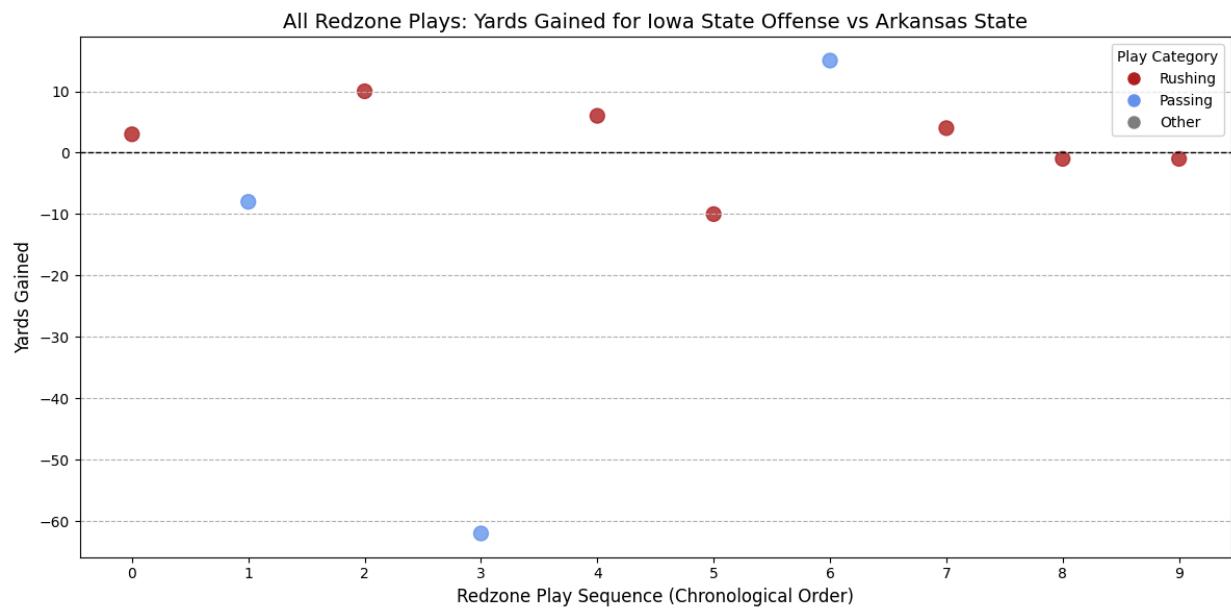
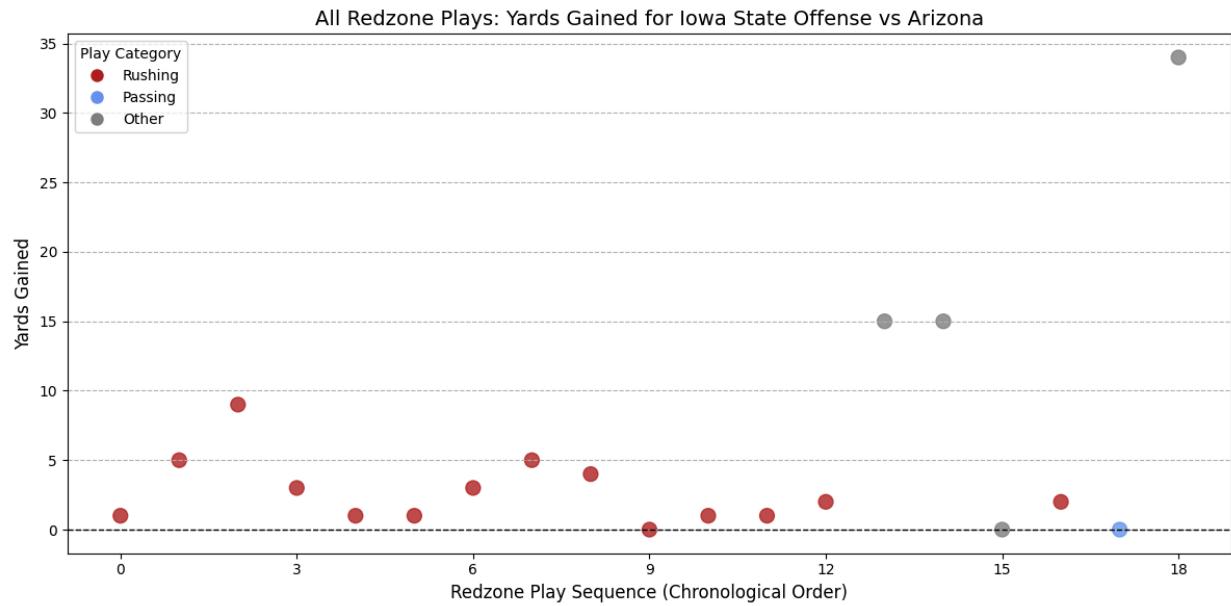


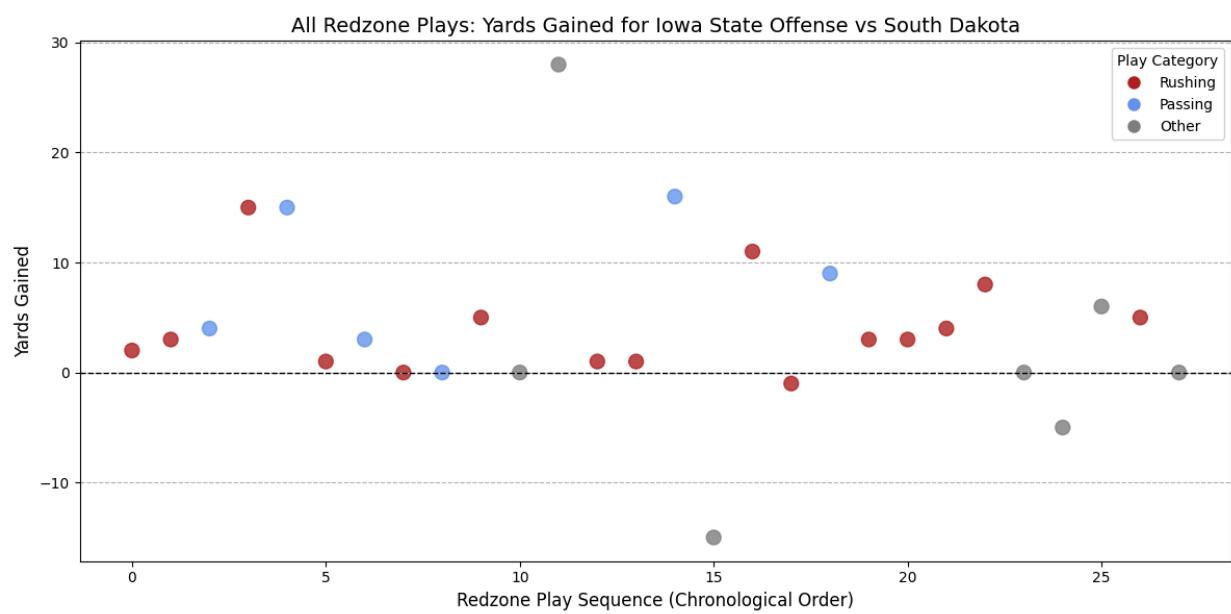
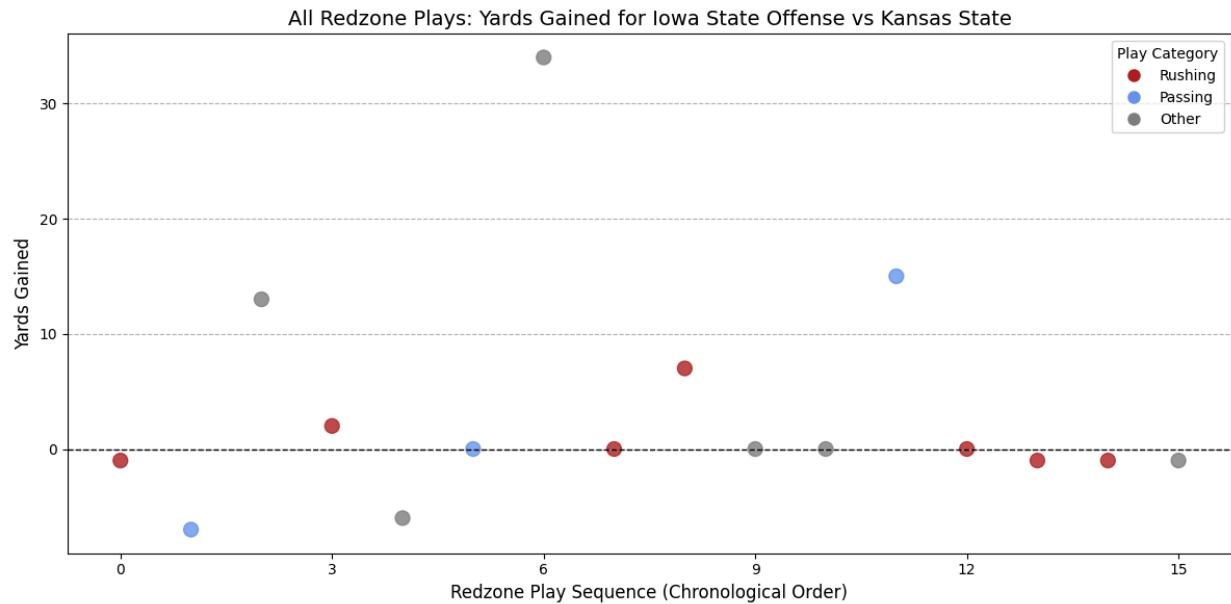
Report

ISU Football Data Analysis

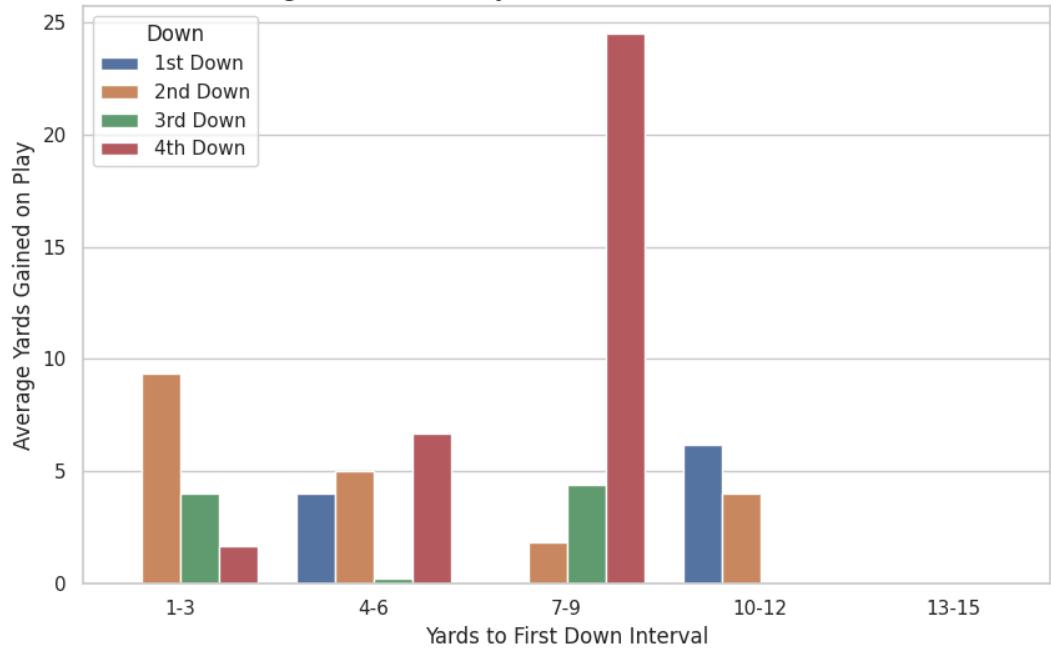
*By: Malachi Taylor, Jacob Gunderson, Andrew Kruger, Julian Mathew,
Patrick Adduci, Luke Randolph, Sawyer Chopskie*

Graphs

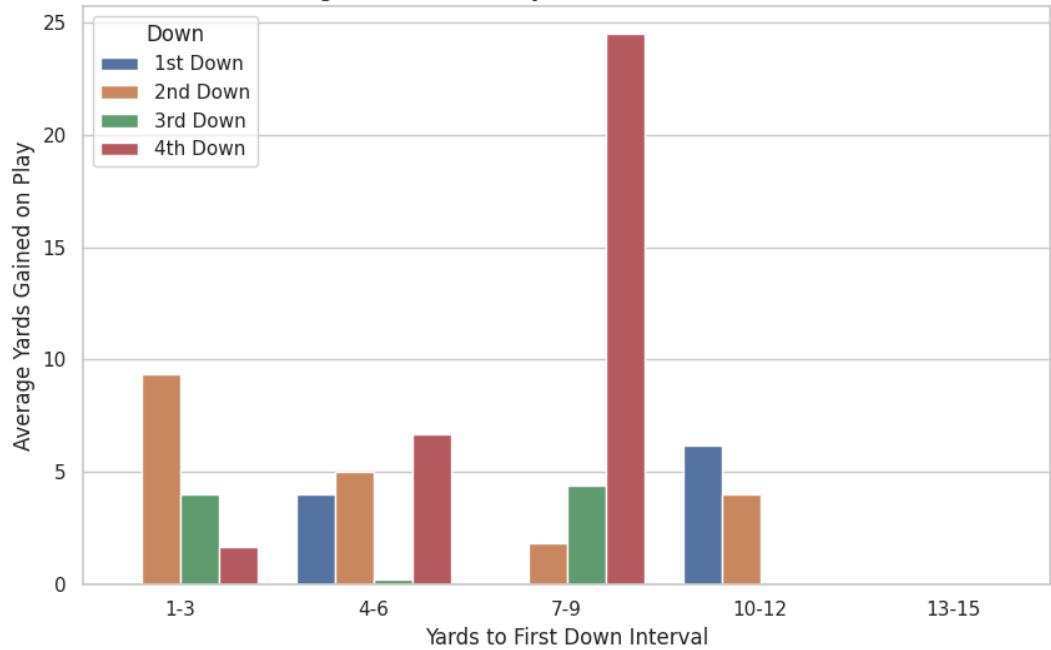




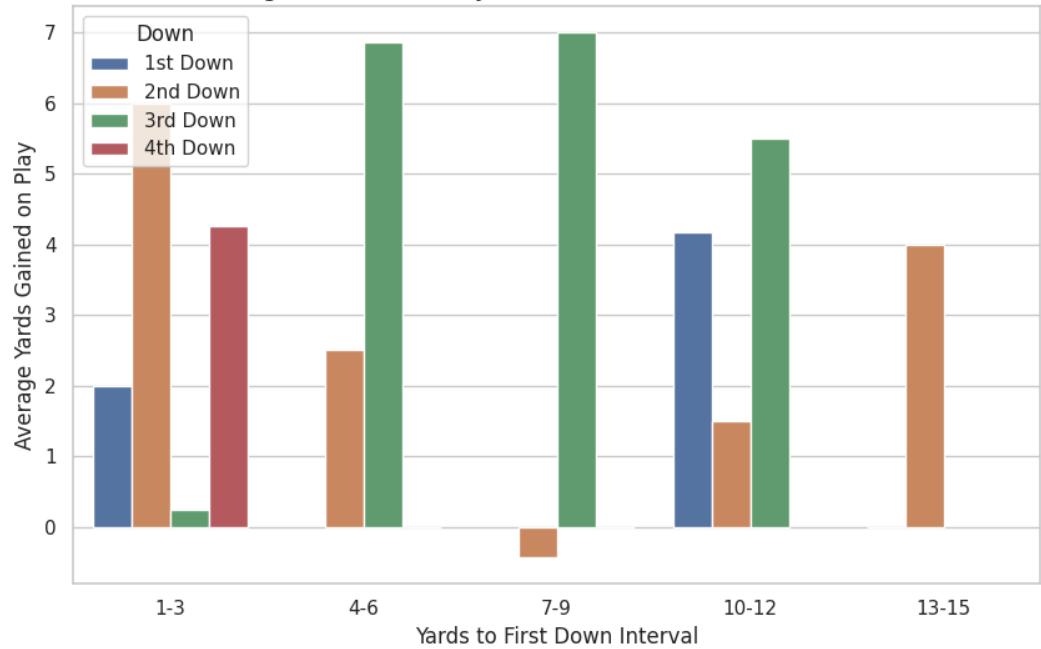
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Arizona State)



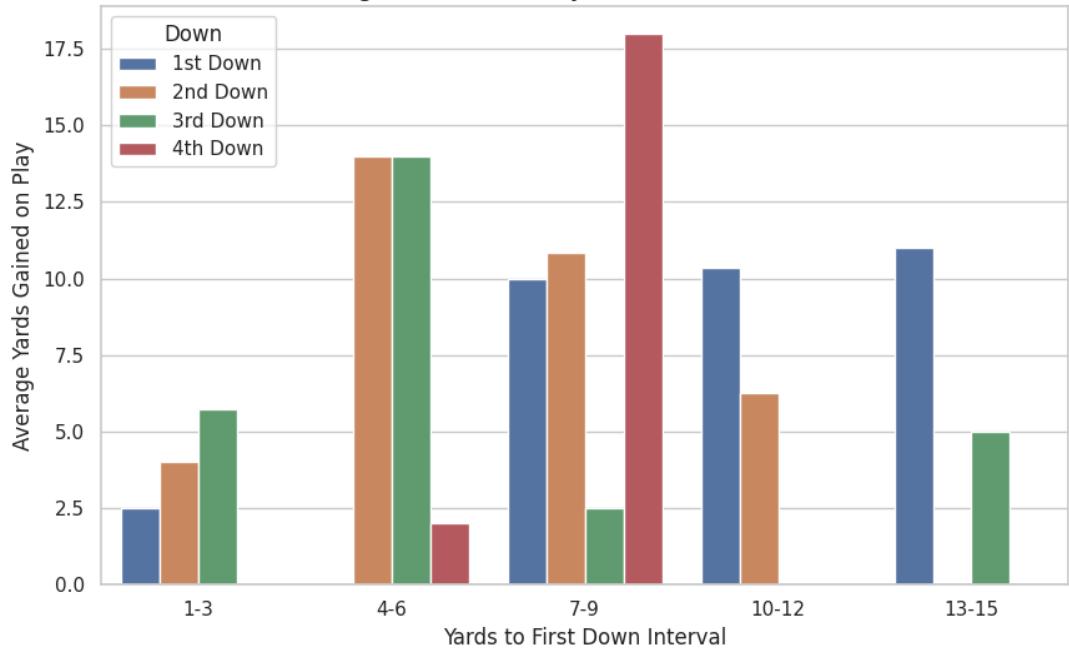
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Arizona)



