PokerCast (Team #3)

Incremental & **Regression** Testing

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1. Components
    a. Android application
    b. Chromecast receiver
    c. Interaction between Android application and Chromecast receiver
        i. The Android and Chromecast receiver components interact with each other using an open source Chromecast framework (https://github.com/cast-framework)
        ii. Players join the game and place bets from the Android application, which send JSON messages to the Chromecast receiver.
        iii. The Chromecast sends cards, turn information, and the winner to the Android application.
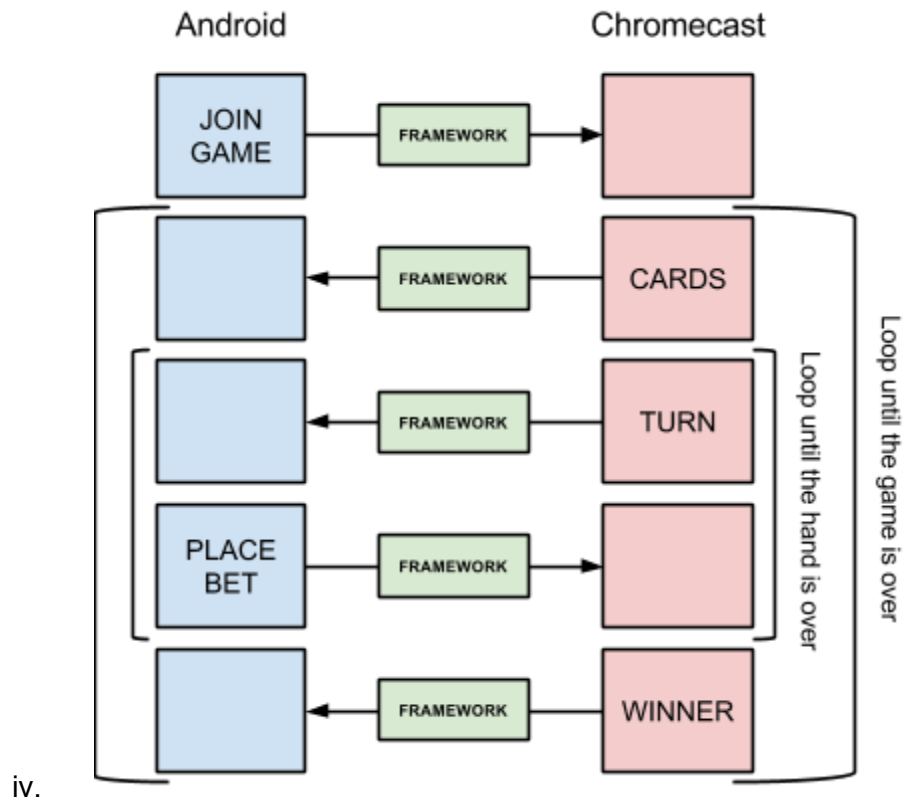
        iv.
2. We chose to test using the **bottom-up method**. This way we can test components as soon as they are finished instead of waiting on the UI to get finished.
3. Expected I/O
    a. Android application
    b. Chromecast receiver
    c. Interaction

Android application	Chromecast receiver
When the app starts: {	Responds with: {

``
    'command': 'join',
    'content': {
        'name': string
    }
}
``
	``
	    'command': 'join',
	    'content': {
	        'success': boolean,
	        'host': boolean,
	        'player_id': string,
	        'name': string
	    }
	}
	``

When the Host presses "start":
``
{
    'command': 'start_hand',
    'content': {
        'aiPlayers': int,
        'chipsPerPlayer': int
    }
}
``
	Respond by sending everyone his/her hand.

Respond by displaying the cards on screen. Starts betting loop.	Send a hand to each player:
	``
	{
	    'command': 'hand',
	    'content': {
	        'card1': string,
	        'card2': string,
	        'chips': int
	    }
	}
	``

Respond by checking if it is his/her turn, and if so allows them to bet.	Notify the players of whose turn it is:
	``
	{
	    'command': 'turn',
	    'content': {
	        'last_bet': int,
	        'player_id': string
	    }
	}
	``

When a player bets:
``
{
    'command': 'my_turn',
    'content': {
        'bet': int
    }
}
``
	Respond by sending out the next turn command.

