5/5/2022

- Feedback review
    - Positives
        - Liked the different styles and progress from the milestone 2 demo
        - Liked that the user can export the visualization
        - Ability to dynamically change the art style
    - Improvements
        - More color palettes/ themes
        - Historic scoring
        - Background music
        - Change existing shape instead of adding new ones
        - Option to keep current art when you switch styles
        - Option to close the tutorials
        - Give the option to combine the arts into one
        - Key for what the key meant
        - Better UI
    - Suggestions
        - Buttons looked like labels
        - Combining art styles
        - User selecting color
        - Color themes for how the game is going greenish background for winning etc
        - Buttons to directly share the visualizations
        - Music
        - Expand to more than just blackjack
        - Multiplayer support
        - Different color theme for the card board.

4/28/2022

- **Completed**
    - Kaleb Barker
        - Finished combining art styles for milestone 3 prototype
    - Tyler Mills
        - Worked on tutorial

    - Trey Orr
        - Finished circle art style for milestone 3
    - Yi Lu
        - Finished square art style for milestone 3
    - Everyone:
        - Practiced the presentation
        - Presentation
- **To Be Completed**
    - Everyone:
        - Final video submission
        - Final blog submission

4/21/2022

- **Completed**
    - Kaleb Barker
        - Added switching to different art styles
        - Changed buttons to use text instead of symbols
    - Tyler Mills
        - Tested probability code to make sure it is reliable and accurate
        - Worked on project visuals and UI
        - Worked on writing tutorial
    - Trey Orr
        - Worked on new art style with constant updating
        - Finalized art style with circles
    - Yi Lu
        - Changed the mondrian visualization to a pseudo mondrian rectangles visualization
    - Everyone:
        - Working on winning probabilities and visualization
- **To Be Completed**
    - Kaleb Barker
        - Reset and redisplay using different art style
        - Doesn't properly keep hand for after a round ends happens
        - Tutorial in game
    - Tyler Mills
        - Figure out the probability of different aspects of game so we can visualize it
        - Test probability code to make sure it is reliable and accurate
        - Write up a tutorial

    - YI Lu
        - Debug visualization when the squares get too small
    - Trey Orr
        - Get feedback from users for presentation
    - Every One
        - Research for winning probability and visualization
        - Combining different version of the project
            - Figure out how to switch between different modes of visualization

- **On the Horizon**
    - Final project report
- **Blockers**
    - None for everyone

4/14/2022

- **Completed**
    - Kaleb Barker
        - Alpha/bitmasking research
        - Attempted to work masking in art
        - Added totals for player and dealer
    - Tyler Mills
        - Tested probability code to make sure it is reliable and accurate
    - Trey Orr
        - Debugged issues with win chance
        - Finalized quiz to get feedback from users
    - Yi Lu
        - Refine the mondrian visualization
        - Tried to have a dynamic visualization but it was to hard to implement in PyGame
    - Everyone:
        - Working on winning probabilities and visualization
- **To Be Completed**
    - Kaleb Barker
        - Doesn't properly keep hand for after a round ends happens
        - Tutorial in game
    - Tyler Mills
        - Figure out the probability of different aspects of game so we can visualize it
        - Test probability code to make sure it is reliable and accurate

        - Write up a tutorial
    - YI Lu
        - Improve the mondrian visualization to make it more ambiguous
        - Integrate it with the probabilities
    - Trey Orr
        - Work on constantly generated art style as opposed to only on clicks
        - Work on better blending using alpha value in color generation
    - Every One
        - Research for winning probability and visualization
        - Combining different version of the project
            - Figure out how to switch between different modes of visualization
- **On the Horizon**
    - Figure out how to improve the visualization (possibly using textured shapes or masking)
- **Blockers**
    - None for everyone

4/7/2022

- **Completed**
    - Kaleb Barker
        - Blending research
        - Z research
        - Alpha/bitmasking research
    - Tyler Mills
        - Finished calculating bust chance more efficiently in python
    - Trey Orr
        - Worked on new art style with randomly placed circles
        - Created quiz to get feedback from specific user group
    - Yi Lu
        - Connected the mondrian visual with the game
    - Everyone:
        - Working on winning probabilities and visualization
- **To Be Completed**
    - Kaleb Barker
        - Improve mosaic (fix issue with point being close or same)
        - Added display for player and dealer hand value
        - Blending research
        - Z research
        - Alpha/bitmasking research
        - Use research to improve art