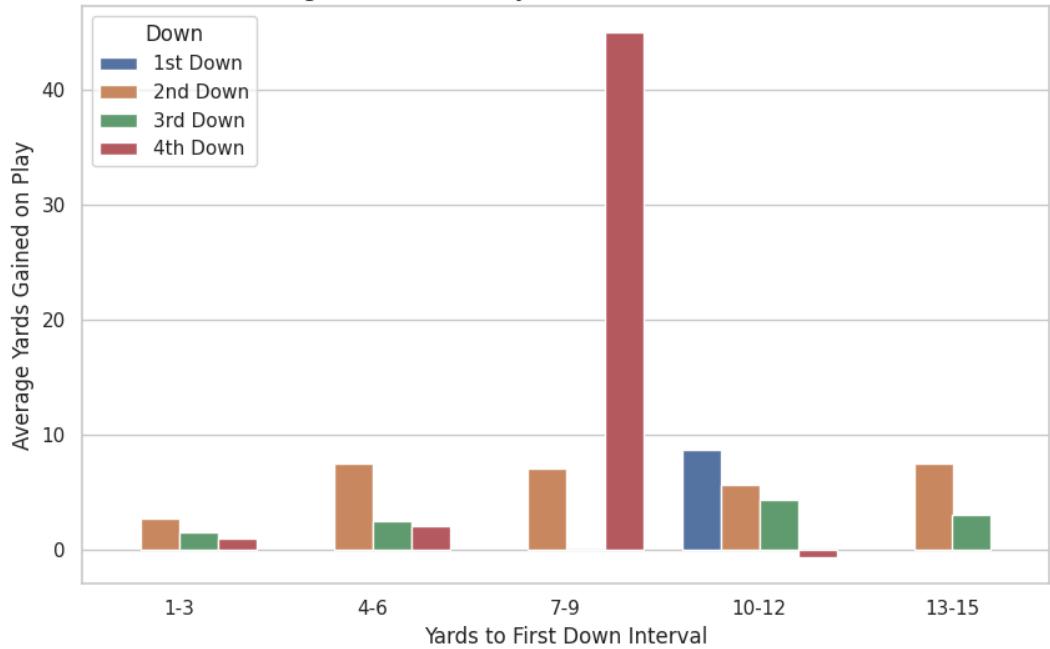
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Arkansas State)



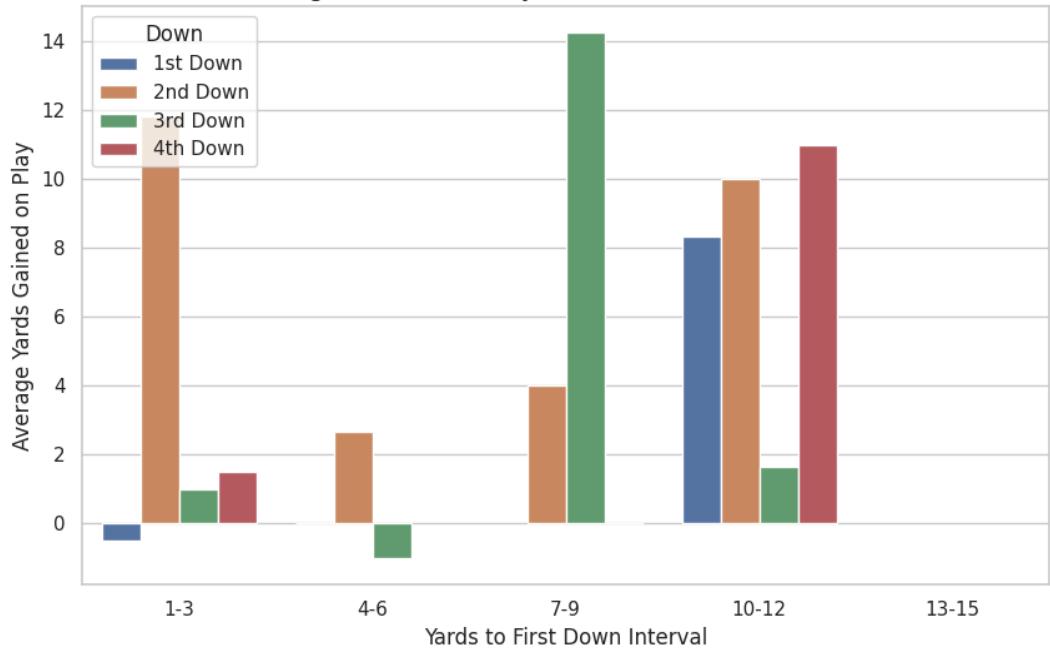
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. BYU)



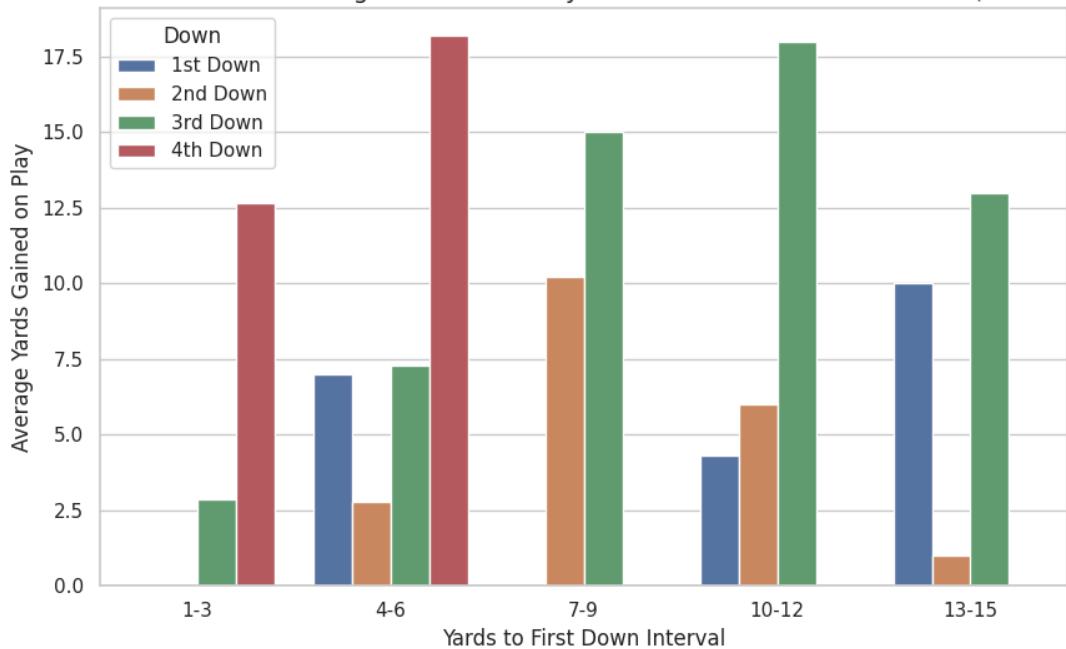
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Cincinnati)



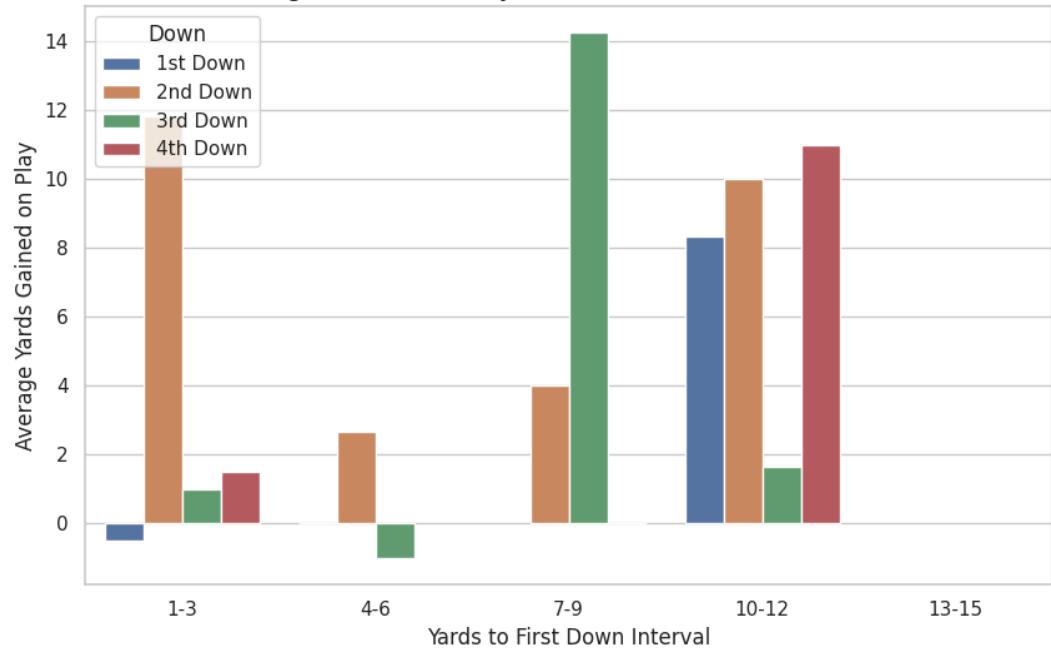
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Colorado)



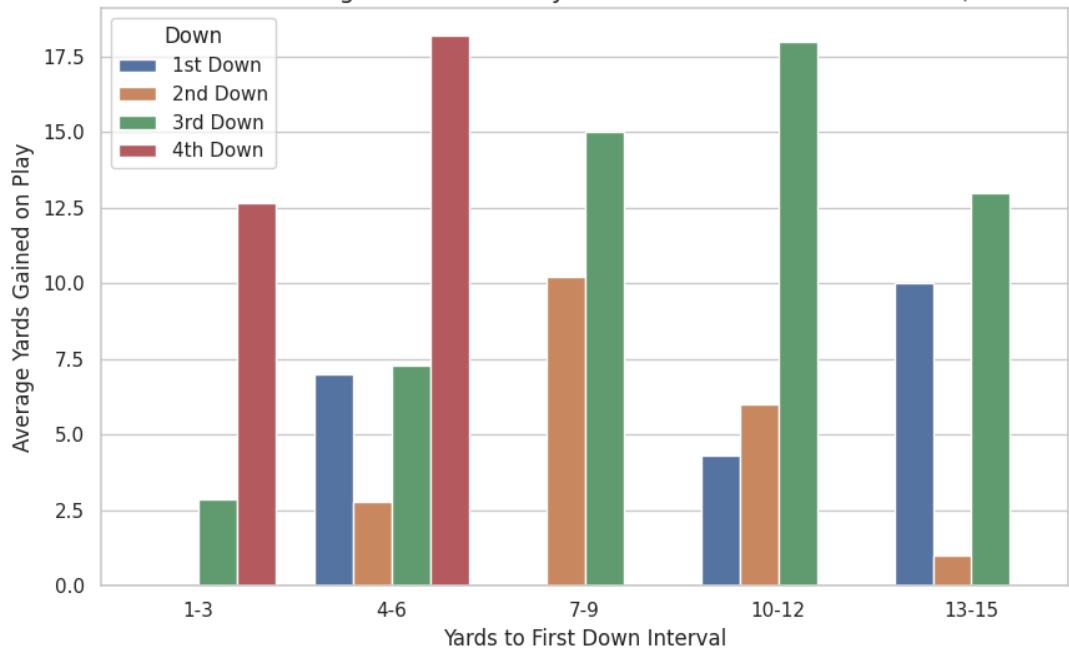
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Iowa)



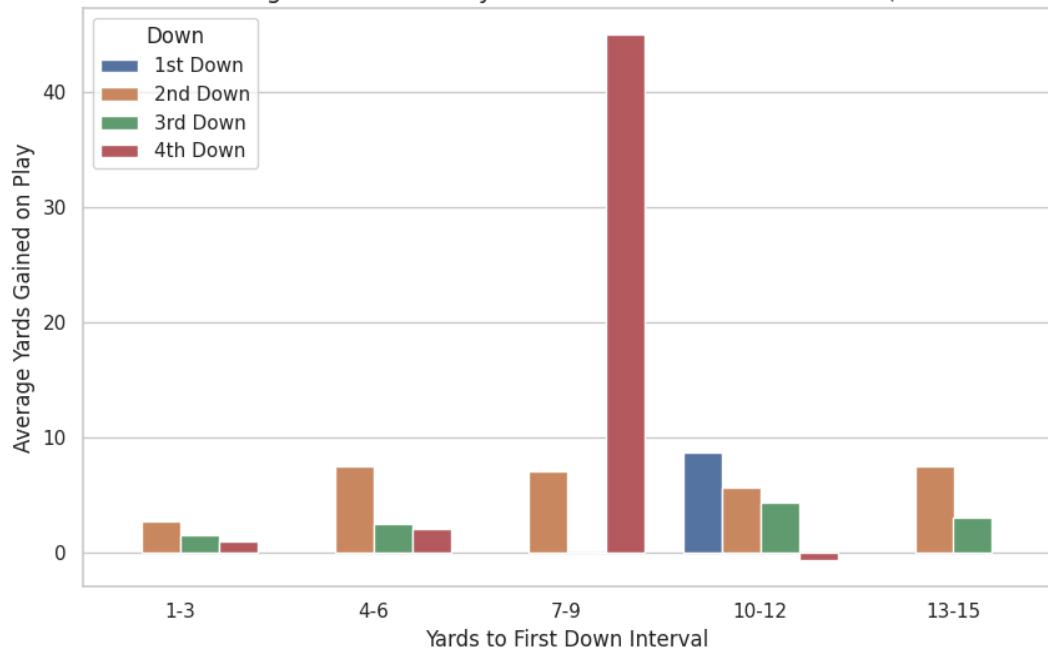
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Kansas State)



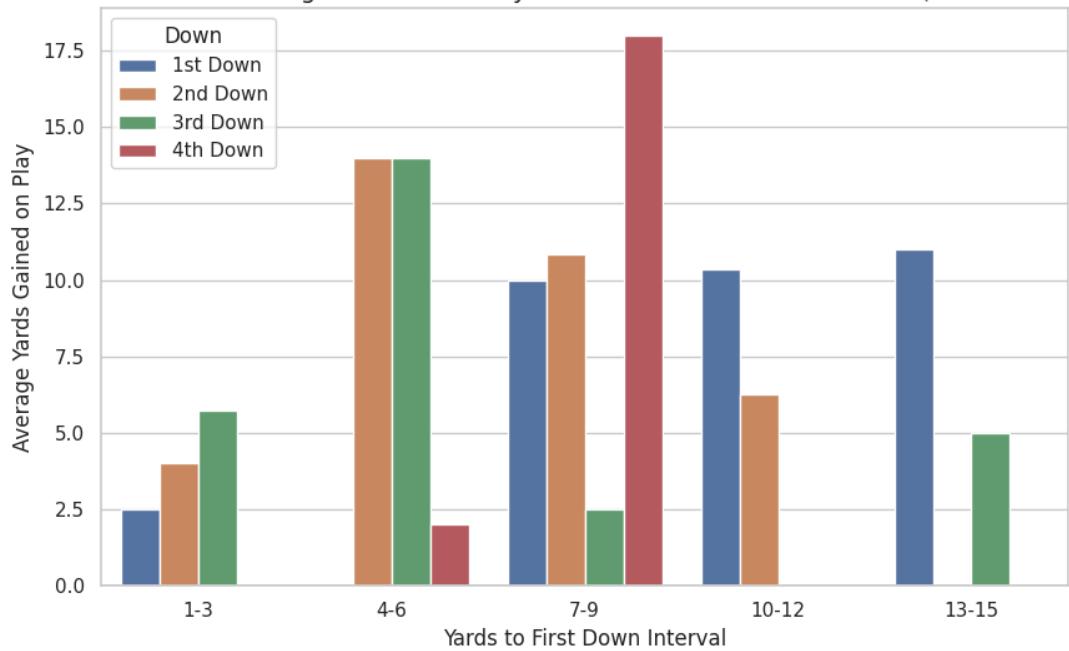
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Kansas)



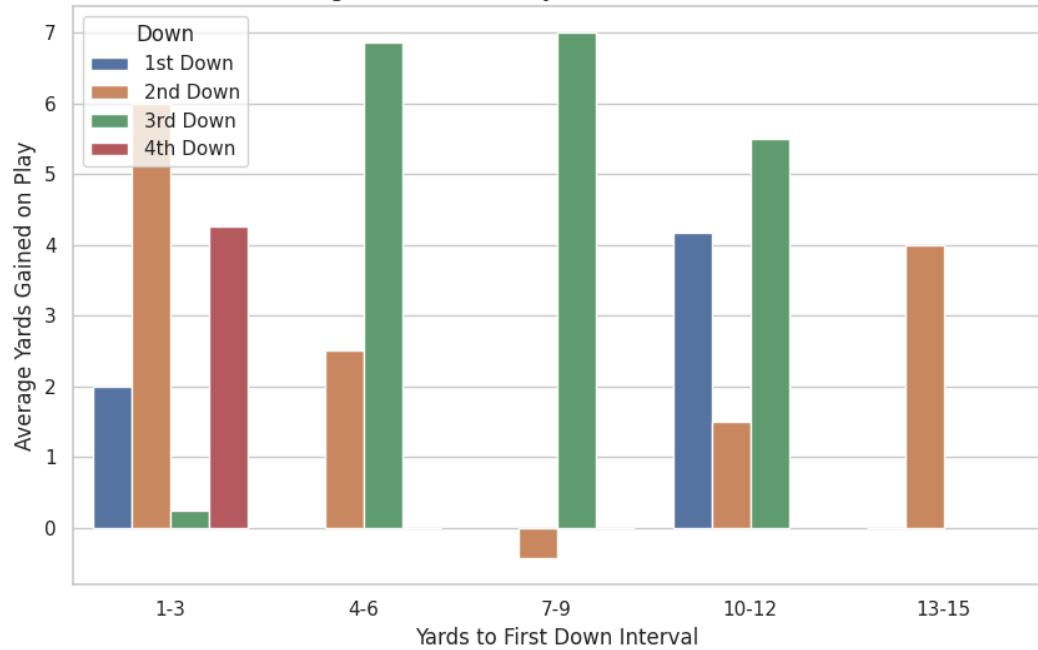
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Oklahoma State)



