain the library in such a way that it can be easily extended but also there are not many security holes. I tried to keep it closed to modification.

More importantly, I learned how to apply factory method pattern in the project. The difference between public and private and also the significance of declaring the data members in different places was something I got more deep knowledge on. I never understood the importance of flyweight pattern before this assignment since I had no practical exposure so that is something very important I learned from this project. I also learned different aspects of using composite pattern.

Talking about the factory pattern, it was fun to study and implement. Last time I applied Simple Factory Idiom and this time applying factory method pattern helped me learn the difference between them.

One more thing worth sharing is my experience with the UML diagrams. I am getting better with generation of class diagram and it helps in designing the overall structure. This way we can make sure that we are going in right direction. In this project, creating an interaction diagram proved to be a bit challenging for me. It took me a while to figure out where to start because this is a library and not a program with main class and proper sequence. Anyway, this also helped me in getting some knowledge about this domain.

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, Hashmap used in this project was new to my knowledge base. It is very flexible and easy to use. I also learned the use of declaring something static.

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