

Project: Final Project - Multiplayer Yahtzee

Group Members: Hailey Boe, Anna Cardinal, Tyler Kamphouse, Jonathan Smoley

Project Description:

Functional Requirements:

Part	Title
Priority	<High, Med, Low>
Purpose	The application shall... what?
Inputs / Needs	Describe the inputs / needs for the function, including sources, valid ranges of values, and any special cases
Operators / Actors	Which of your UML objects and/or the people playing the game are involved
Outputs	What values, states, or conditions shall be output or set by this requirement?

Part	let user pick number of players
Priority	High
Purpose	application lets user select number of players from drop box on intro screen
Inputs / Needs	user selects number of players (1 to 8) through JComboBox
Operators / Actors	StartWindow, User
Outputs	number of players

Part	let user navigate to setting screen
Priority	Medium
Purpose	application lets user leave starting window to go to a settings screen
Inputs / Needs	user clicks settings button
Operators / Actors	StartWindow, JButton, User
Outputs	N/A

Part	let user pick number of dice
Priority	Medium
Purpose	application lets user select number of dice in game from a dropdown on screen
Inputs / Needs	user selects number of dice (5, 6, or 7) from a JComboBox
Operators / Actors	SettingsWindow, User
Outputs	number of dice

Part	let user pick number of sides on dice
Priority	Medium
Purpose	application lets user select number of sides on dice from a dropdown on screen
Inputs / Needs	user selects number of sides on the dice (6, 8, or 12) from a JComboBox
Operators / Actors	SettingsWindow, User
Outputs	number of sides on dice

Part	let user pick number of rolls per turn
Priority	Medium
Purpose	application lets user select number of rolls per turn from a dropdown on screen
Inputs / Needs	user selects number of rolls per turn (2, 3, or 4) from a JComboBox
Operators / Actors	SettingsWindow, User
Outputs	number of rolls per turn

Part	let user navigate to home screen from settings
Priority	Medium
Purpose	application lets user return to homescreen from settings screen
Inputs / Needs	user clicks return to intro screen button
Operators / Actors	SettingsWindow, User
Outputs	Data collected from settings screen (number of dice, number of sides on dice, number of rolls per turn)

Part	let user navigate to name collection screen
Priority	High
Purpose	application lets user leave starting window to go to screen that asks for player names
Inputs / Needs	user clicks play game button
Operators / Actors	StartWindow, JButton, User
Outputs	N/A

Part	let user enter all player names
Priority	High
Purpose	application lets user enter player names for every player in game
Inputs / Needs	number of players in game
Operators / Actors	NameWindow, User
Outputs	Player names

Part	let user navigate to main gameplay screen from name collection screen
Priority	High
Purpose	application lets user leave name collection screen to go to main gameplay screen
Inputs / Needs	all players must have been given a name, user clicks play button
Operators / Actors	NameWindow, User
Outputs	Player names

Part	display current player name
Priority	High
Purpose	application displays current player's name at the top of the screen
Inputs / Needs	current player name
Operators / Actors	MainWindow, Player arraylist
Outputs	Current player name

Part	display current turn
Priority	medium
Purpose	application displays current turn at the top of the screen
Inputs / Needs	current player name
Operators / Actors	MainWindow, Player arraylist
Outputs	Current player name

Part	Display Current Player Scorecard
Priority	High
Purpose	application displays current player's scorecards on left side of screen, including possible score with a given hand, and recorded scores from previous turns
Inputs / Needs	current player, current player's ScoreCard
Operators / Actors	MainWindow, Player arraylist, ScoreCard
Outputs	Scoring information

Part	display current roll number
Priority	High
Purpose	application displays what roll the current player is on, as well as how many rolls they have left
Inputs / Needs	number of rolls per turn, current roll number
Operators / Actors	MainWindow
Outputs	current roll number, number of rolls left

Part	display current hand
Priority	High
Purpose	application displays current dice values of the game hand on the screen
Inputs / Needs	current die values
Operators / Actors	MainWindow, Hand
Outputs	visual representation of die side corresponding to current die values