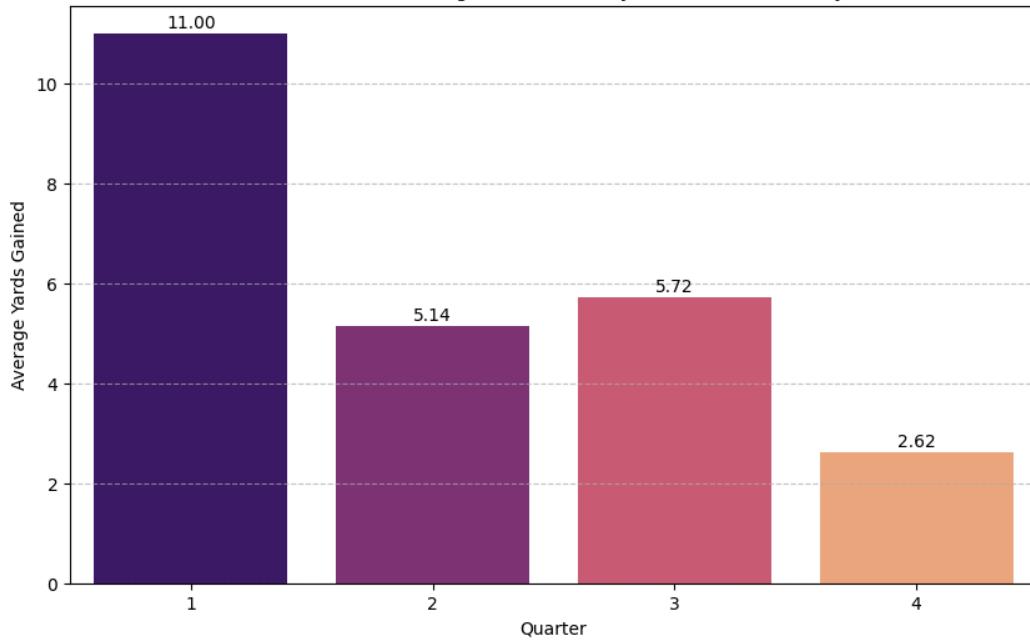
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. South Dakota)



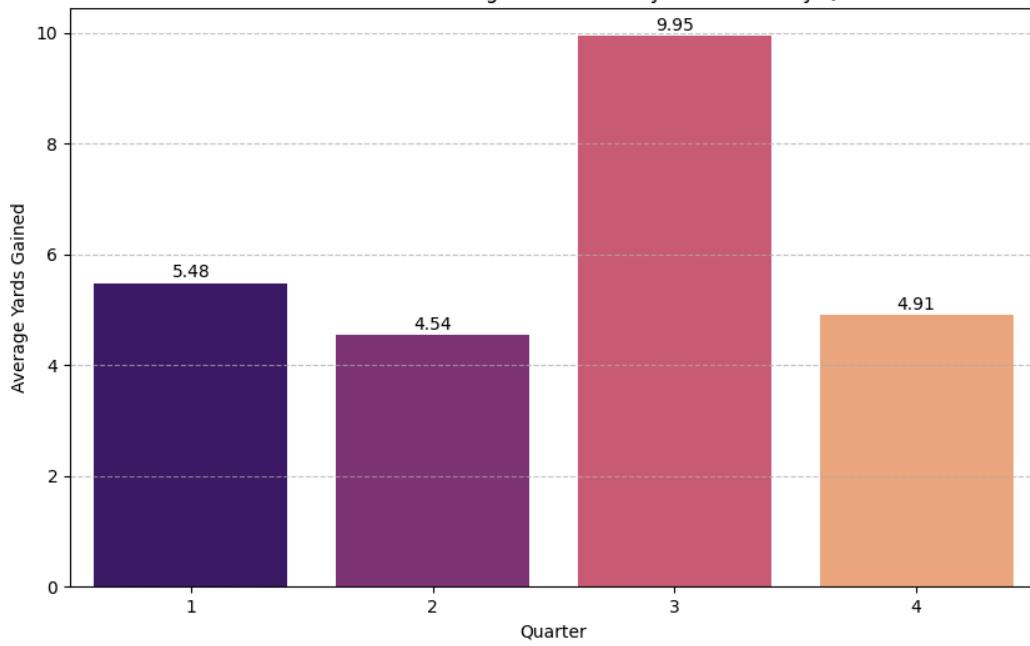
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. TCU)



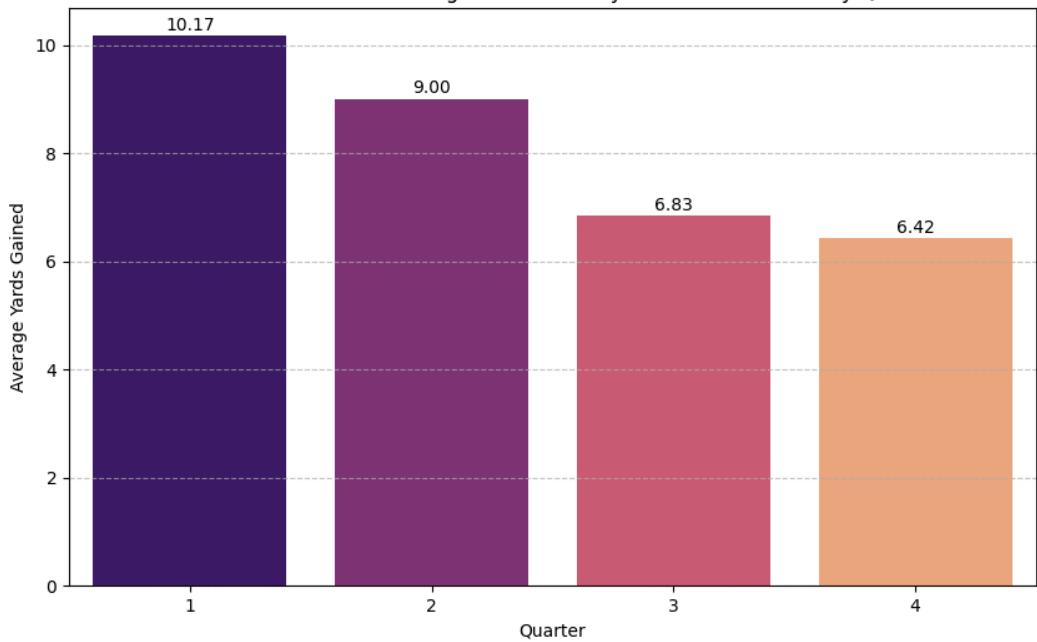
Iowa State Offensive Average Yards Per Play vs. Arizona State by Quarter



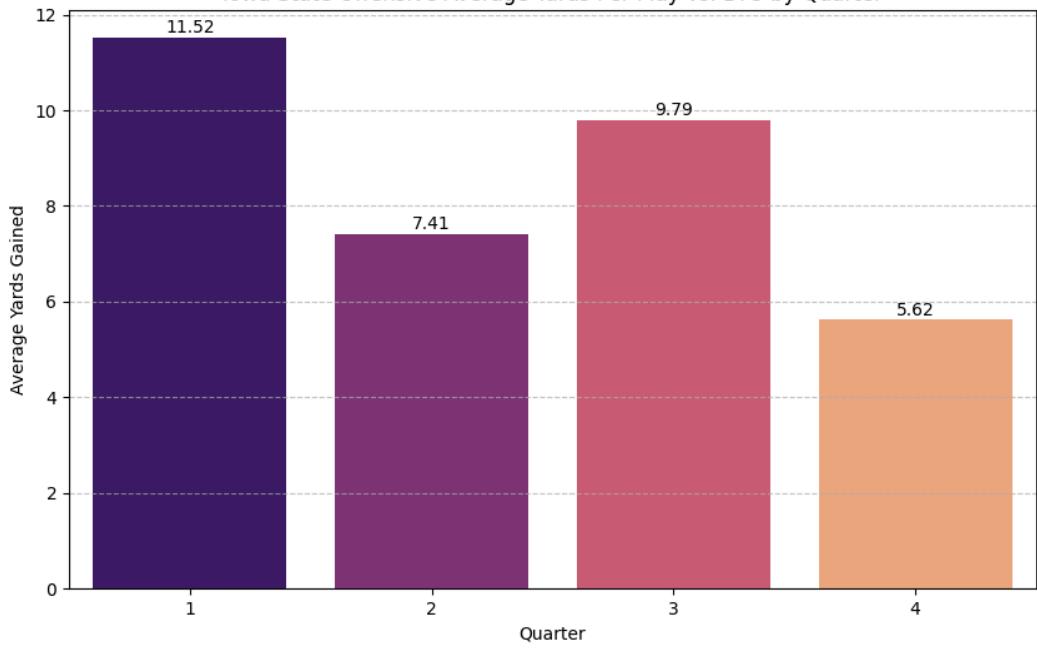
Iowa State Offensive Average Yards Per Play vs. Arizona by Quarter



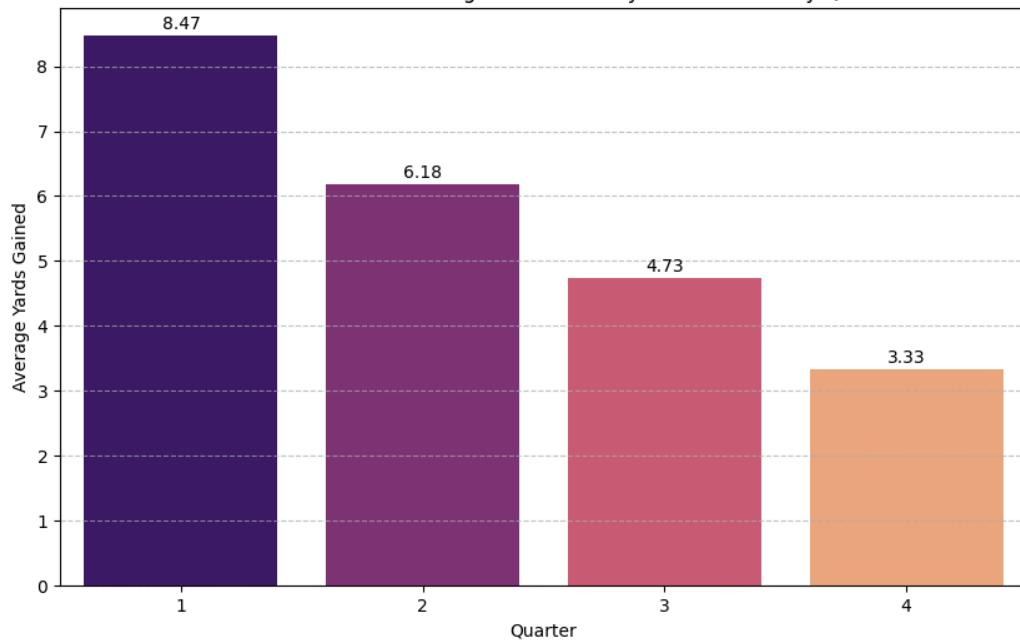
Iowa State Offensive Average Yards Per Play vs. Arkansas State by Quarter



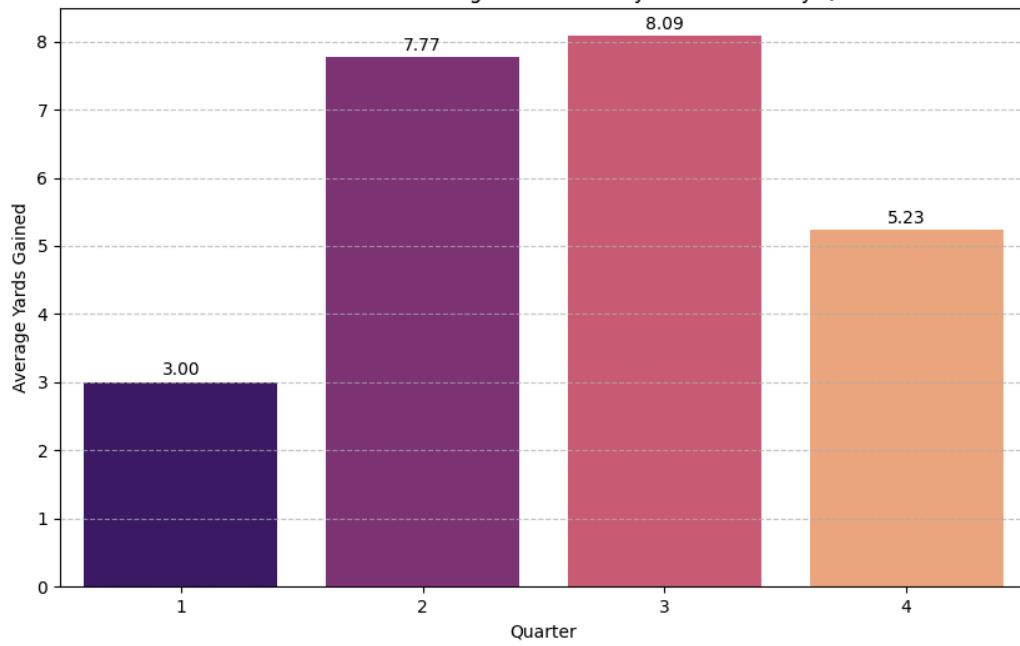
Iowa State Offensive Average Yards Per Play vs. BYU by Quarter

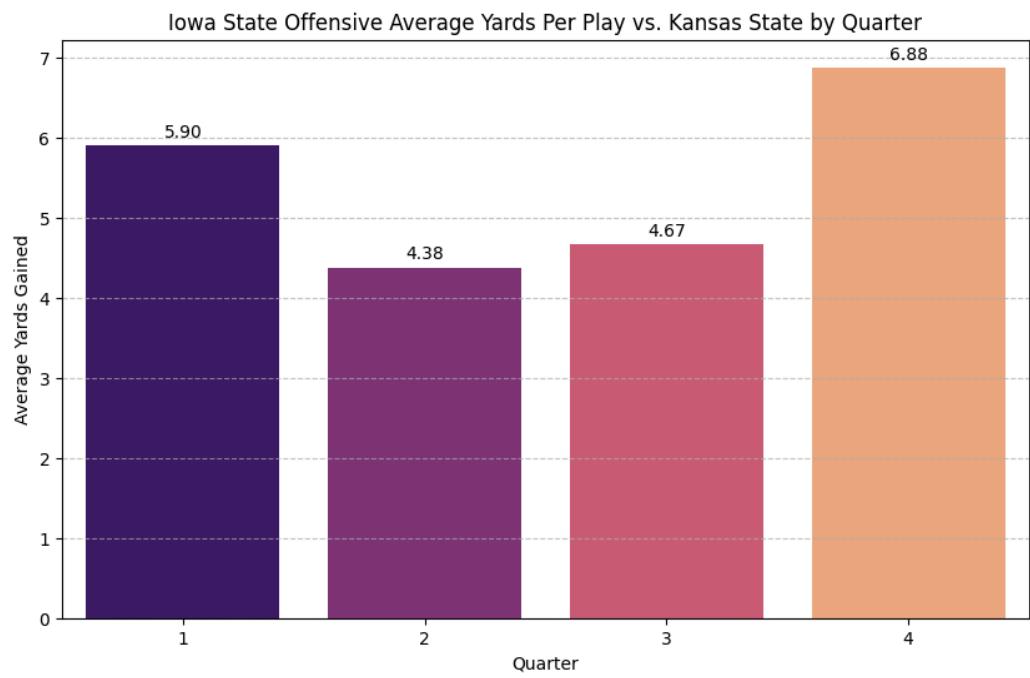
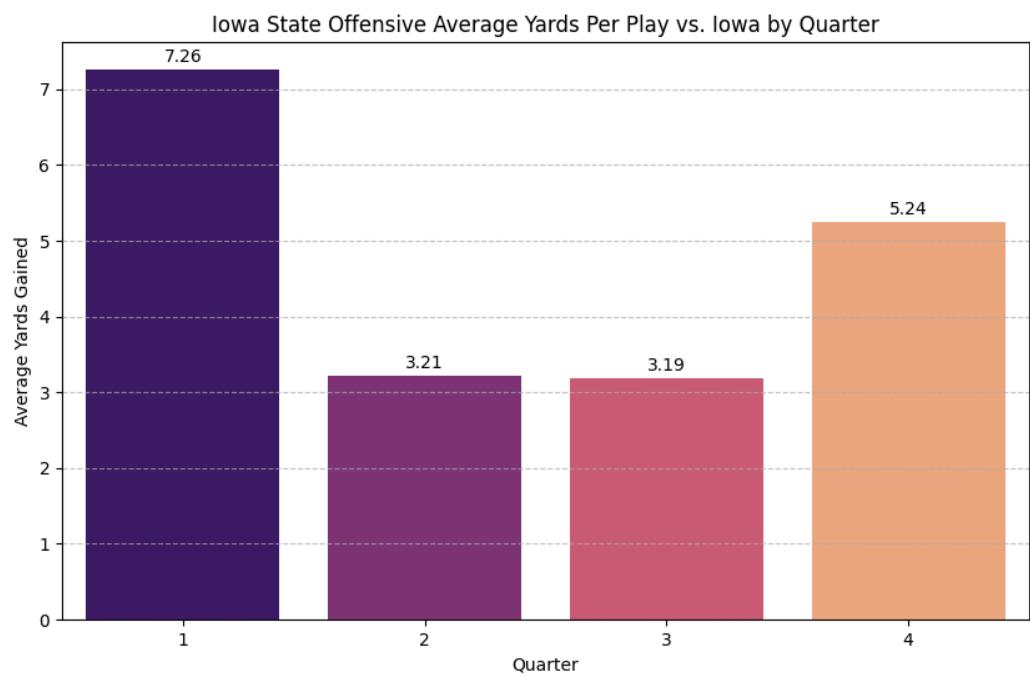