Respond by waiting for the next hand.	When a hand is over:
	``
	{
	``

'command': 'end_hand',
'content': {
    'winner_id': string,
    'pot_value': int
}
}

4. Incremental Testing

Android, Defect 1, Severity 2
Description: When it is a player's turn and they open the help screen, when they press back button to close the help screen the buttons for betting and folding are no longer active, because hand fragment in backstack can't have listener again.
Solution: When we get "turn" message from server, store the turn message in shared preferences. Then make new hand fragment with the information in shared preference so that we no longer lose the messages.

Chromecast, Defect 2, Severity 2
Description: When a hand ends, the chromecast always displays a message saying that the first player is the winner, rather than the actual winner.
Solution: Fix the display code to render correct player rather than the first player in the activePlayers array.

Chromecast, Defect 5, Severity 2
Description: The player with the best hand is always the winner, even if that player folds.
Solution: When checking for the winner of the hand, immediately rule out all players that have folded so they don't get checked against the other players.

Chromecast, Defect 6, Severity 2
Description: When checking if a new hand should be started, the server only looks to see if the current active players are eligible to play, rather than checking if there are players waiting to join who are eligible. This results in the game ending even if there are players waiting to join.
Solution: Before checking if there are enough eligible active players, check if there are any players waiting in the queue since these players are all eligible.

Chromecast, Defect 7, Severity 2
Description: When the chromecast sends the ante, it is not accurately reflected on the android device because it doesn't know the order in which messages will be received.
Solution: Send the number of chips to the android device with the ante already taken out so the two entities remain consistent.

Chromecast, Defect 9, Severity 1
Description: When one hand ends and another begins, the UI does not refresh to reflect the change in hand.
Solution: Initialize a new hand when the old hand ends, this causes knockout to refresh the view on the chromecast.

Android, Defect 10, Severity 1
Description: When the hand ends, the UI stays in the current view of the cards it had instead of refreshing to the new cards it has been dealt.
Solution: Problem was rooted in message being sent from server, array of cards being sent was never reset so they were always getting sent old cards.

Chromecast, Defect 11, Severity 1
Description: Chromecast puts two cards on the table each round when it should put one
Solution: Unnoticed merge issue, eliminated repeat "place card" call

Chromecast, Defect 12, Severity 2
Description: Ante not included in user's onscreen chip count
Solution: Subtract ante from chip count before displaying

Chromecast, Defect 13, Severity 2
Description: Chromecast displays the word "Call" when someone bets or raises; the words "Bet" or "Raise" are expected
Solution: When a user increases his or her bet, Chromecast prints "Bet" if the first bet, "Raise" if a later one.

Chromecast, Defect 14, Severity 2
Description: Chromecast displays the word "Call" after a second person checks; it should display "Check" for everyone who checks
Solution: When a user bets zero chips, display check; when he or she bets one chip or more while matching the previous bet(s), display call

Android, Defect 16, Severity 2
Description: When the game ends, players can't stay in hand page. they need to wait for new game in join page.
Solution: Wait for the new "hand" message after the game ends and refresh hands when the message comes.

5. Regression Testing

Android, Defect 3, Severity 2
Description: After a hand ends and the winner is correctly displayed, the device returns to the 'enter name' screen rather than waiting on a new hand.
Solution: Stop the 'enter name' screen from rendering at the end of a hand. Rather, clear the cards from the view and listen for a new hand.

Android, Defect 4, Severity 2
Description: At the end of a hand, the android device thinks it's disconnected from the receiver, but in reality it is still connected.
Solution: When rendering a new view, check to see if it is connected rather than assuming it is false from the start.

Chromecast, Defect 8, Severity 1
Description: Whenever a player folds, the chromecast thinks the hand is over at the end of the round.
Solution: Fix a bug so the number of players who have folded is correctly recognized.

Android, Defect 15, Severity 2
Description: When the players open help screen, players doesn't know how the game goes.
Solution: Add vibration and show the message when turn message comes. Also pop the winner message when the game ends.

Android, Defect 17, Severity 2
Description: If new game starts when players are in help page, they can't get the new hands.
Solution: Add hands message receiver in help fragment and save information in shared preference so that cards in hand fragment can be refreshed when they clicked back button.

Android, Defect 18, Severity 1
Description: If one player raises, AI players will continue raising and the round of betting will never end
Solution: AI players expect to be passed the amount they need to match the current bet, so main.js was changed to reflect this.

Android, Defect 19, Severity 2
Description: AI players can bet more chips than they have, leaving them with a negative chip count
Solution: A check prevents the AI players from betting more than their remaining chips