Part	let player select dice to keep
Priority	High
Purpose	application allows player to select which dice to keep from a given hand through radiobutton corresponding to the dice
Inputs / Needs	user selects radio buttons corresponding to specific dice
Operators / Actors	MainWindow, Hand, Die
Outputs	N/A

Part	let player roll hand
Priority	High
Purpose	application allows player to roll a given hand, and sets the unselected dice to a new randomly generated value
Inputs / Needs	user clicks roll button
Operators / Actors	MainWindow, Hand, Die
Outputs	new randomly generated die values

Part	let player select line to record score
Priority	High
Purpose	application allows player to choose a scoreline on their scorecard to record their score after they finish rolling their hand for that turn
Inputs / Needs	user selects scoreline through radiobutton, user clicks score button
Operators / Actors	MainWindow, Player, ScoreCard
Outputs	Newly Recorded Score Value

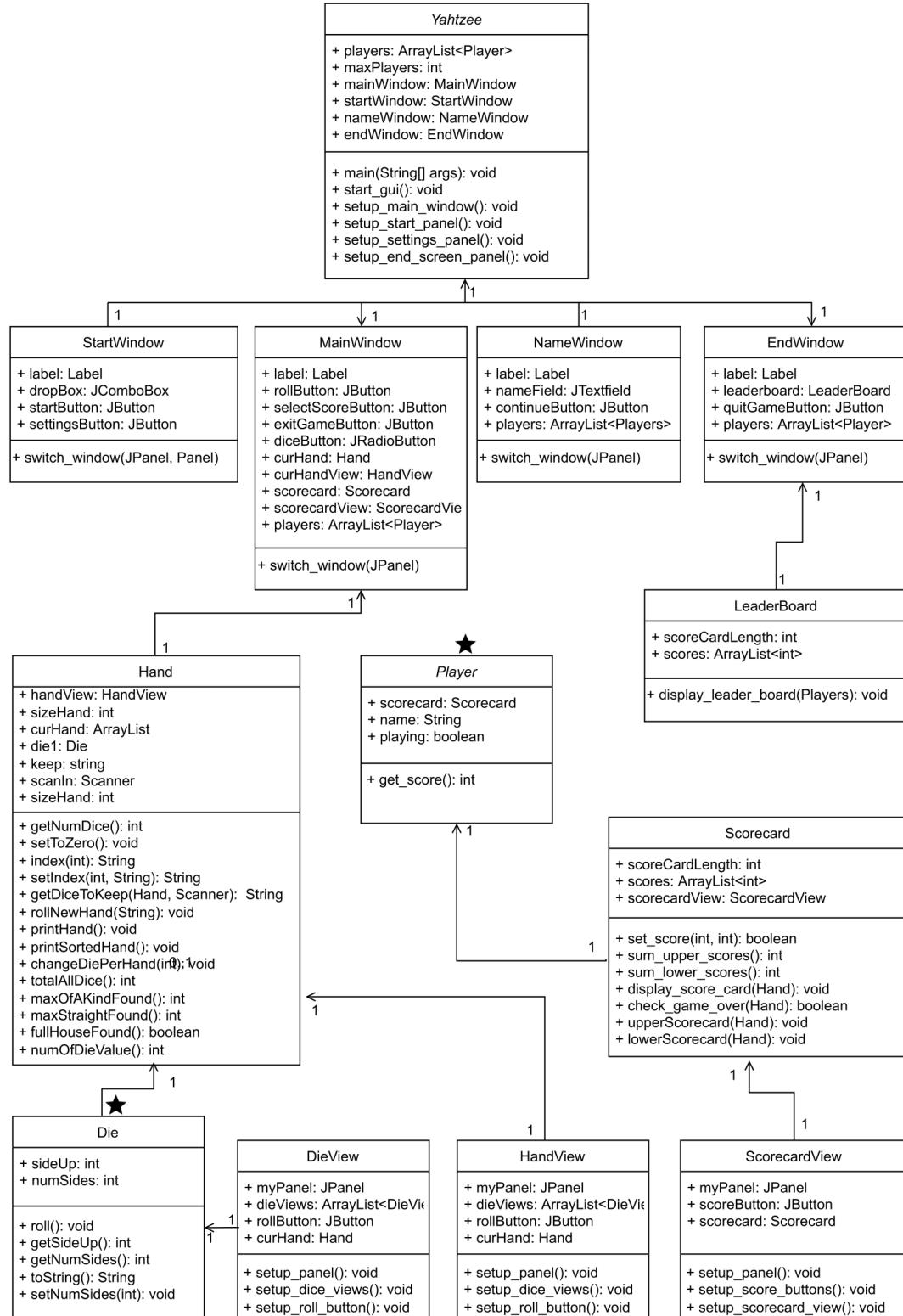
Part	iterate through players in game
Priority	High
Purpose	application iterates through all players in game after each player finishes their turn
Inputs / Needs	player clicks end turn button
Operators / Actors	MainWindow, Player arraylist, current player
Outputs	N/A