Iowa State Offensive Average Yards Per Play vs. Cincinnati by Quarter

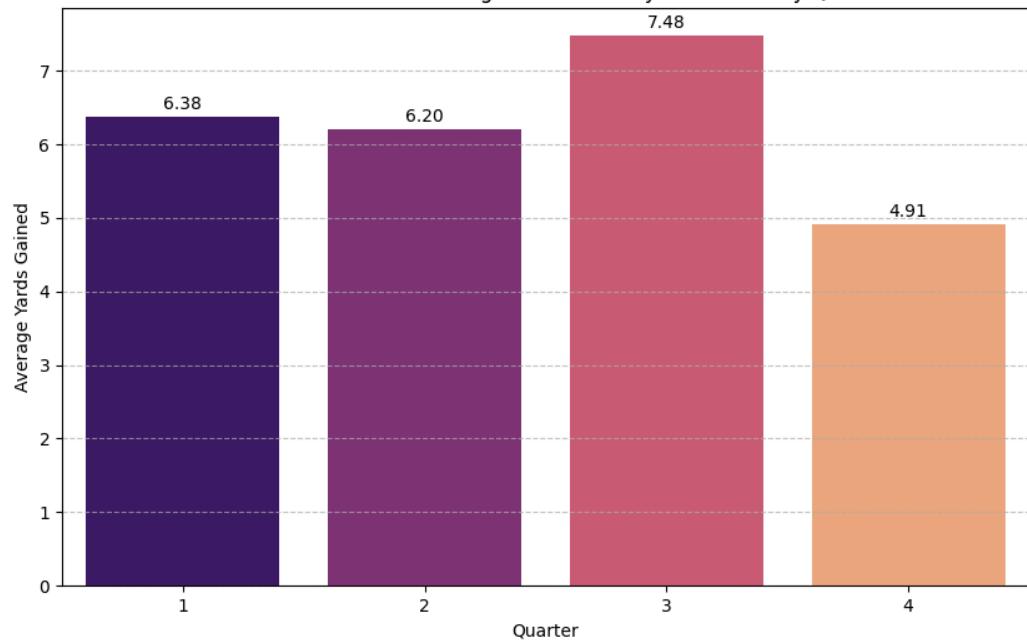


Iowa State Offensive Average Yards Per Play vs. Colorado by Quarter

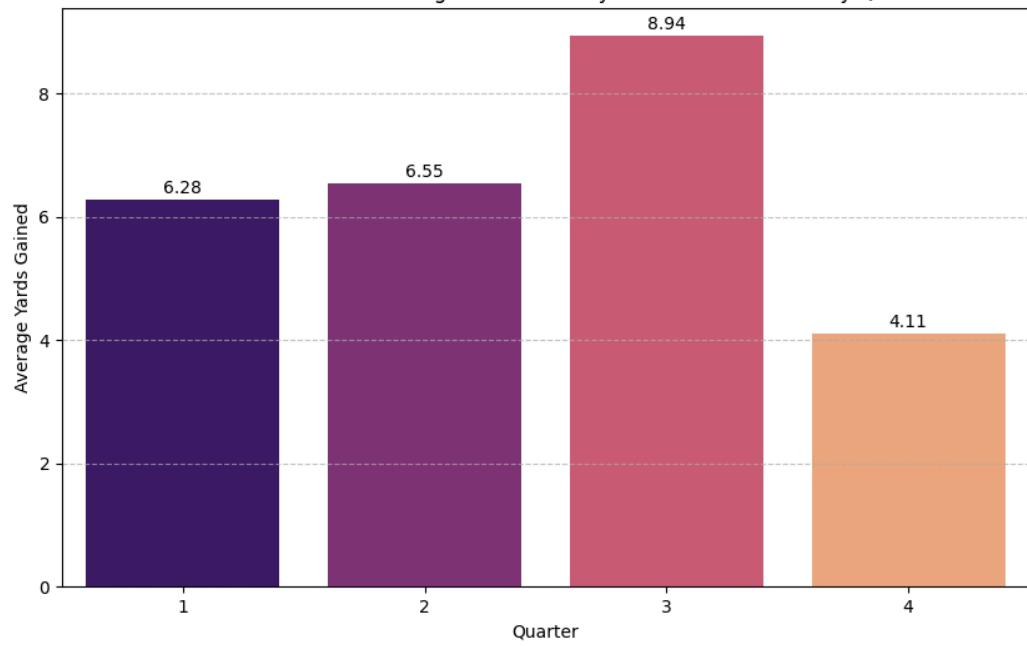




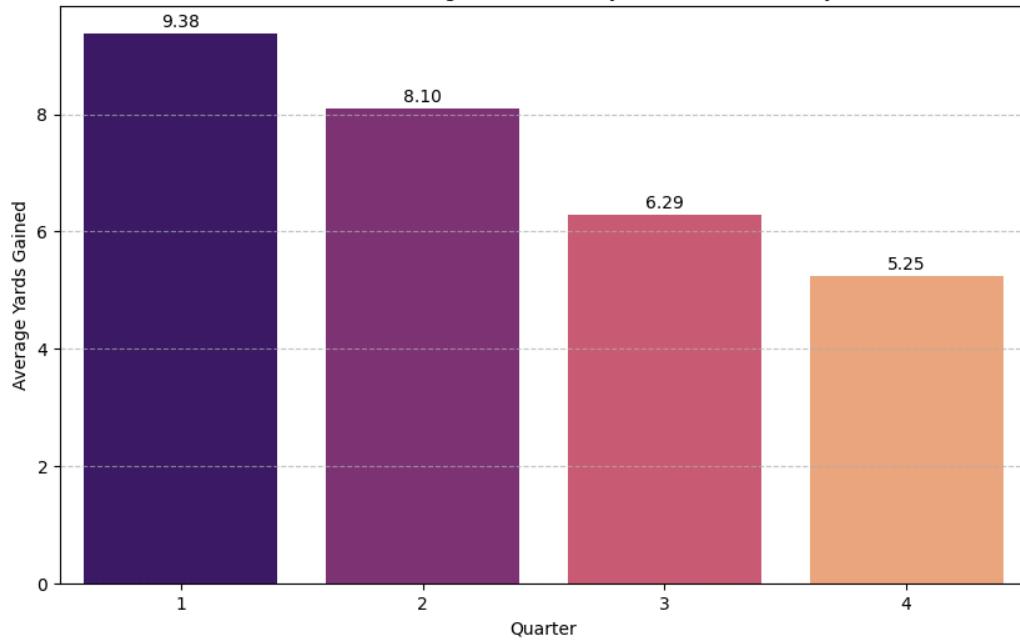
Iowa State Offensive Average Yards Per Play vs. Kansas by Quarter



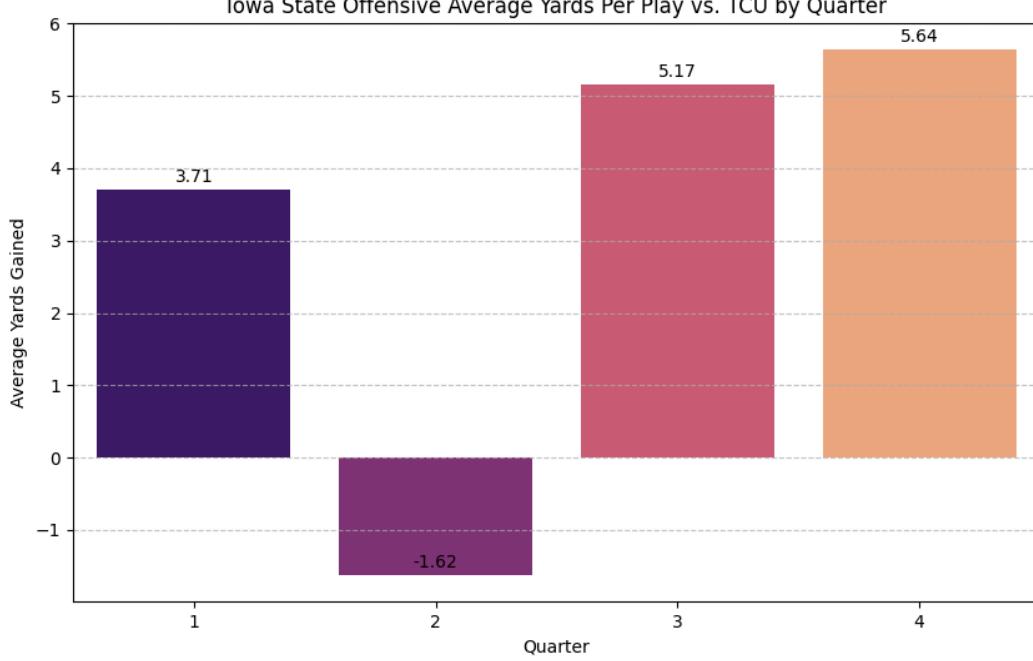
Iowa State Offensive Average Yards Per Play vs. Oklahoma State by Quarter



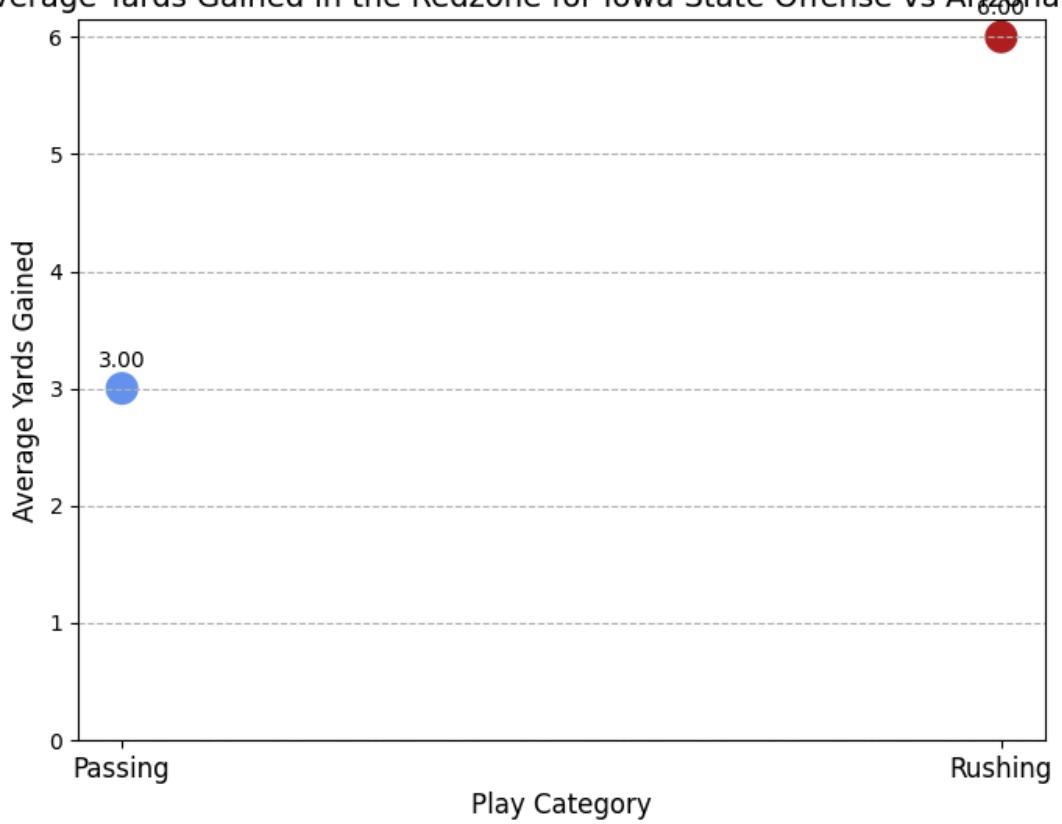
Iowa State Offensive Average Yards Per Play vs. South Dakota by Quarter



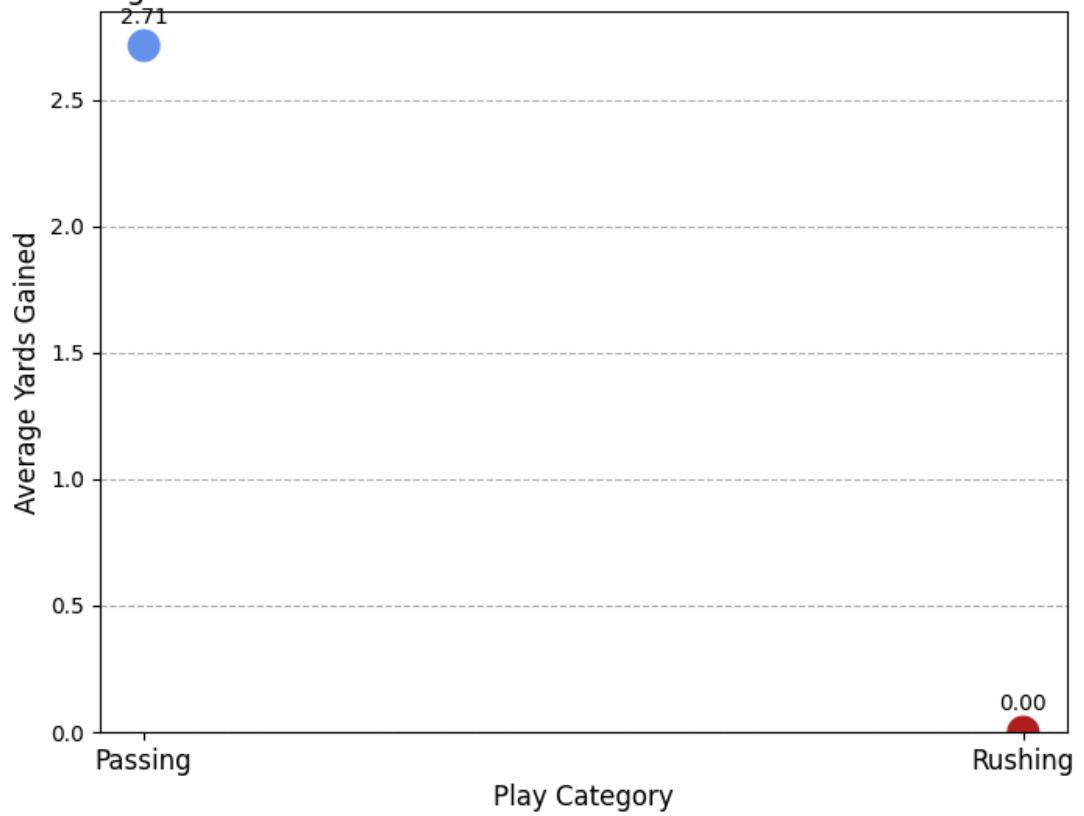
Iowa State Offensive Average Yards Per Play vs. TCU by Quarter



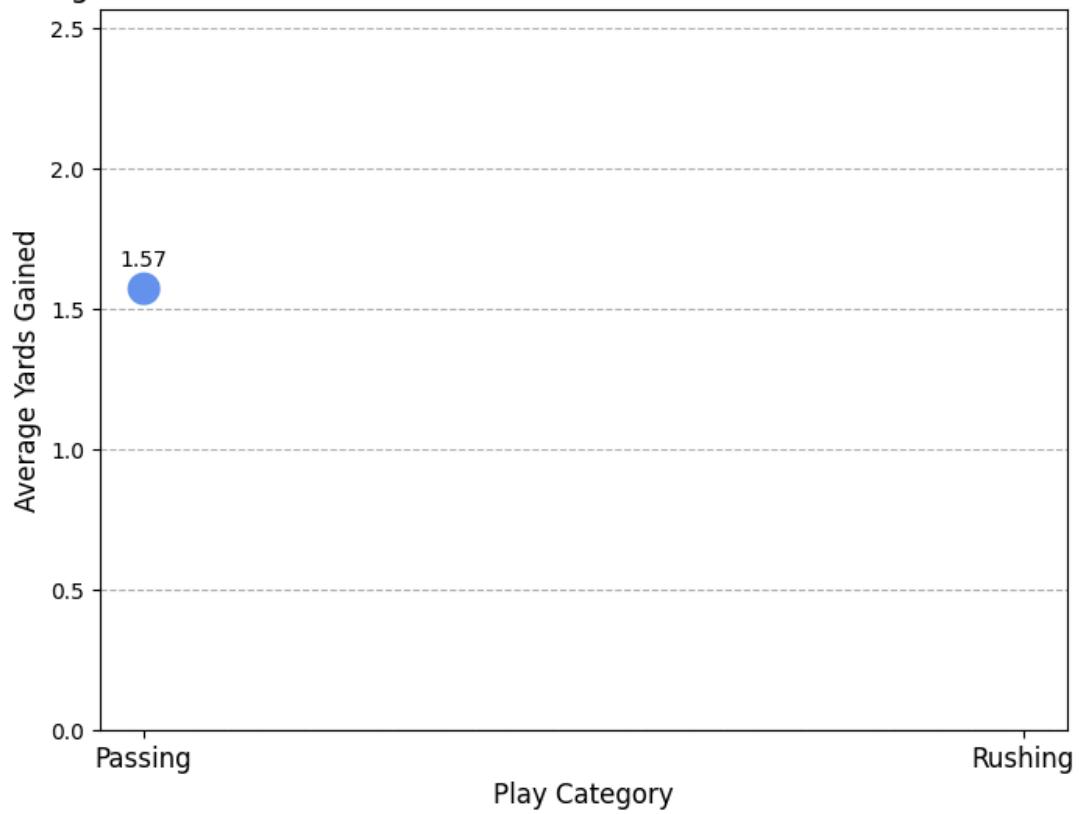
Average Yards Gained in the Redzone for Iowa State Offense vs Arizona State



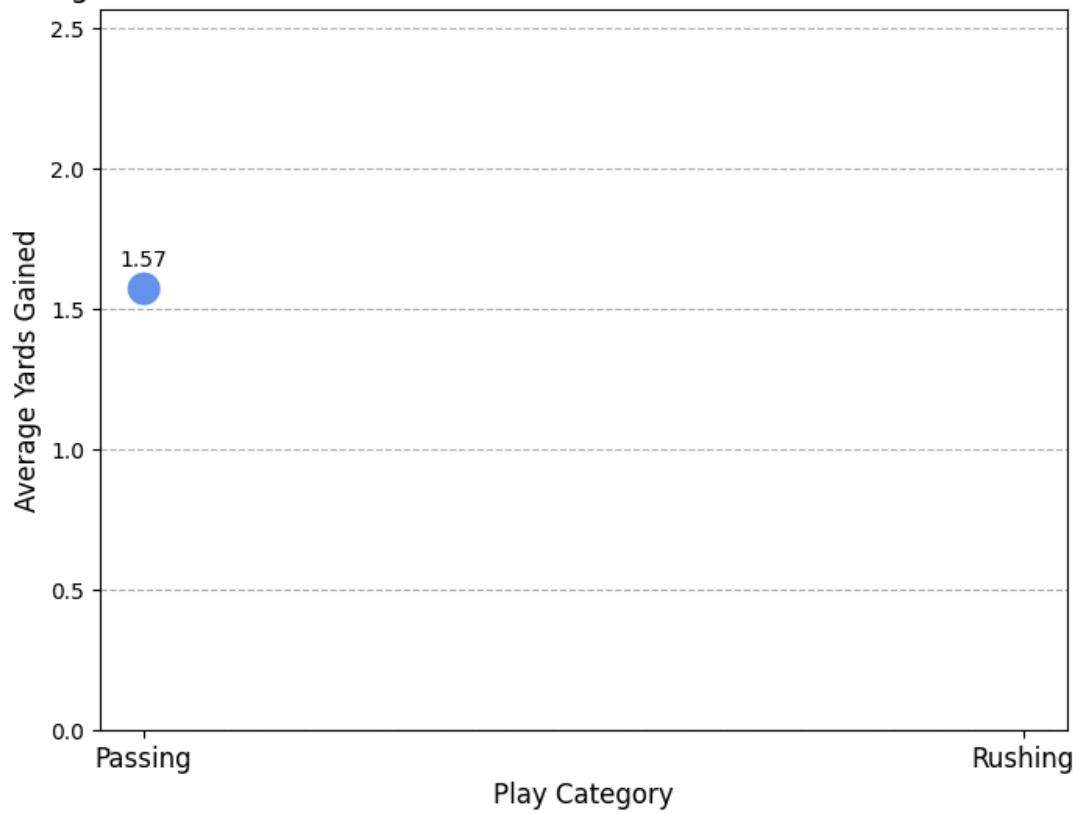
Average Yards Gained in the Redzone for Iowa State Offense vs Arizona



