Adam Kowalchyk
Assignment #4 Writeup

Summary of purpose and goal of project:

The overall purpose of this project was to create a GUI representation of Yahtzee. Extending off this broad purpose, more direct goals include displaying the current hand in a frame, clicking a button to display the scorecard, clicking a widget that selects the dice to keep and click another button to roll the dice, display the possible scores and be able to select the score, and allow the user to select rules of the game via drop down box control. Additionally, to these main functionalities to the assignment, what I really wanted to do was maintain the OOP aspect of the project, rather than just creating a large GUIMain. Also, another goal I had in mind was while creating the GUI was to allow for an easy-to-use graphical user interface. This includes creating a flow layout that is easy to read and understand, as well as allowing the user to easily identify how to play each step of the game.

Overall Design:

How I went about the overall design of this project was to implement a 'View' class for class object I made from the previous class. This includes the classes DieView, HandView, and ScorecardView. All three of these classes represent their respectable non-GUI classes as how they should appear in a frame. The DieView class extends the JToggleButton class and sets the DieView icon to the corresponding die image found in the class DieImages. Users can then lock and unlock the Die object in DieView to allow the DieView to change. The HandView class stores an array of DieView objects and after each roll, the array of DiewViews is updated to showcase the new dice that were rolled. The ScorecardView class contains an ArrayList of Jbuttons that contain the labels for scores for each roll, as well as a parallel ArrayList of JLabels that contain the corresponding scores for that roll. When the user clicks the scoring option button, the current scorecard is filled, and the scoring option button is disabled. The user than continues to play until all of the label buttons have been clicked and their final scorecard and score is displayed. The majority of this work is done in the YahtzeeGUI, which similar to the previous class YahtzeeGame, plays a game of Yahtzee while at the same time creating and editing the YahtzeeGUI based on what they click. Before calling playGame() in Yahtzee GUI, the Rules Class displays a drop-down box for the user to select the number of sides on the die, number of dice in a hand, and number of rolls per hand. Once all of the options are selected, the user clicks a submitOptions button, a new game with these options is then created, and the YahtzeeGUI frame is displayed for the user.

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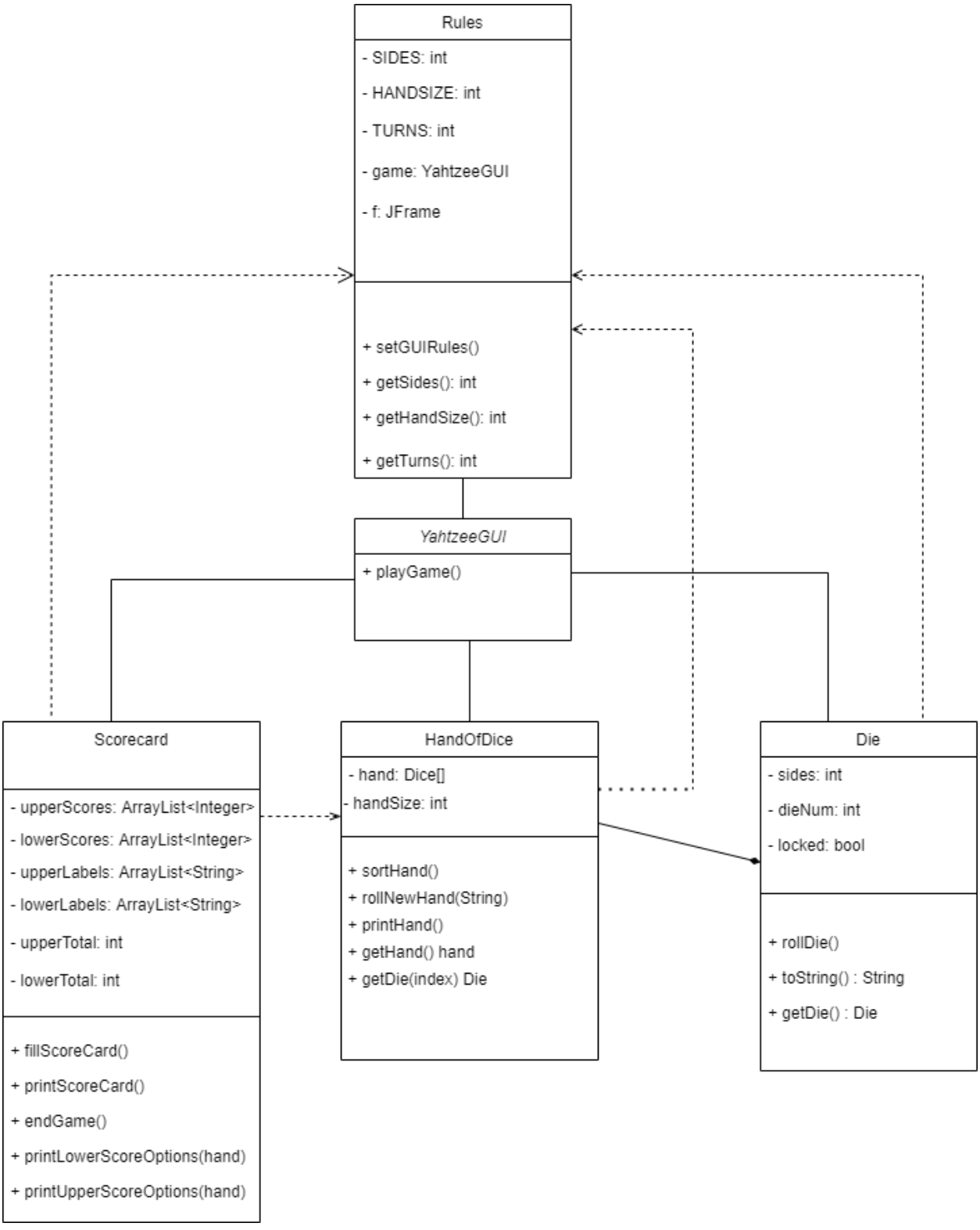

