Summary:

Title: Texas Hold ‘Em Simulator
Names: Bowman Russell, Ryan Oros, Clement Canel
Work Done:

- Implemented the audibleObserver class to produce audible notifications for game events.
- Created classes for Card, Dealer, Deck, EventBus, EventType, Game, GameConfigurator, Player, and Table as part of the Texas Hold ‘Em simulator project.
- Defined interfaces IObservable and IObserver to implement the observer pattern for event handling.
- Developed functionality for registering and removing observers in the EventBus class.
- Implemented event posting and handling mechanism in the EventBus class.
- Designed and implemented methods in the Game class for game flow orchestration, player registration, playing hands, evaluating hands, managing pot, and determining winners.
- Developed various methods in the Player class to handle player actions such as adding cards, folding cards, betting money, and evaluating hands based on poker hand rankings.
- Implemented methods in the Table class for managing players, dealing cards, evaluating hands, simulating betting rounds, and awarding the pot to the winner.

❖ **Bowman**: Added event bus and audible observer. Gameplay features.
❖ **Ryan**: Added implementations in the Player and Table classes. Gameplay Features.
❖ **Clement**: Testing

Changes or Issues Encountered: Integrating different components.

Patterns: Observer Pattern, Singleton Pattern, Factory Pattern, Builder Pattern.

Test Coverage: In Coverage Folder in Repository

UML Diagram: In UMLs Folder in Repository

BDD Scenarios:

- Dealing Players:
    - Given a table with a deck and 2-10 players
    - When the hand starts
    - Then each player should receive 2 cards starting at the player left of the dealer
- Evaluating Hands:
    - Given a table with 2-10 players and community cards(flop, turn, and river)
    - When the hand is over and all betting is finished
    - Then all players hands will be evaluated to determine the winner
- Betting:
    - Given a table with 2-10 players and community cards(flop, turn, and river)
    - When every betting round occurs (pre-flop, flop, turn, and river)
    - Then each play should bet proportionate to the strength of their hand
- Game Completion:
    - Given a table with 2-10 players
    - When a hand ends

    - Then check if there is only one player remaining
    - If true the game if over

Next Steps:

- Change the Simulate betting function to alter bet amounts depending on the personality of the player
- Change the Simulate betting function to alter bet on the state of the game, (will bet differently on flop, turn, and river)
- Add a user interface so that one person can play the game as well
- Fix edge cases in the betting function