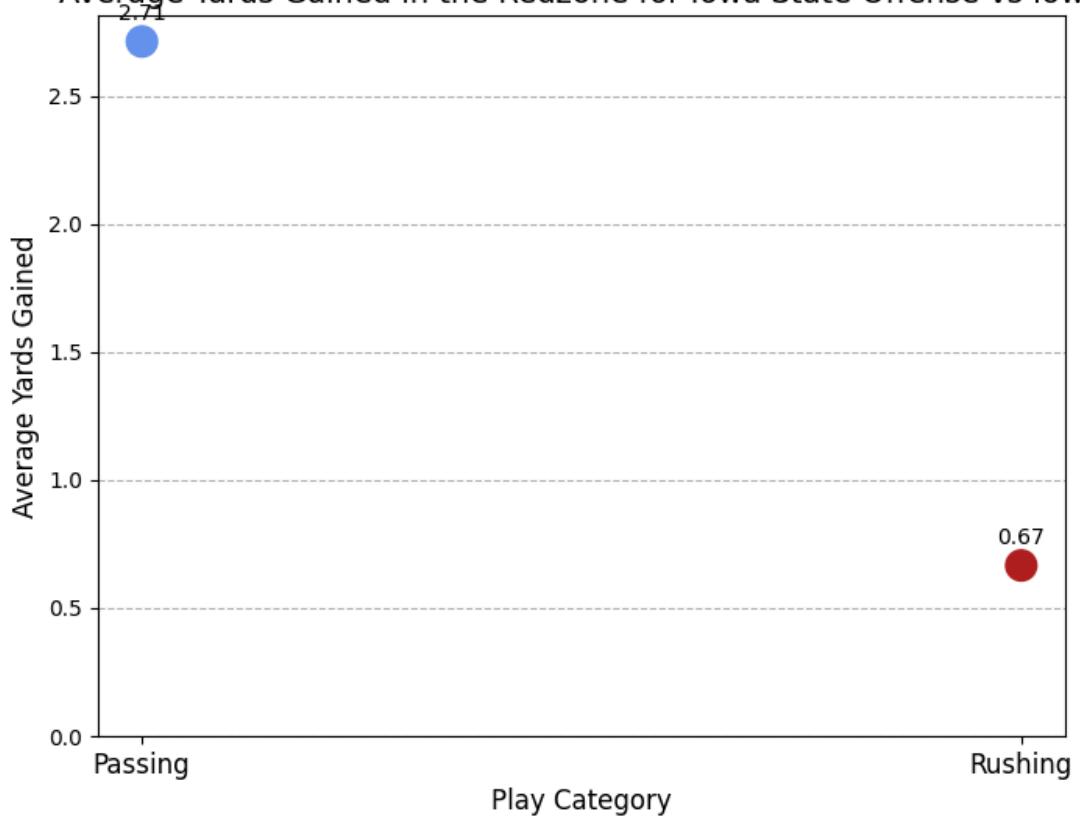
Average Yards Gained in the Redzone for Iowa State Offense vs Arkansas State



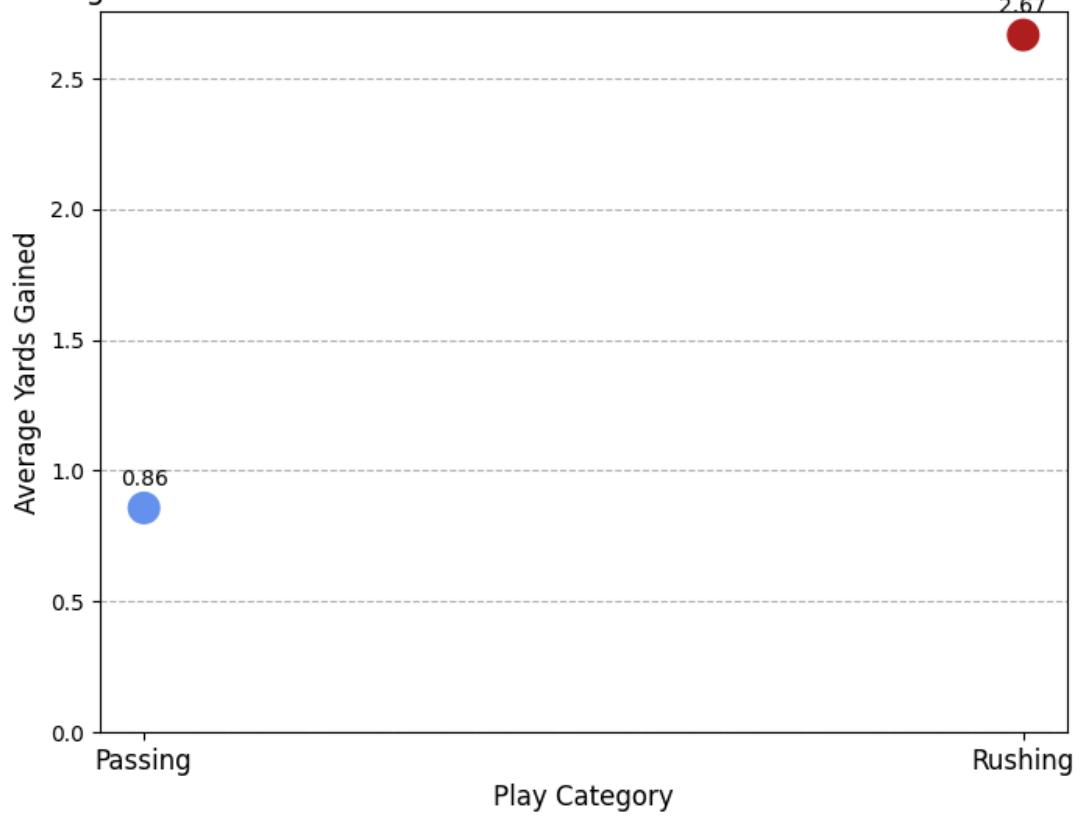
Average Yards Gained in the Redzone for Iowa State Offense vs Arkansas State



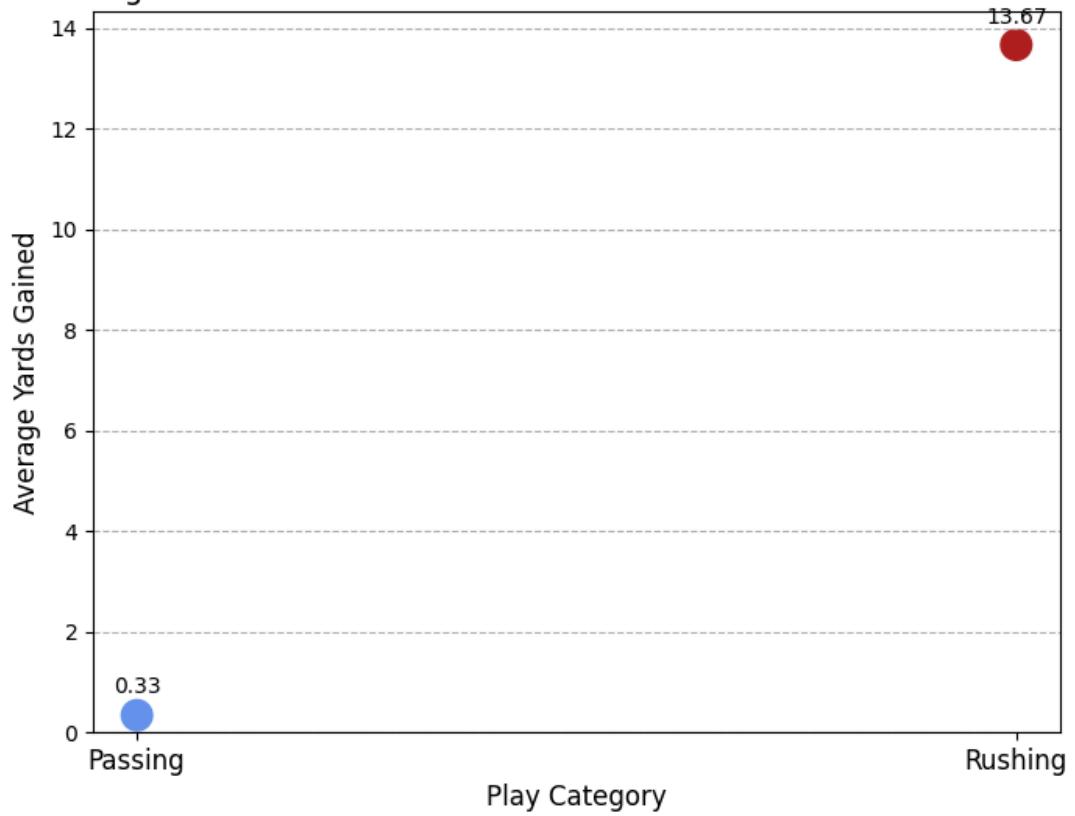
Average Yards Gained in the Redzone for Iowa State Offense vs Iowa



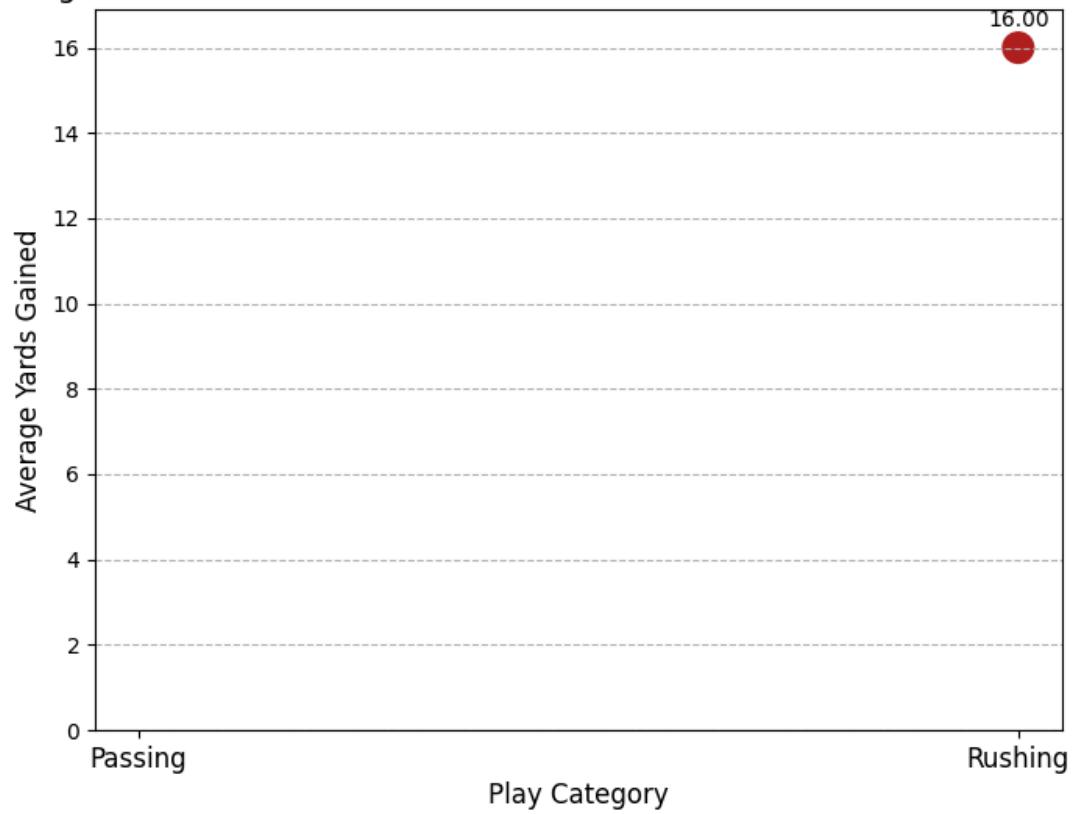
Average Yards Gained in the Redzone for Iowa State Offense vs Kansas State



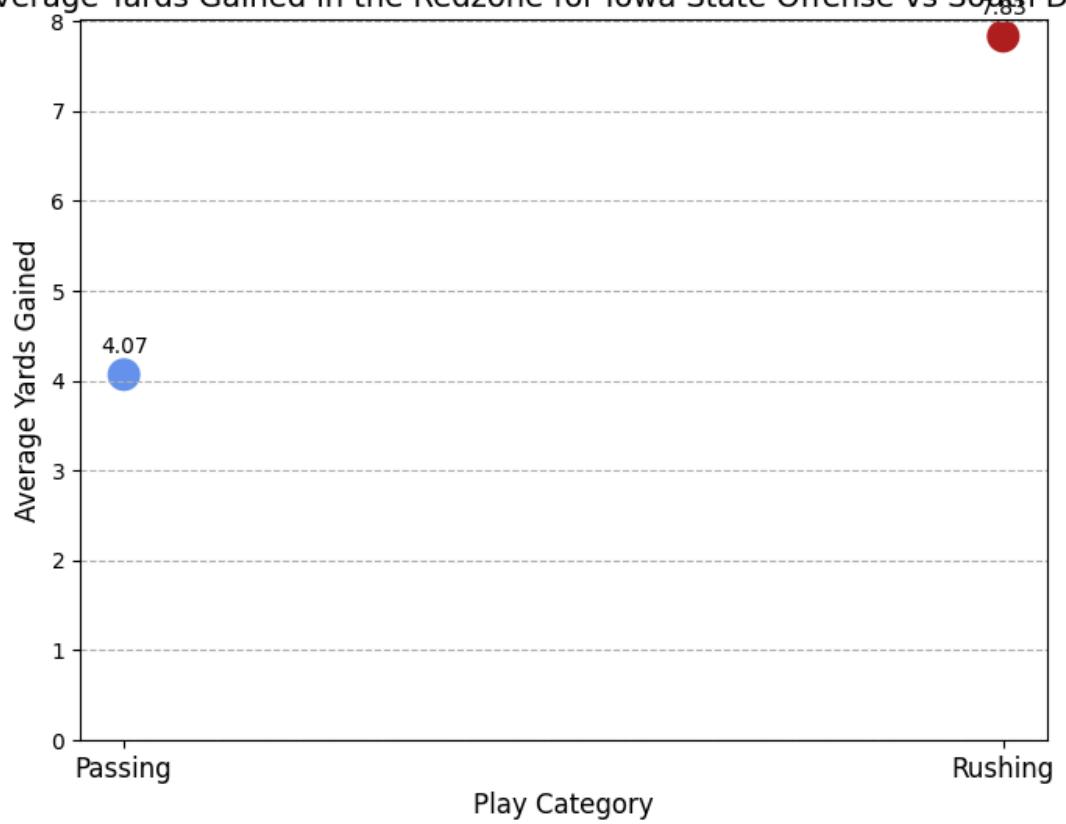
Average Yards Gained in the Redzone for Iowa State Offense vs Kansas