    - Tyler Mills
        - Figure out the probability of different aspects of game so we can visualize it
        - Test probability code to make sure it is reliable and accurate
    - YI Lu
        - Try to make a dynamic visualization involving line segments
    - Trey Orr
        - Get feedback from users familiar with blackjack
        - Expand testing to other user groups
    - Every One
        - Research for winning probability and visualization
- **On the Horizon**
    - Figure out how to improve the visualization (possibly using textured shapes or masking)
    - Figure out how to switch between different modes of visualization
- **Blockers**
    - None for everyone

3/31/2022

- **Completed**
    - Kaleb Barker
        - Created an abstract mosaic style
        - Research popup for how to play
        - Save feature of pygame
    - Tyler Mills
        - Finished calculating win chance more efficiently in python
    - Trey Orr
        - Worked on art style using arcs and circles
        - Reviewed feedback to guide new ideas
    - Yi Lu
        - Completed mondrian demo
    - Everyone:
        - Feedback Review
        - Researched how to make game more visually appealing
- **To Be Completed**
    - Kaleb Barker
        - Complete blackjack game with insurance and split
        - Popup for how to play
        - Improve mosaic style
    - Tyler Mills

        - Figure out the probability of different aspects of game so we can visualize it (https://www.quora.com/How-do-you-calculate-the-odds-of-winning-in-Blackjack)
        - Test probability code to make sure it is reliable and accurate
    - YI Lu
        - Try to connect the mondrian demo with the game's output
    - Trey Orr
        - Get working demo of new art styles in the game
        - Work on getting feedback from user groups
    - Every One
        - Research for winning probability and visualization
- **On the Horizon**
    - Figure out how to improve the visualization (possibly using textured shapes
- **Blockers**
    - None for everyone
- **Milestone 2 Feedback Review**
    - **Positives**
        - Solid prototype that showed off the concept that we were going for
        - Exporting the art after the game
        - Game changes on user action/move
        - Use of a card game to create art
    - **Improvements**
        - Not solely using rectangles (using more shapes)
        - Use of more colors or color palettes (Can be done using python import Palettes)
        - Explanation of gameplay as demo was going on with explanation of art generated
        - Change the background color
        - More clear reason for visualization
        - More user control of visualization
        - More randomness (using probability) for where art actually appears after each event (Can be done using possibly hit to bust probability)
    - **Suggestions**
        - (From professor) Using Piet Mondrian style
        - Controlling what shapes are used
        - Choosing color schemes
        - Symbol loss or win of round in art (Could use outline of color to show this)

        - Some data output of analysis of player's moves at end to go with art
        - More abstract design
- **Ideas from Feedback Review (Not necessarily common but good suggestions)**
    - Toggle Tutorial for how to play blackjack and possibly how the art is generated
    - Show history of losses and wins (could be done by saving the display text since it is informative)
    - Way to show in the art the different hands that won vs hands that lost
    - Count of dealer and player cards

3/24/2022

- **Completed**
    - Kaleb Barker
        - Finished milestone 2 prototype for linear style
    - Tyler Mills
        - Worked on calculating probability more efficiently in python
    - Trey Orr
        - Collaborated to solidify visualization details
        - Did research into drawing functioning within PyGame
    - Yi Lu
        - Created some visualization that can be considered in the later stage.
    - Everyone:
        - Researched PyGame and how to make our project with it
        - Practiced the presentation
        - Presentation
- **To Be Completed**
    - Kaleb Barker
        - Research how to possibly resize and save the image
        - Start thinking about how to implement rest of blackjack in game
    - Tyler Mills
        - Figure out the probability of different aspects of game so we can visualize it (https://www.quora.com/How-do-you-calculate-the-odds-of-winning-in-Blackjack)
    - Yi Lu
        - Work on the polygon demo for milestone 2
    - Trey Orr
        - Prepare presentation with team members