Part	display final scores after game ends
Priority	High
Purpose	application displays leaderboard scorecard after every player has filled their scorecard
Inputs / Needs	player scores, player names
Operators / Actors	EndWindow, Player arraylist, LeaderBoard
Outputs	all player scores

Part	display winner
Priority	High
Purpose	application displays game winner name under the leaderboear based on who has the highest final score
Inputs / Needs	player scores, winner name
Operators / Actors	EndWindow, Player arraylist, LeaderBoard
Outputs	winner name

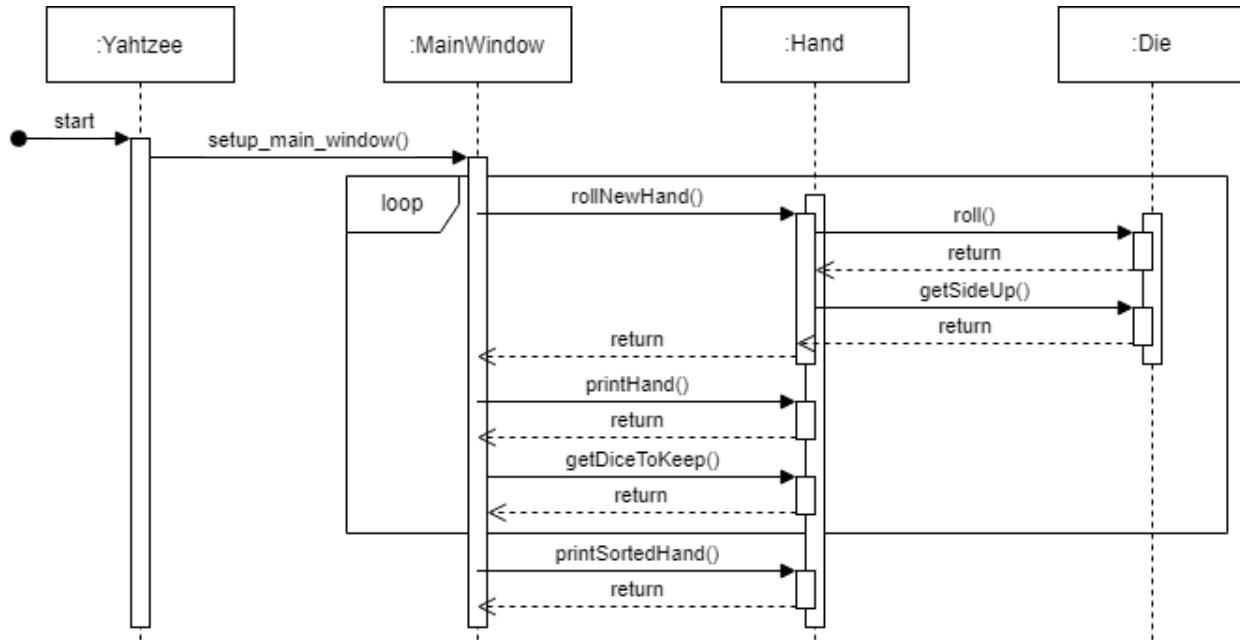
Part	let user navigate to title screen at game end
Priority	High
Purpose	application allows user to return to the homescreen after game ends and displays the leaderboard
Inputs / Needs	user clicks return to title button
Operators / Actors	EndWindow
Outputs	N/A

Class Diagram:

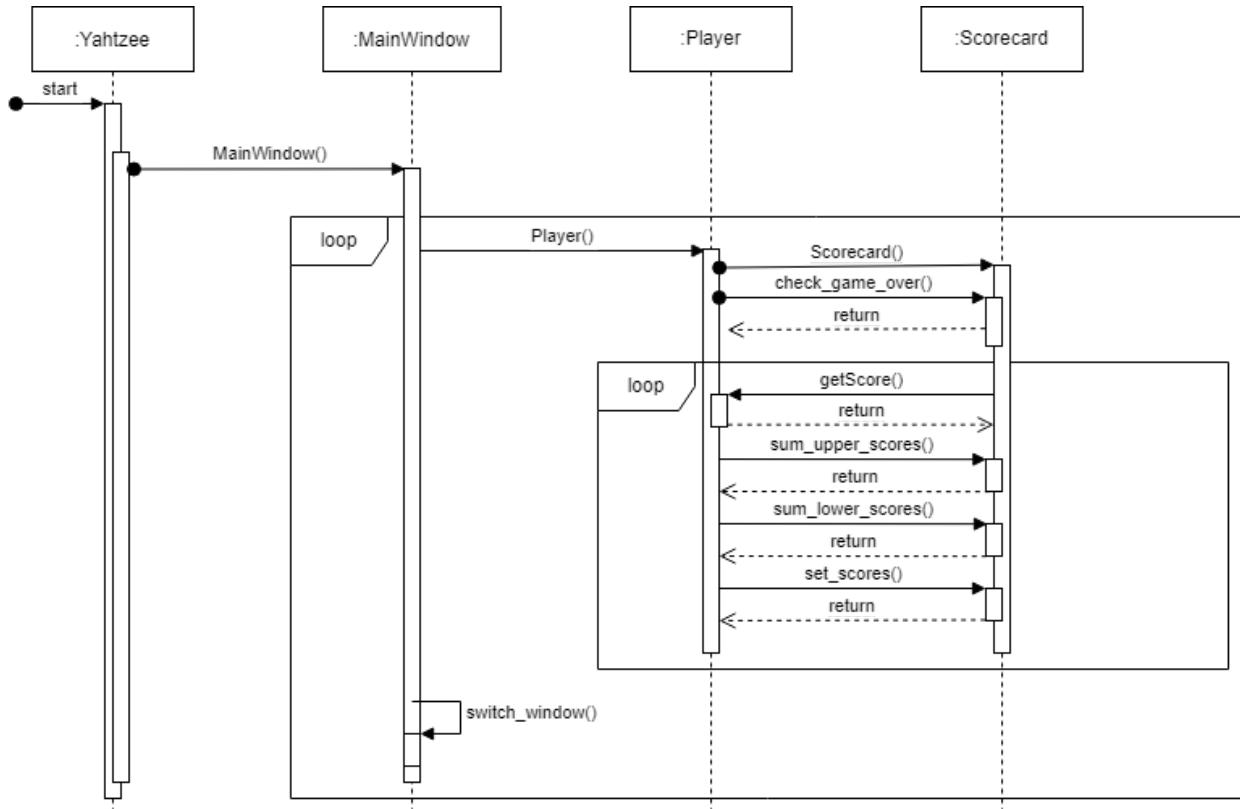


Sequence Diagrams:

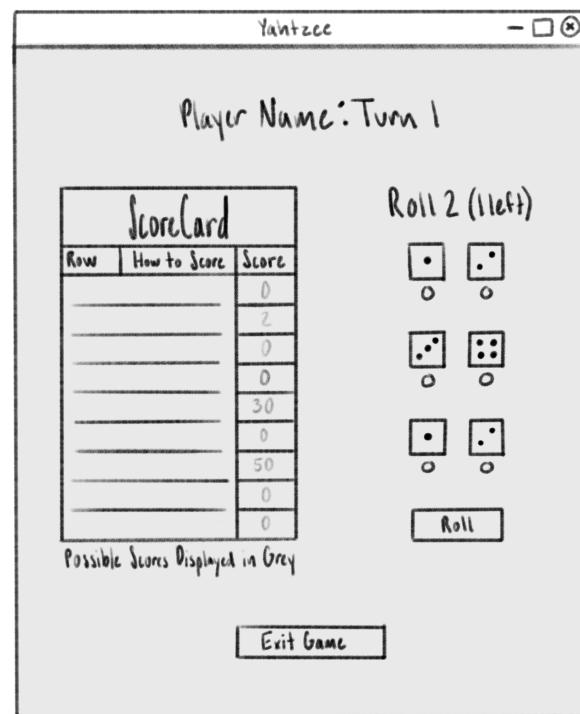
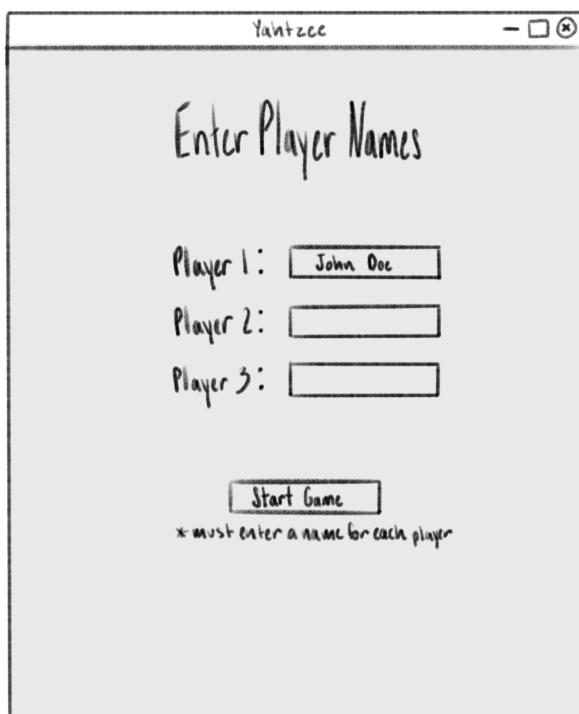
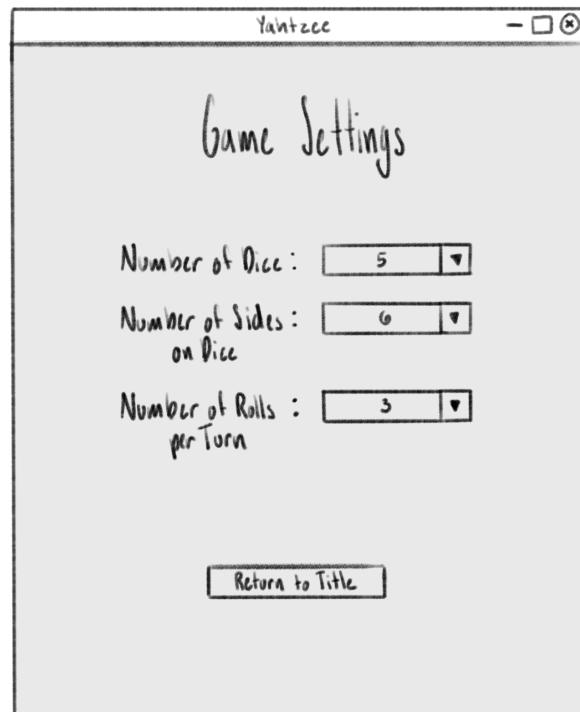
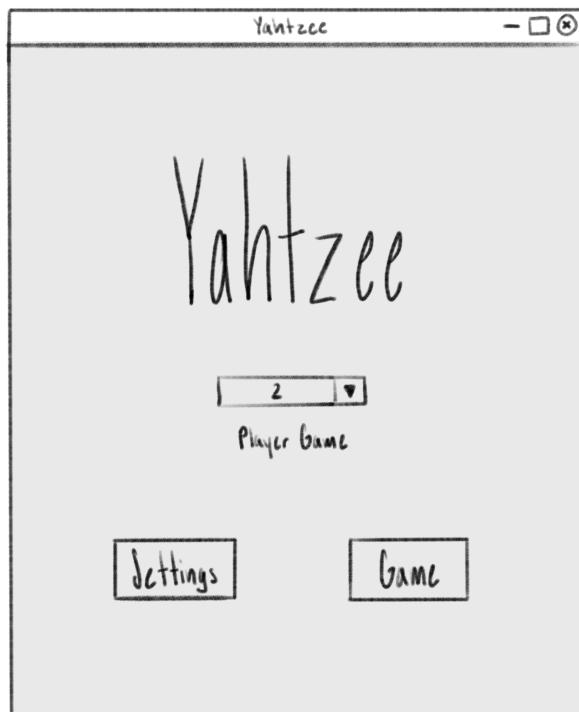
Roll Sequence:



ScoringSequence:



User Interface Sketches:



Yahntzee - □ ⓘ

Player Name: Turn 2

Row	How to Score	Score
		0
		0
		0
		0
		30
		0
		0
		50
		0
		0

Select line to Record Score

Final Hand

<input type="checkbox"/>	<input type="checkbox"/>
0	0
<input type="checkbox"/>	<input type="checkbox"/>
0	0
<input type="checkbox"/>	<input type="checkbox"/>
0	0
<input type="checkbox"/>	<input type="checkbox"/>
0	0

End Turn

Possible Scores Displayed in Grey

Exit Game

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Final Scoreboard				
Row	How to Score	Player 1	Player 2	Player 3
Aces	Add only ones	0	2	1
Twos	Add only twos	4	0	8
"	"	0	0	0
"	"	0	0	0
"	"	0	0	0
"	"	0	0	0
"	"	0	0	0
"	"	0	0	0
"	"	0	0	0
"	"	0	0	0
"	"	0	0	0

Player 3 Wins!

Return to Title

Overall Plan / Project Schedule:

- **FP2 : March 30**
 - UML Sequence Diagrams - *Jonathan* (2 hours)
 - Project Function Requirements - *Hailey* (3 hours)
 - Project Planning / Schedule - *Jonathan, Tyler, Anna* (1 hour)
 - Project Description - *Hailey* (30 min)
 - UML Class Diagram - *Tyler* (2 hours)
 - User Interface Mockup Design Sketch - *Anna* (1 hour)
 - GUI Element Research - *Jonathan, Tyler, Hailey, Anna* (4 hours)
- **Push Start Code : April 1**
 - Organize prior documentation in repo - *Jonathan* (20 min)
 - Supplement Preliminary Documentation - *Jonathan, Hailey, Tyler, Anna* (1 hour)
 - Generate stubbed classes / methods or push a team members HW4 - *Anna* (1 hour)
- **System Testing Plan : April 10**
 - Plan group Integration / management of project - *Jonathan Hailey, Tyler, Anna* (3 hour)
 - Testing Plan addition to describe how testing will be conducted - *Tyler* (1 hour)
 - Testing Strategy needed to solidify catching bugs/fixes - *Hailey* (1 hour)
- **Code Functionally Complete : April 15**
 - Screen Navigation using buttons and/or pop-up windows - *Anna* (2 hours)
 - Retrieve data entered/selected by user for later use - *Jonathan* (1 hour)
 - Build Player arraylist with data gathered from StartWindow and NameWindow - *Hailey* (1 hour)
 - Construct view objects for Hand, Die, and Scorecard - *Tyler* (3 hours)
 - Present Rollable hand - *Hailey* (1 hour)
 - Present roll number / number of rolls left on a given turn - *Tyler* (30 min)
 - Present current player scorecard - *Anna* (30 min)
 - Iterate through player scorecards upon turn completion - *Jonathan* (1 hour)
 - Present possible scores in current player's scorecard with a given hand - *Hailey* (2 hours)
 - Store results of round computations in one place across full-length game (scorecard) - *Anna* (3 hours)
 - Present Final Leaderboard - *Tyler* (2 hours)
 - Code functional according to requirements - *Tyler, Anna, Hailey, Jonathan* (30 min)
- **Code Complete : April 27**
 - Bugged elements fixed - *Jonathan* (2 hours)
 - Testing plan implemented in full - *Hailey* (2 hours)
 - Layout / Design elements finalized - *Anna* (2 hours)
- **Final Report : May 7**
 - Supplemental final/updated documents added - *Tyler* (2 hours)
 - Presentation prepared then completed - *Jonathan, Hailey, Anna, Tyler* (6 hours)
 - Code fully functional with little/no bugs - *Jonathan, Hailey, Anna, Tyler* (2 hours)