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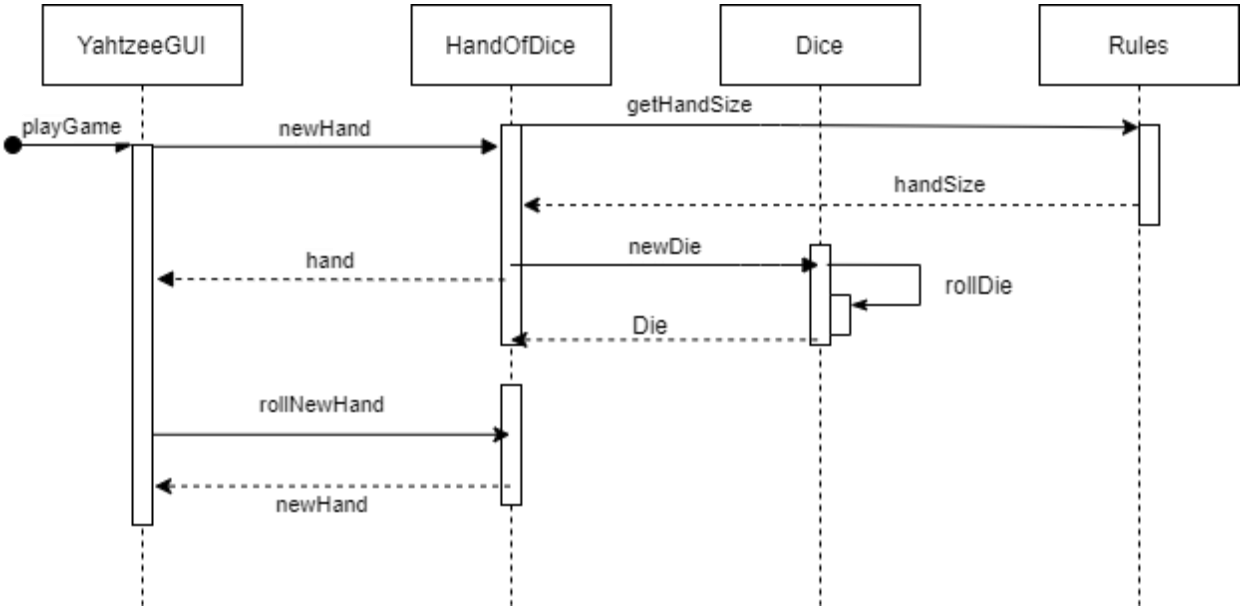

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Design issues:

This was definitely the toughest assignment yet out of the previous three assignments. GUI is a brand-new thing for myself and I had no idea how complex and complicated components of Java Swing are. For example, previous to starting the assignment, I thought creating a panel of Dice images to be selected and rolled didn't seem too hard. Although after digging into the code, I began to realize that it wasn't so simple, as there are a lot of tricks to figuring out how to make everything flow nice and well. Being able to unlock and lock dice then convert that to the DieView correctly during and after turns was definitely the trickiest part. Once I was able to get that running, the rest of the GUI formed much easier, as I became more comfortable with Frames and Panels and how to access and change things inside of JButtons and JLabels. Overall, the project was tough, although I learned a lot about GUI and I feel much more content with how everything works.

What I could've done differently with more time:

Overall, if the previous assignment I created was not implemented well with an OOP state, then this assignment would have been much harder. Although because of the fact that everything I made from the previous assignment worked well, I didn't have to dramatically change any of the classes too much. If I had more time I would probably have touched up the GUI to make it more pretty as the overall design of the GUI is quite ugly. Also, other features like a counter for number of rolls and a single scorecard that holds all of the scoring options, current roll scores, and scorecard scores, could also be a part of the design. Although my main goal of this assignment was to just get everything to work well and be easy to use for the user, which I feel like I was able to accomplish quite well.