        - Get feedback from users
    - Everyone
        - Research for winning probability and visualization
        - Figure out what to make the project with and how we will make it PyGame Screen Swap: (https://www.youtube.com/watch?v=aqhp_-CbE_w)
        - Prepare for milestone 2 presentation
- **On the Horizon**
    - Figure out how to treat the end of the game (currently it exits) to allow the user to download art, go through timestamps of art in specific rounds, etc, or simply reset.
    - Figure out how to improve the visualization
- **Blockers**
    - None for everyone

3/17/2022

- **Completed**
    - Kaleb Barker
        - Worked on list of variable and possible effects that they could represent
        - Started working on proof of concept for design using polygons for each round
    - Tyler Mills
        - Worked on calculating probability more efficiently in python
    - Trey Orr
        - Collaborated to solidify visualization details
        - Did research into drawing functioning within PyGame
    - Yi Lu
        - Created some visualization that can be considered in the later stage.
    - Everyone:
        - Researched PyGame and how to make our project with it
- **To Be Completed**
    - Kaleb Barker
        - Finish proof of concept before milestone 2
    - Tyler Mills
        - Figure out the probability of different aspects of game so we can visualize it (https://www.quora.com/How-do-you-calculate-the-odds-of-winning-in-Blackjack)

    - Yi Lu
        - Work on the polygon demo for milestone 2
    - Trey Orr
        - Prepare presentation with team members
        - Get feedback from users
    - Everyone
        - Research for winning probability and visualization
        - Figure out what to make the project with and how we will make it PyGame Screen Swap: (https://www.youtube.com/watch?v=aqhp_-CbE_w)
        - Prepare for milestone 2 presentation
- **On the Horizon**
    - Figure out how to treat the end of the game (currently it exits) to allow the user to download art, go through timestamps of art in specific rounds, etc, or simply reset.
    - Figure out the visualization
- **Blockers**
    - None for everyone

3/3/2022

- **Completed**
    - Kaleb Barker
        - Modified window in game to fullscreen to allow art to be beside and changes all static position to be dynamic and work with new window
    - Tyler Mills
        - Worked on calculating probability in python
    - Trey Orr
        - Prepared questions for potential users for initial feedback of ideas
        - Shared information about experiences in LV
    - Yi Lu
        - Tried to modify the best candidate algorithm found in the line to accept user inputs. (https://bost.ocks.org/mike/algorithms/)
    - Everyone:
        - Researched PyGame and how to make our project with it
- **To Be Completed**
    - Kaleb Barker
        - Start working on getting some markers of what actions (hit, stand, double down) are taken in a round

        - Start working on a list of variables etc to take from game to give to art generator
    - Tyler Mills
        - Figure out the probability of different aspects of game so we can visualize it (https://www.quora.com/How-do-you-calculate-the-odds-of-winning-in-Blackjack)
    - Yi Lu
        - Continue to research and try to implement visualization.
    - Trey Orr
        - Get initial feedback on ideas from potential users
        - Iron down visualization details
    - Everyone
        - Research for winning probability and visualization
        - Figure out what to make the project with and how we will make it PyGame Screen Swap: (https://www.youtube.com/watch?v=aqhp_-CbE_w)
- **On the Horizon**
    - Determine whether this project will be a website, unity project, etc.
    - Figure out how to treat the end of the game (currently it exits) to allow the user to download art, go through timestamps of art in specific rounds, etc, or simply reset.
    - Decide how to split the information of game and current art generation (Two windows, large split window, etc)
- **Blockers**
    - None for everyone

2/24/2022

- **Completed**
    - Kaleb Barker
        - Started researching pygame library since it shows graphics of games well
        - Found a game that could serve as either a guide (especially for graphics) or as the base
            - https://www.pygame.org/project/640
            - Started thinking about how the project could be altered to fit our needs using the hand arrays, moneyLost/moneyGained, etc from project as well as taking more from double down actions and hit
    - Tyler Mills