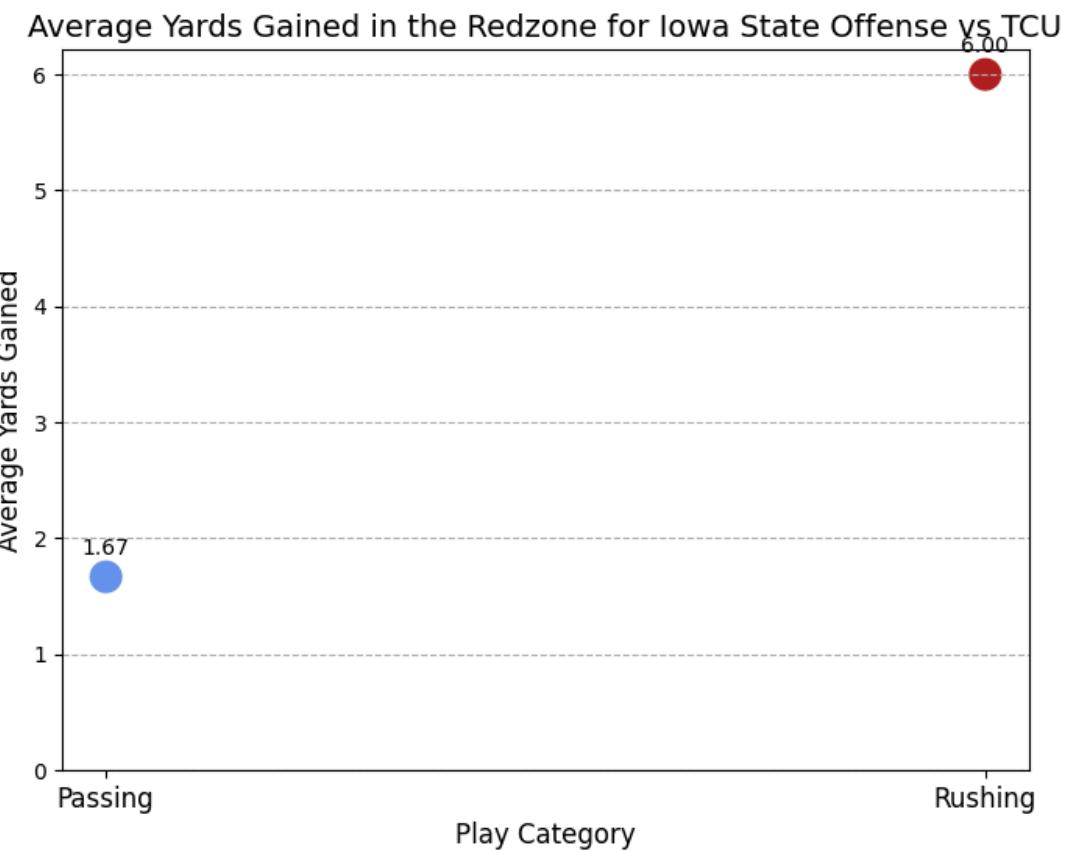


Average Yards Gained in the Redzone for Iowa State Offense vs Oklahoma State

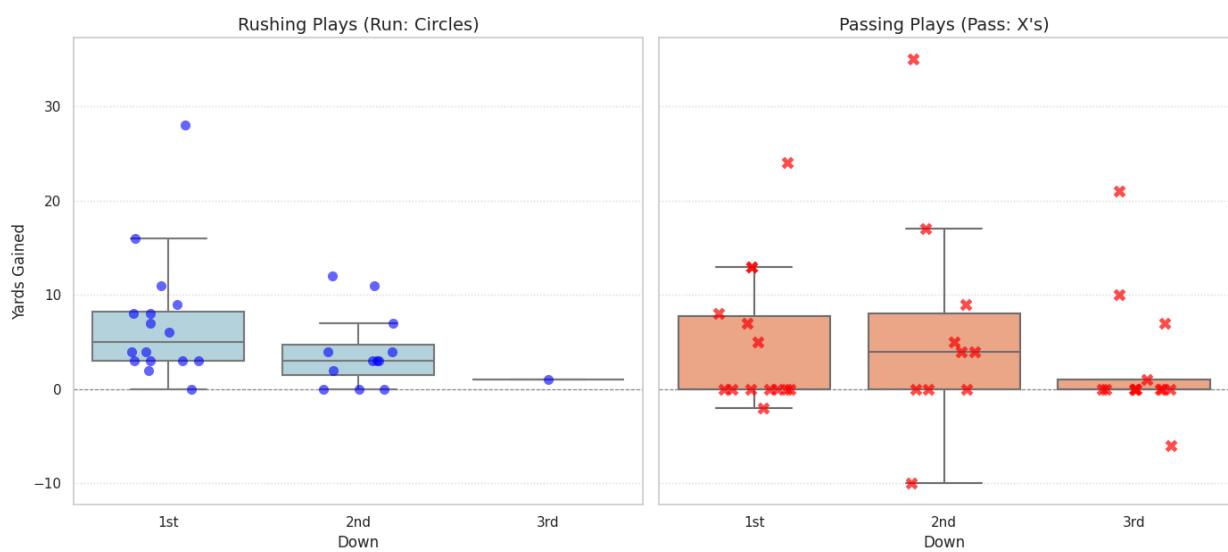


Average Yards Gained in the Redzone for Iowa State Offense vs South Dakota

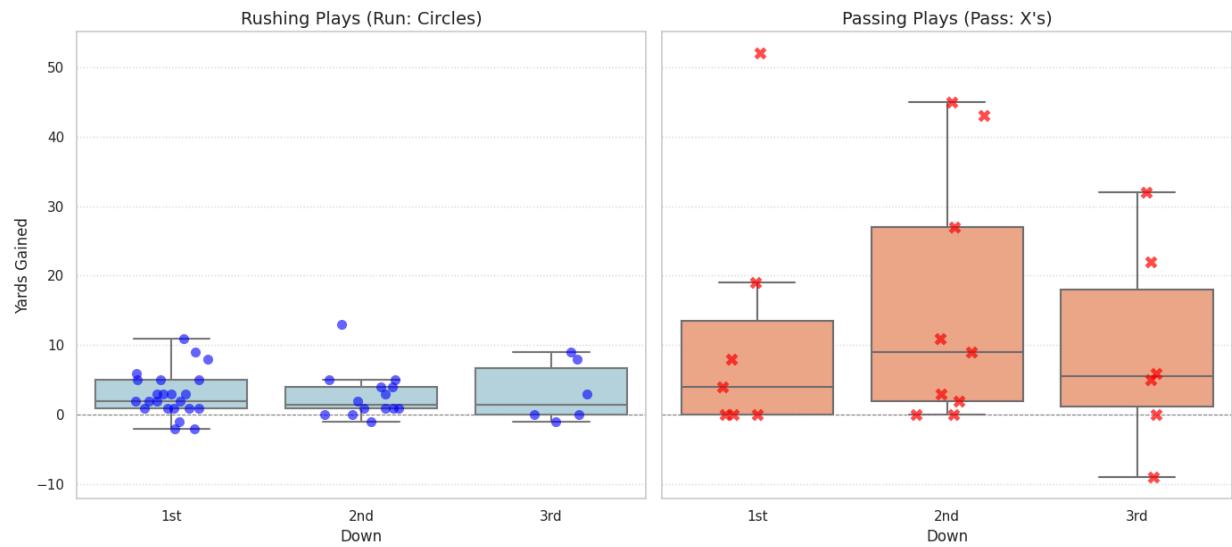




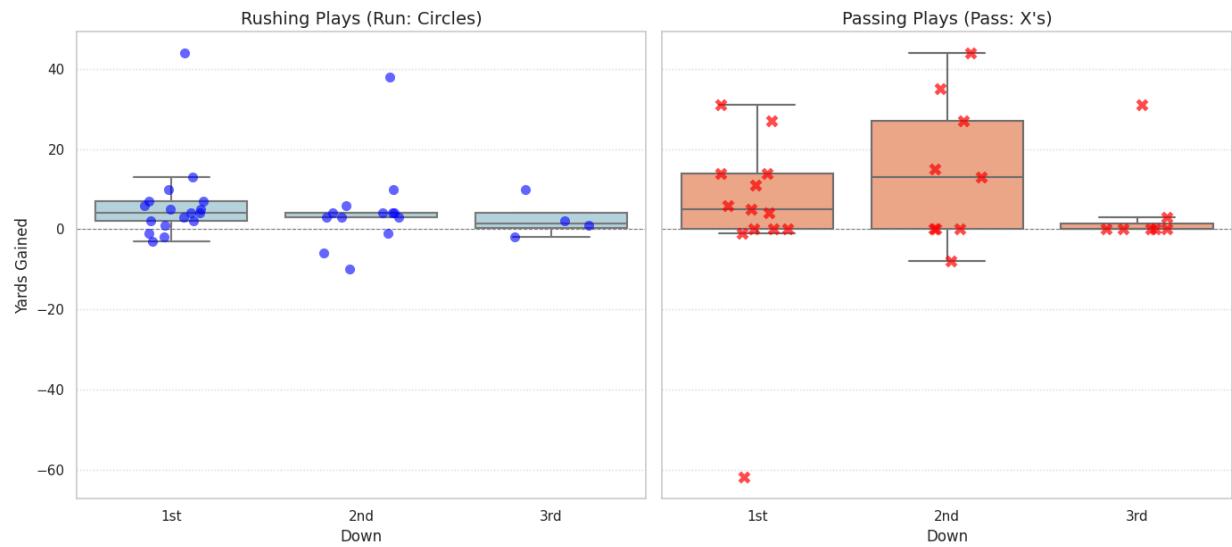
Iowa State Yards Gained vs Arizona State: Run vs Pass by Down (Box & Scatter)



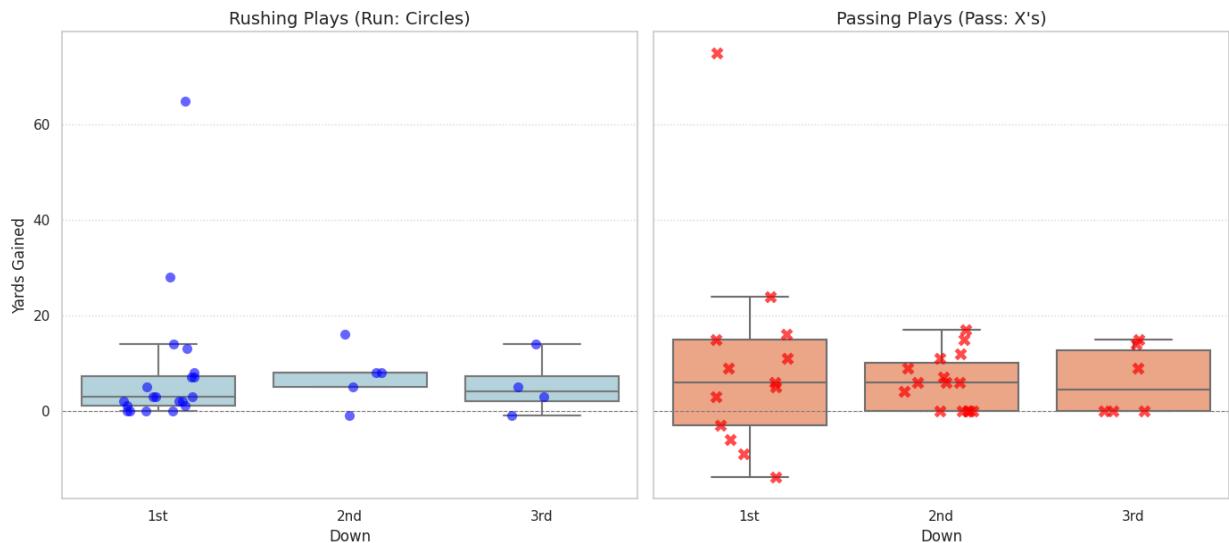
Iowa State Yards Gained vs Arizona: Run vs Pass by Down (Box & Scatter)



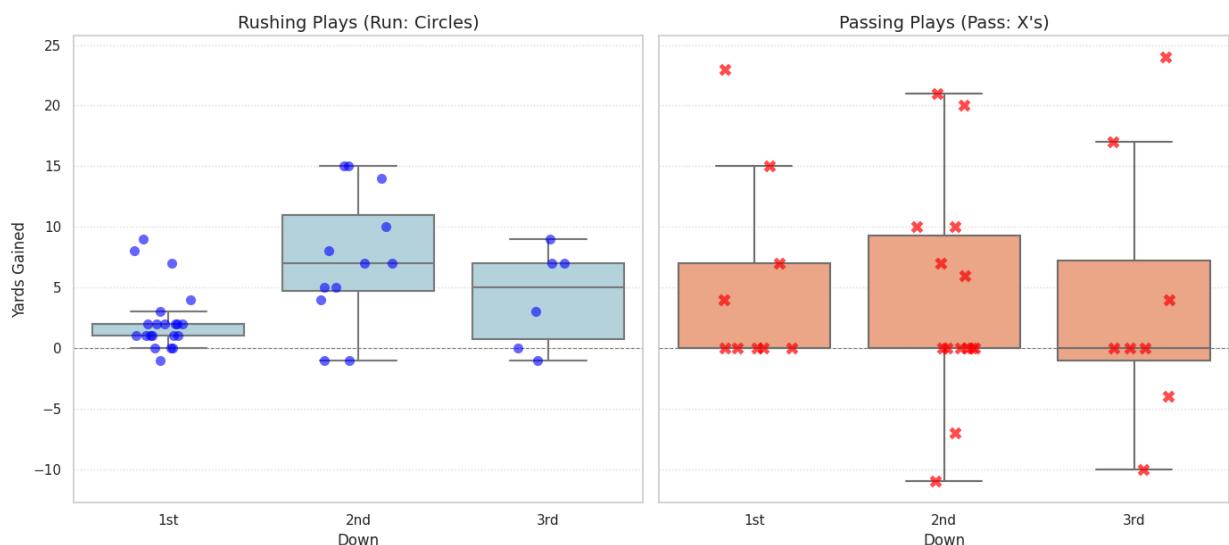
Iowa State Yards Gained vs Arkansas State: Run vs Pass by Down (Box & Scatter)



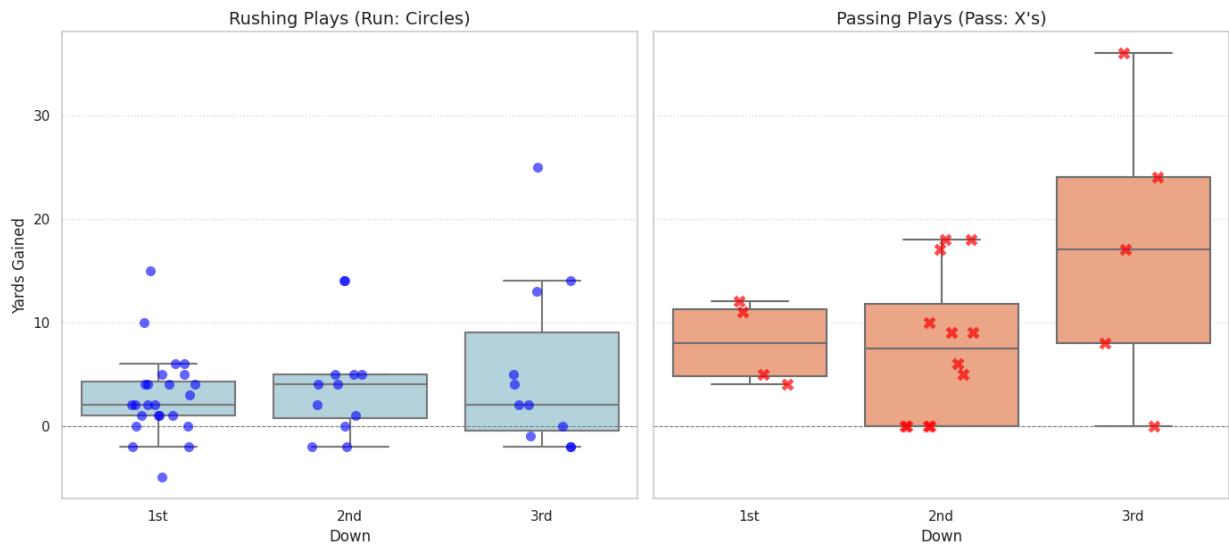
Iowa State Yards Gained vs BYU: Run vs Pass by Down (Box & Scatter)



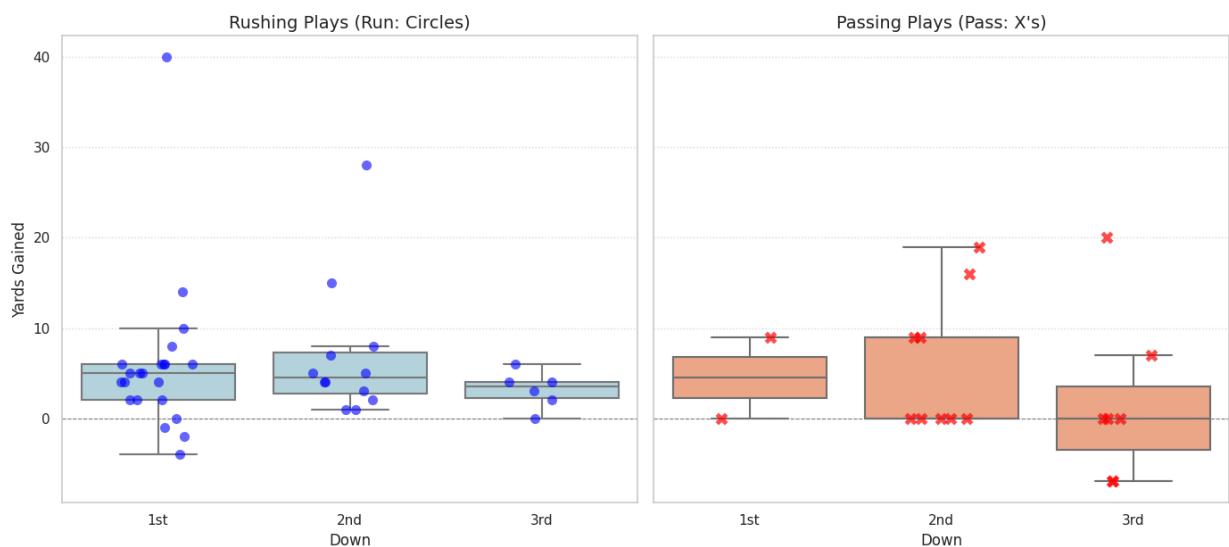
Iowa State Yards Gained vs Kansas State: Run vs Pass by Down (Box & Scatter)



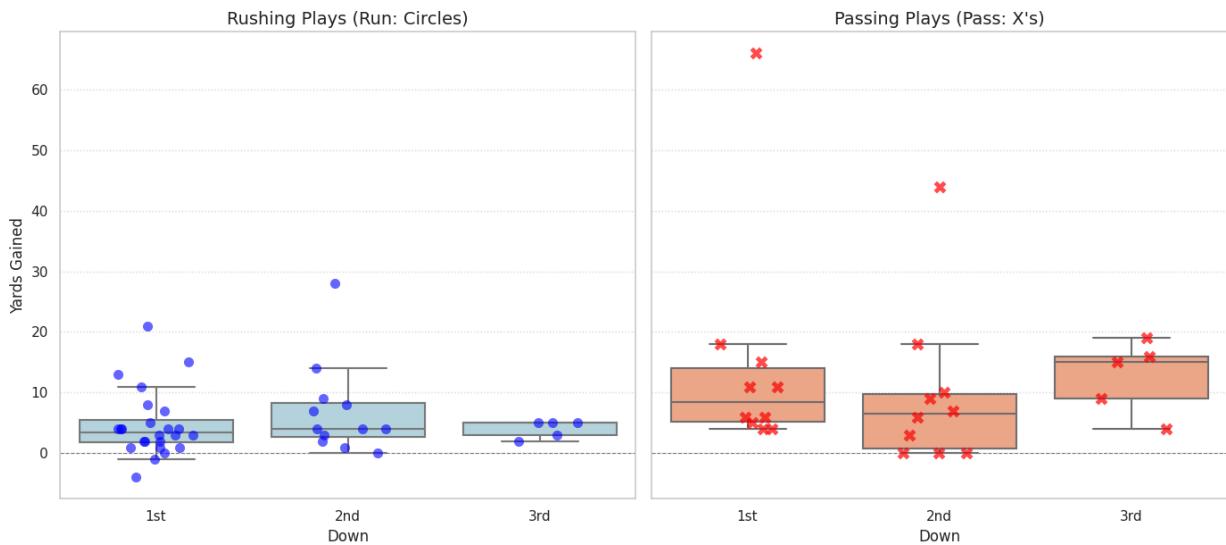
Iowa State Yards Gained vs Kansas: Run vs Pass by Down (Box & Scatter)



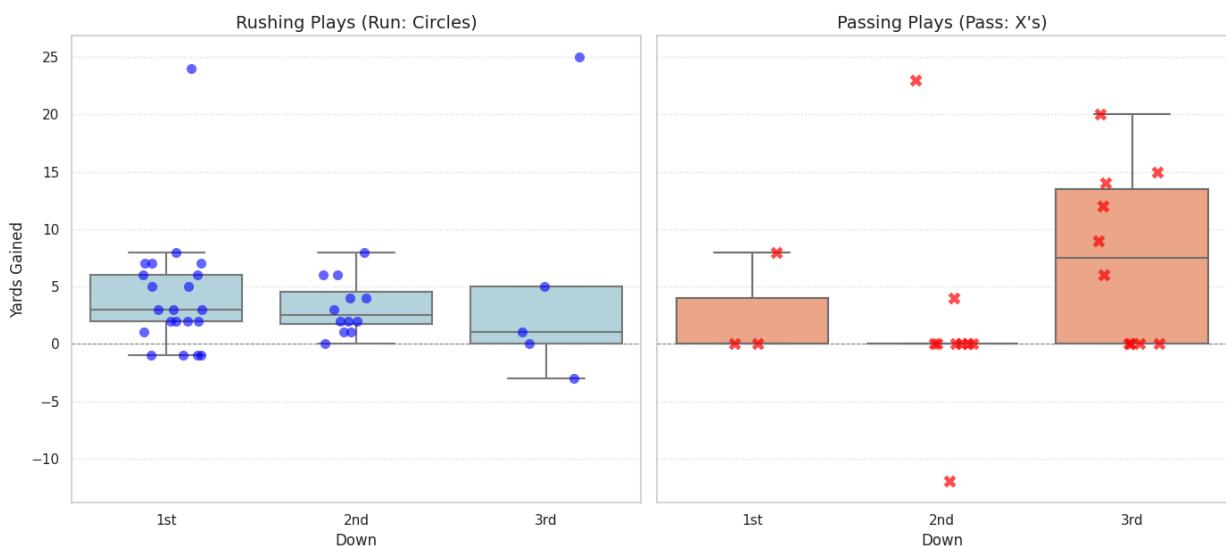
Iowa State Yards Gained vs Oklahoma State: Run vs Pass by Down (Box & Scatter)