        - Helped other members with their research.
        - Tested code from other games to see if we can use any
        - Organized research and ideas so that they worked together and were reasonable for our project
    - Trey Orr
        - Looked into existing libraries to assist in game creation (https://pypi.org/project/pyCardDeck/)
        - Looked at feedback and considered alterations to initial ideas
    - Yi Lu
        - Looked for graphic algorithms: (https://bost.ocks.org/mike/algorithms/)
        - Looked for pattern generation algorithms: (https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9698142)
        - Looked for Voronoi diagram algorithms (https://en.wikipedia.org/wiki/Voronoi_diagram)
    - Everyone:
        - Feedback Review
        - Researched how to make game
- **To Be Completed**
    - Kaleb Barker
        - Download Python IDE
        - Start working on getting some markers of what actions (hit, stand, double down) are taken in a round
        - Start working on a list of variables etc to take from game to give to art generator
    - Tyler Mills
        - Figure out the probability of different aspects of game so we can visualize it (https://www.quora.com/How-do-you-calculate-the-odds-of-winning-in-Blackjack)
    - YI Lu
        - Try to implement some visualization (like voronoi diagram) in python.
        - Research for more visualization strategies.
    - Trey Orr
        - Do research on blackjack games in person (will be in Vegas)
        - Understand responsive game design and user interface preferences.
    - Every One

        - Research for winning probability and visualization
- **On the Horizon**
    - Determine whether this project will be a website, unity project, etc.
    - Figure out how to treat the end of the game (currently it exits) to allow the user to download art, go through timestamps of art in specific rounds, etc, or simply reset.
    - Decide how to split the information of game and current art generation (Two windows, large split window, etc)
- **Blockers**
    - None for everyone
- **Milestone 1 Feedback Review**
    - **Positives**
        - Deep explanation of blackjack for those who were unfamiliar with it
        - Explanation of the complexities of blackjack that would make for interesting art
        - General idea of using games to create probability art
    - **Improvements**
        - Need more in-depth information about art generation (Point of confusion for some)
        - Less words on slides
    - **Suggestions**
        - Instructions section for novices
        - Give players more control over the art (Medium, etc)
        - Collaborative aspect or focus on game that allows more collaborative aspect
        - Broader expanse of applying to different games
        - Players learning or knowing how their actions affects the art
- **Ideas from Feedback Review (Not necessarily common but good suggestions)**
    - Saving the artwork after finishing
    - Masterpiece art goal that artwork got closer to the better the player plays
    - Timestamps to go back to the art at certain point in time
    - Vivid card design
    - Instruction section for novices
    - Have option to allow users to use art to help their game
    - Manipulating randomly imported images
    - Description at end to explanation why it looks like it does (explanation of some of the methodology)
    - Music in similar fashion

2/17/2022

- **Completed**
  - Kaleb Barker
    - Brainstormed how the different aspects of blackjack will correspond to different aspects of the art.
  - Tyler Mills
    - Brainstormed how we will design the project and what we will make the project look like
  - Trey Orr
    - Talk to non-CS majors to get feedback on project idea
    - Research other project visualizing card games
  - Yi Lu
    - Researched more algorithm generated arts
  - Everyone:
    - Practiced the presentation
    - Presentation
- **To Be Completed**
  - Determine the stack
- **On the Horizon**
  - Determine whether this project will be a website, unity project, etc.
- **Blockers**
  - None for everyone

2/10/2022

- **Completed**
  - Kaleb Barker
    - Brainstormed initial ideas for the project
  - Tyler Mills
    - Brainstormed best way to organize the project
    - Sketched project
  - Trey Orr
    - Research poker probability algorithms
    - Research blackjack strategy and rules
    - Researched existing blackjack implementations online (github)
  - Yi Lu
    - Catch up with the idea of this project
    - Brainstorm how to visualize the probability
  - Everyone:
    - Worked on the presentation
    - Brainstorm how the game will work(Poker Probability)

- **To Be Completed**
    - Put together presentation for Milestone 1
        - Find artwork that represents this game for presentation
        - Do research on aspects of project to discuss
    - Figure out which platform to create the project with
- **On the Horizon**
    - Determine whether this project will be a website, unity project, etc.
- **Blockers**
    - None for everyone