Iowa State Yards Gained vs South Dakota: Run vs Pass by Down (Box & Scatter)



Iowa State Yards Gained vs TCU: Run vs Pass by Down (Box & Scatter)

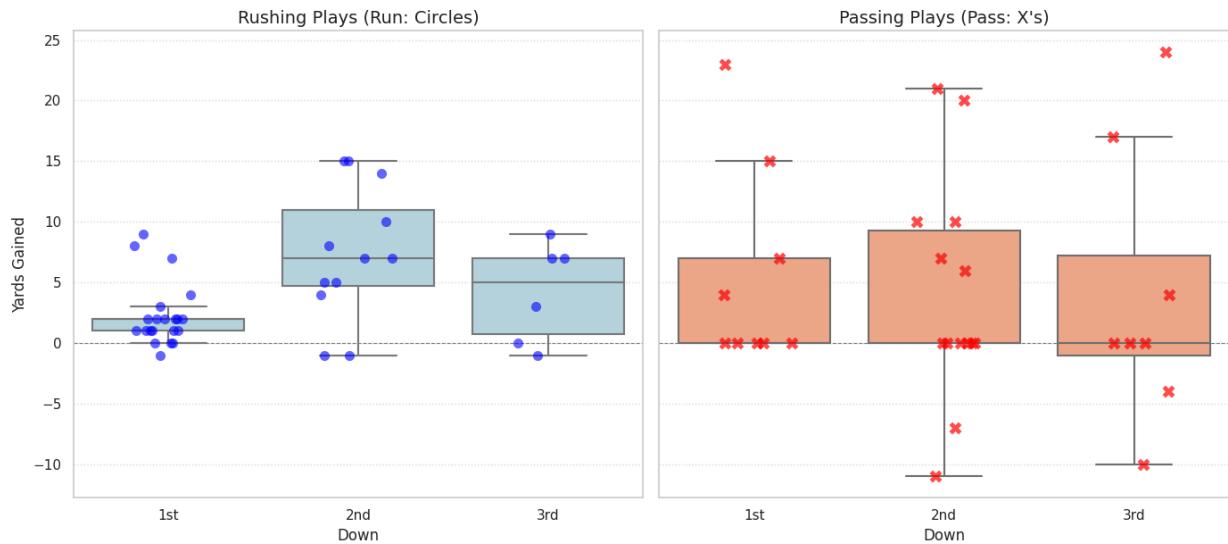


ScatterBoxPlot

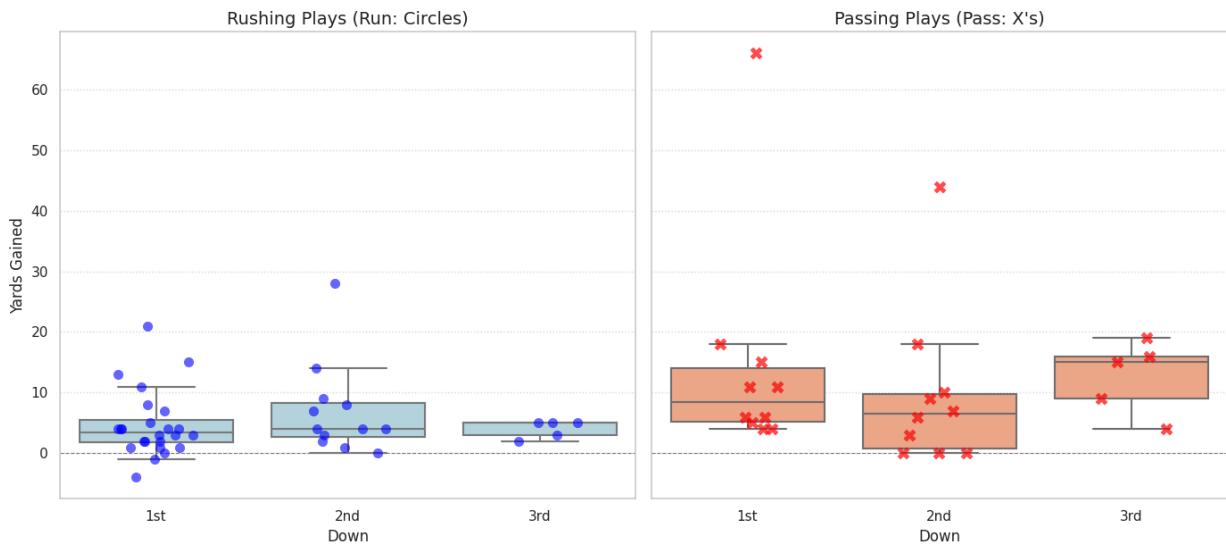
By: Malachi Taylor

The purpose of this box and scatter plot is to display run and pass plays with their distance gained separated by the down. Blue circles indicate rushing plays and red X's signal passing plays. I chose this graph because it gives a lot of information in one picture: The mean, the interquartile range, and the min/max values.

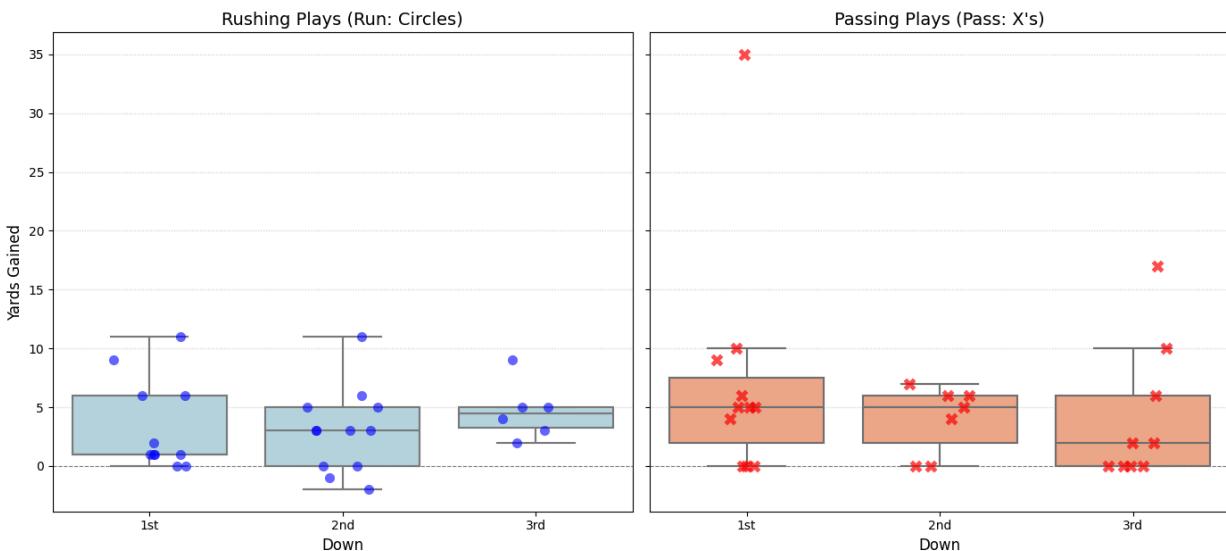
Iowa State Yards Gained vs Kansas State: Run vs Pass by Down (Box & Scatter)



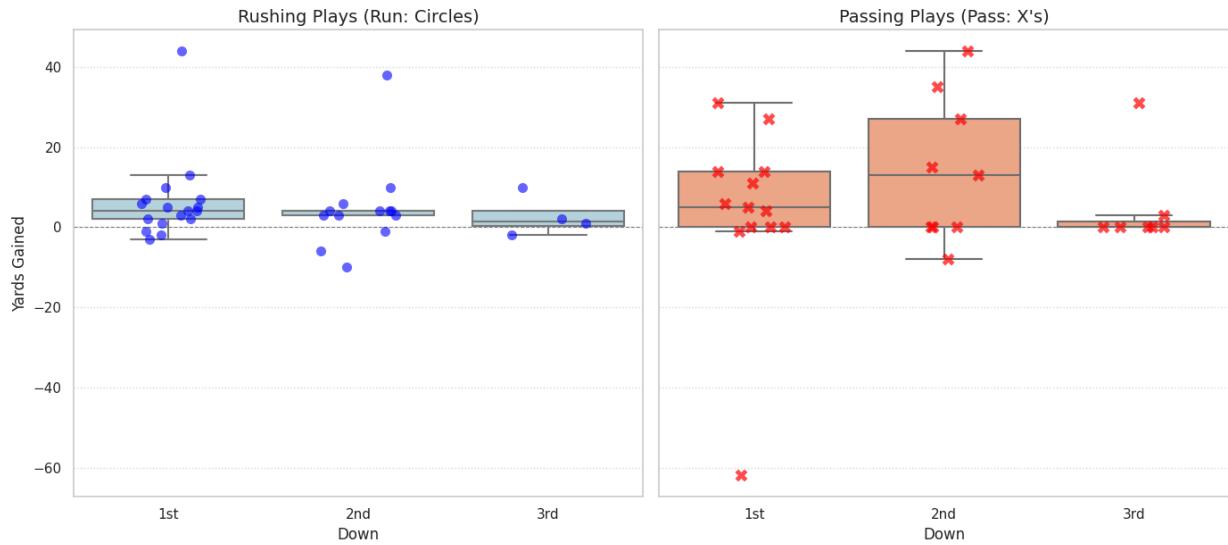
Iowa State Yards Gained vs South Dakota: Run vs Pass by Down (Box & Scatter)



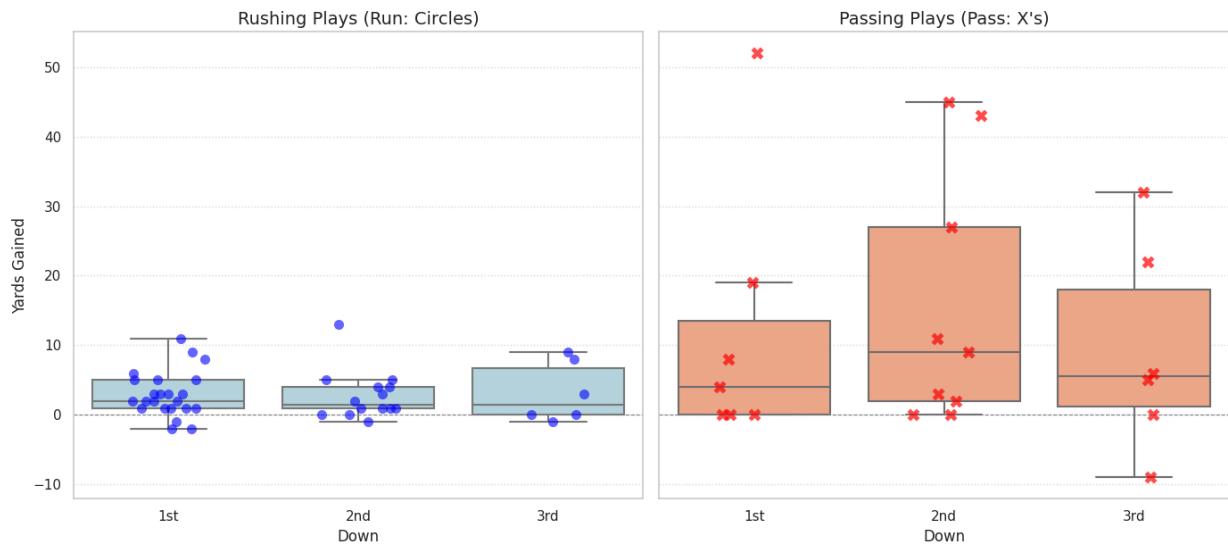
Iowa State Yards Gained vs Iowa: Run vs Pass by Down (Box & Scatter)



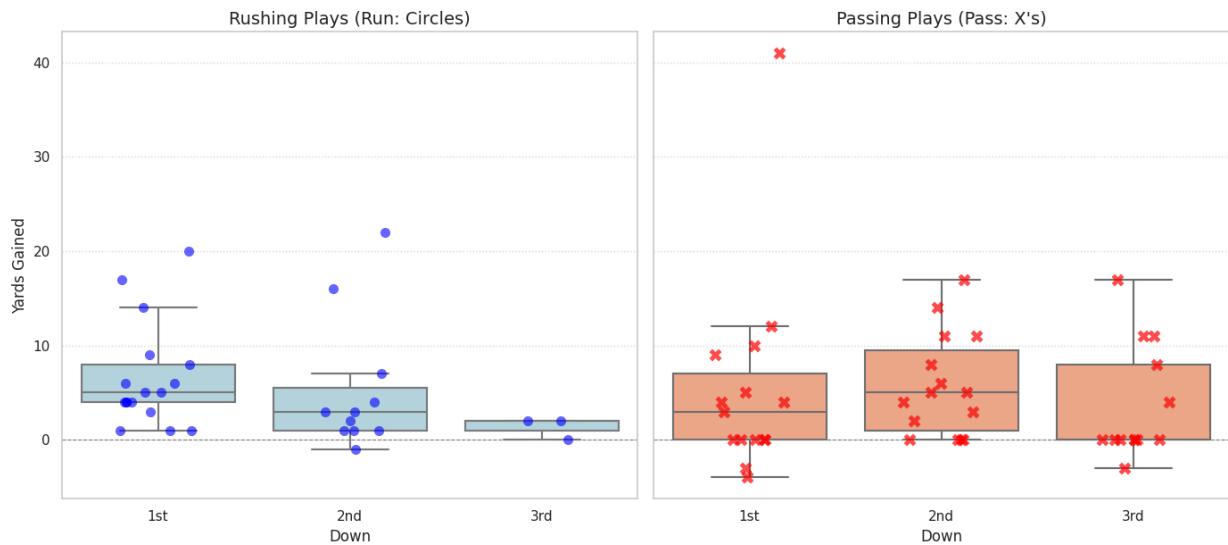
Iowa State Yards Gained vs Arkansas State: Run vs Pass by Down (Box & Scatter)



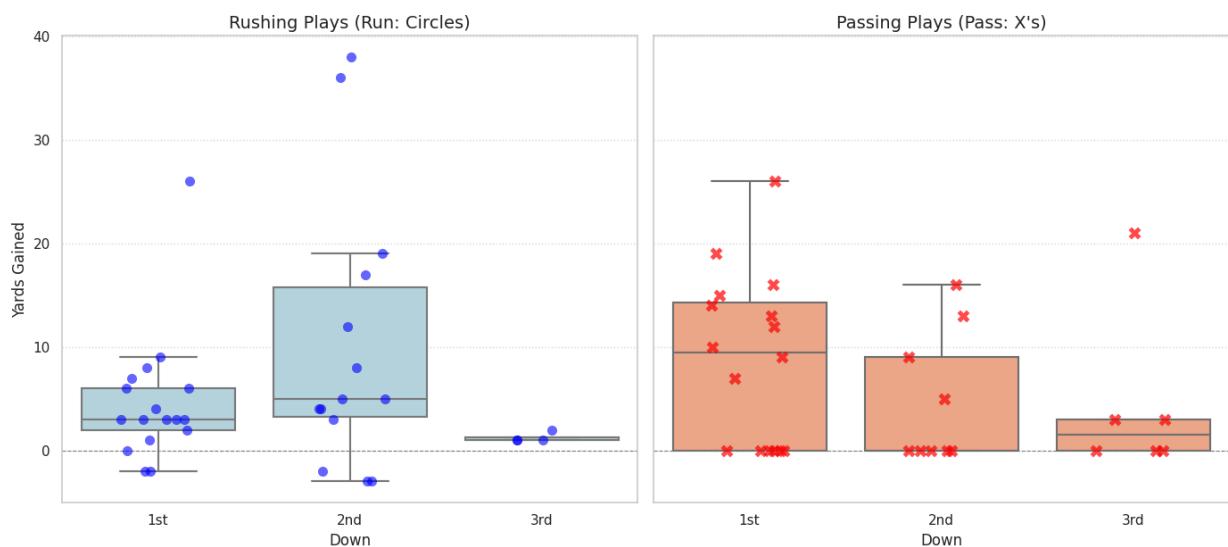
Iowa State Yards Gained vs Arizona: Run vs Pass by Down (Box & Scatter)



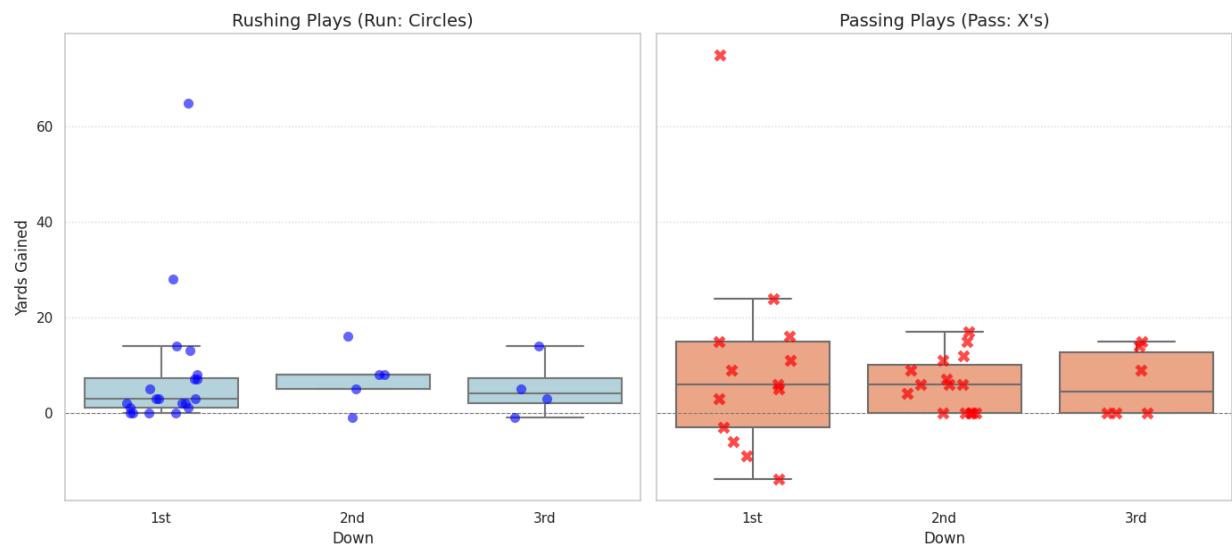
Iowa State Yards Gained vs Cincinnati: Run vs Pass by Down (Box & Scatter)



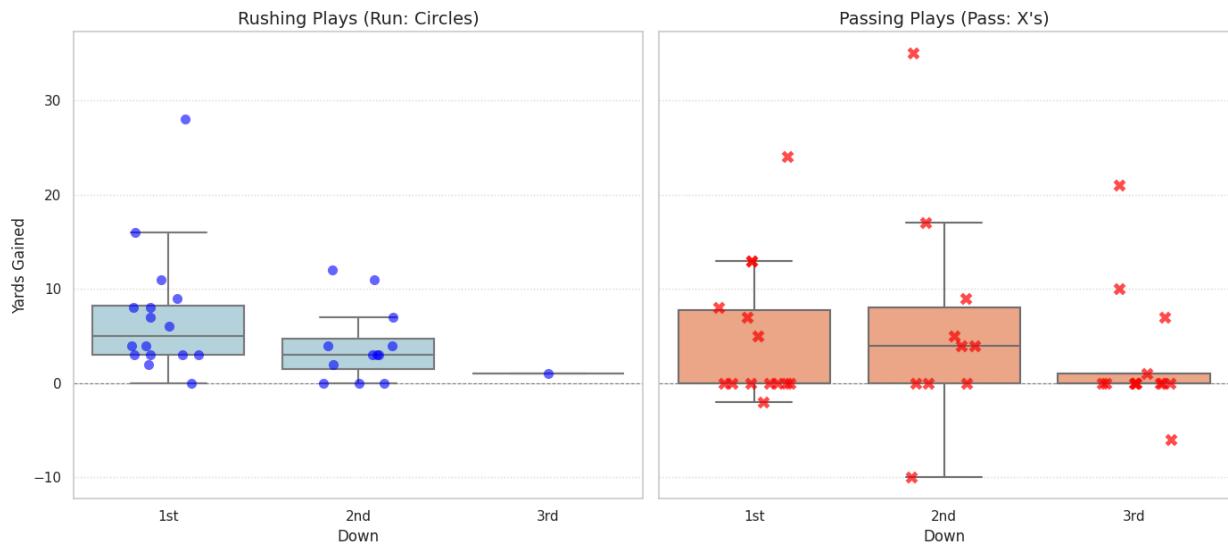
Iowa State Yards Gained vs Colorado: Run vs Pass by Down (Box & Scatter)



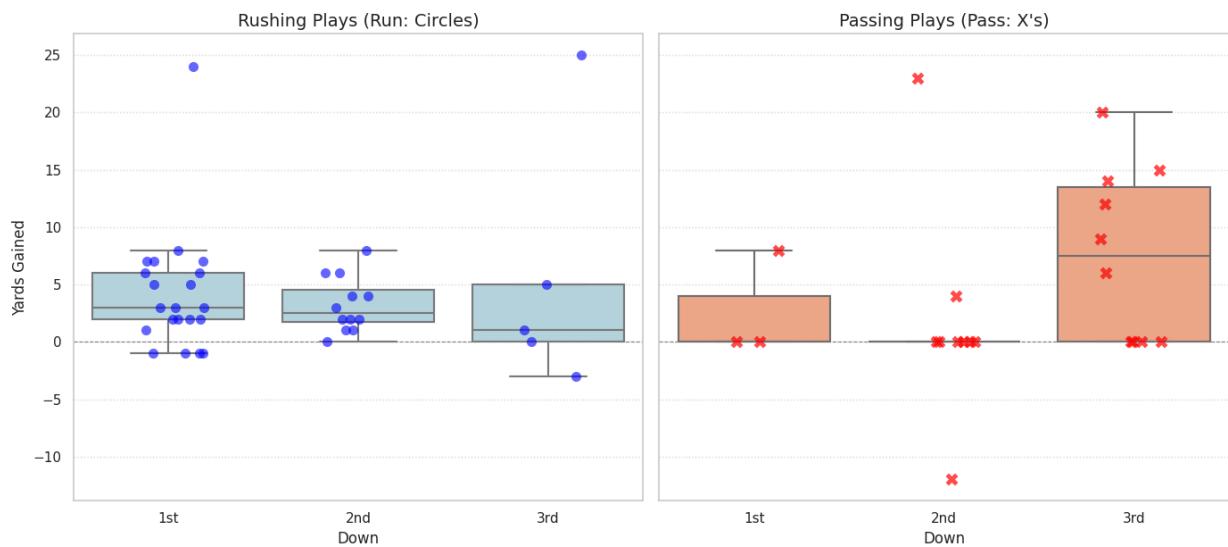
Iowa State Yards Gained vs BYU: Run vs Pass by Down (Box & Scatter)



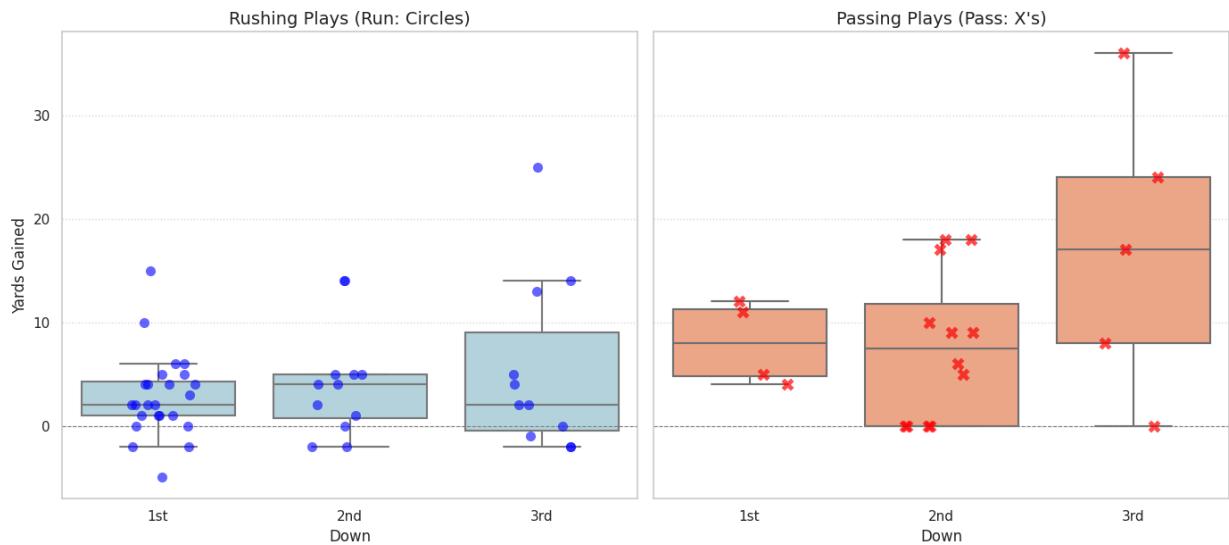
Iowa State Yards Gained vs Arizona State: Run vs Pass by Down (Box & Scatter)



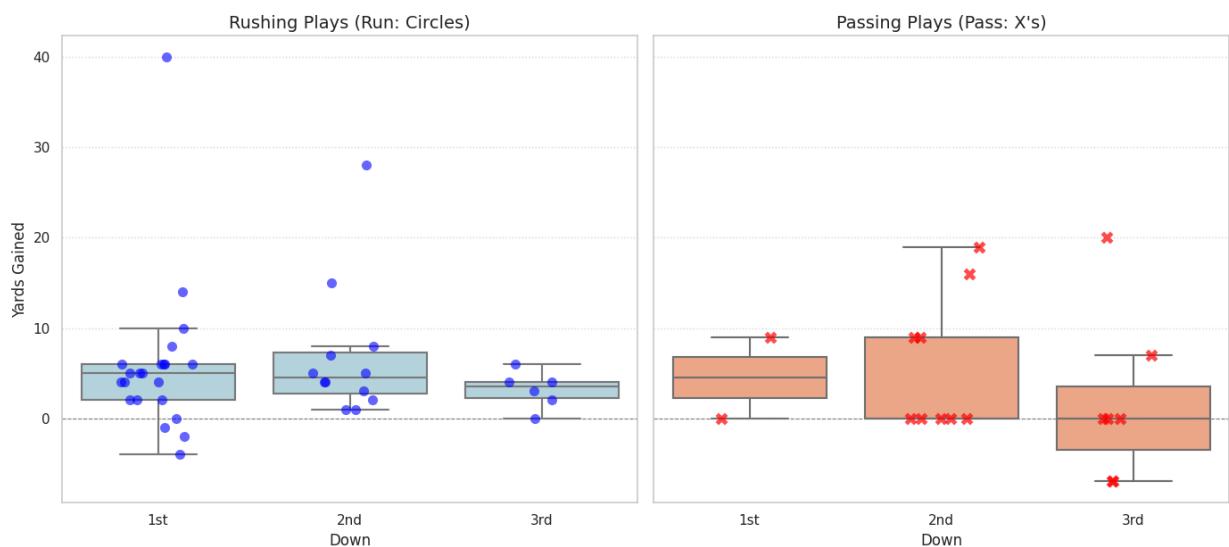
Iowa State Yards Gained vs TCU: Run vs Pass by Down (Box & Scatter)



Iowa State Yards Gained vs Kansas: Run vs Pass by Down (Box & Scatter)

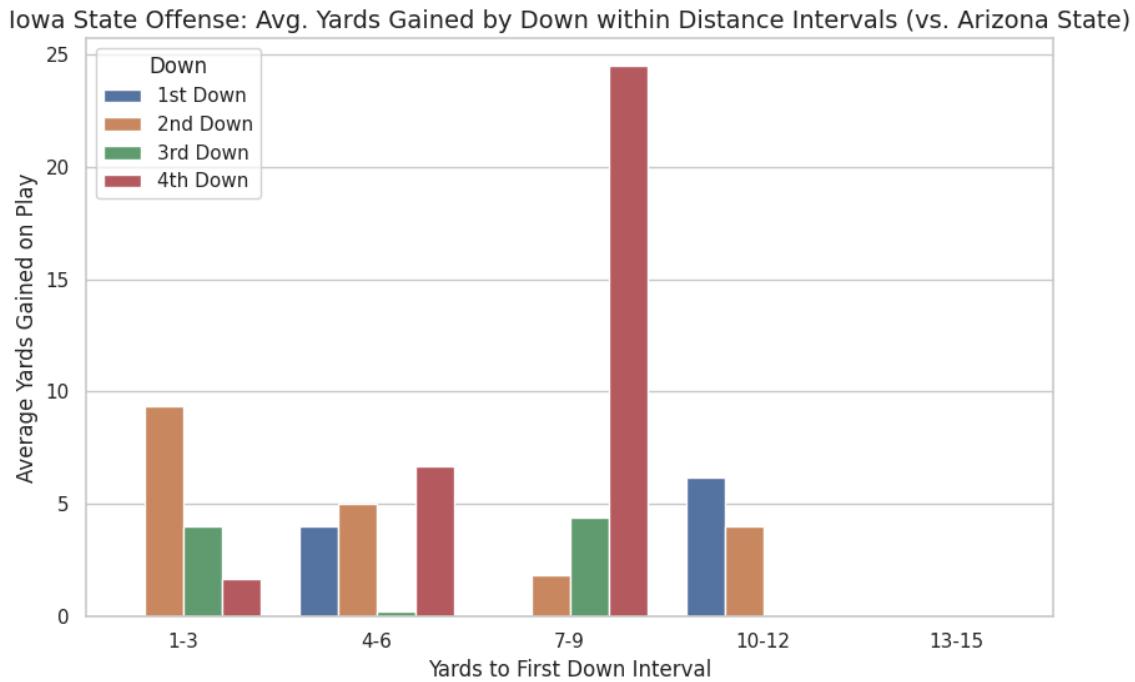


Iowa State Yards Gained vs Oklahoma State: Run vs Pass by Down (Box & Scatter)

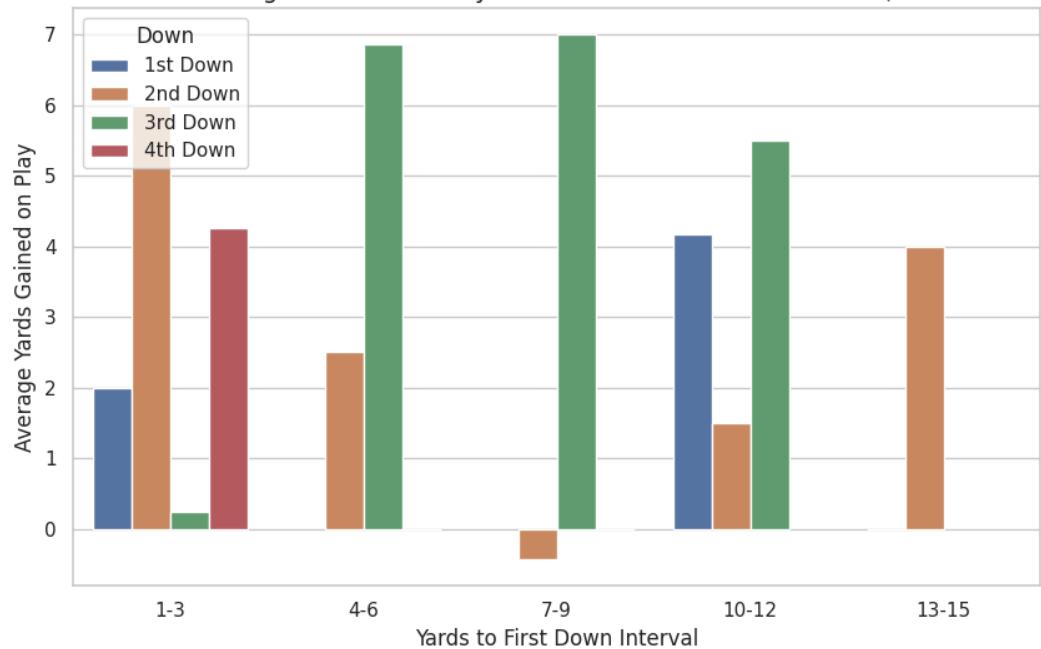


Bar Chart

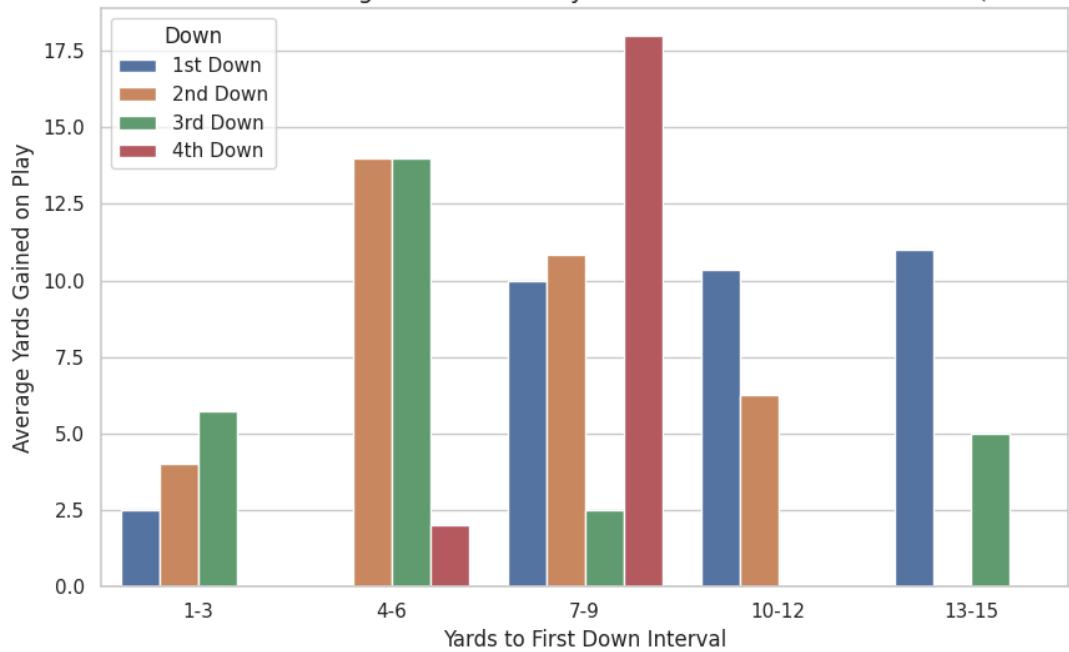
The goal of our project was to analyze and understand what plays work best for the Iowa State football team based on down and distance. My part of the project did not focus on plays and formations, but solely on down-and-distance. The graph I created measured the average yards gained per play at intervals of 3 yards to go, based on down. The down is labeled by color and shown in the legend, and the distance is shown in the x-axis labels. This graph is able to give a simple and easy-to-understand visual of which down and distance was most effective in yards gained, based on the game.



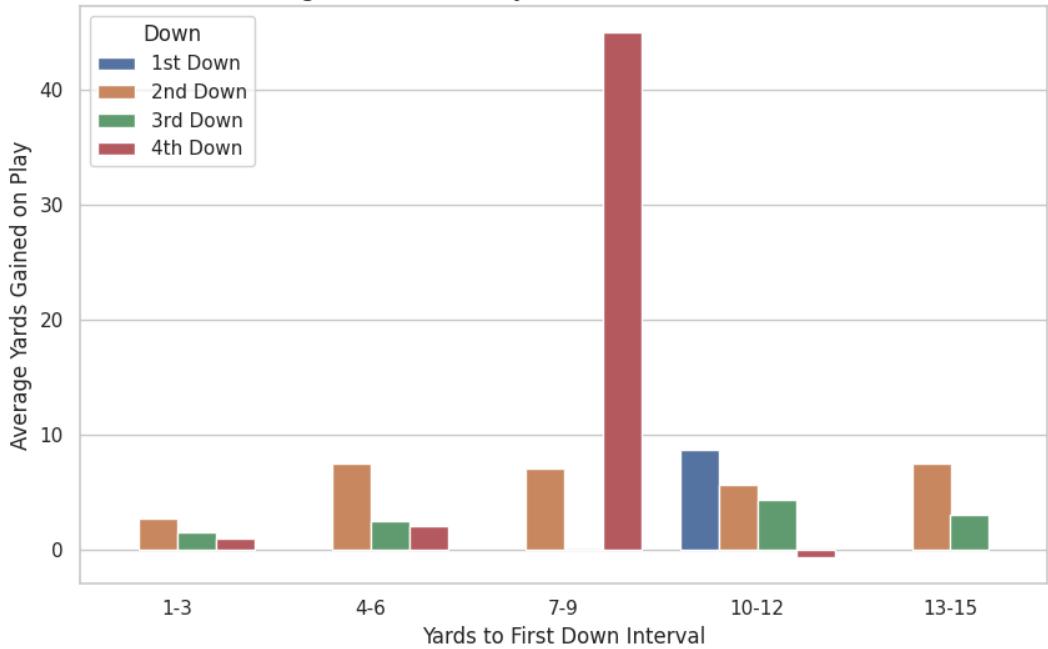
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Arkansas State)



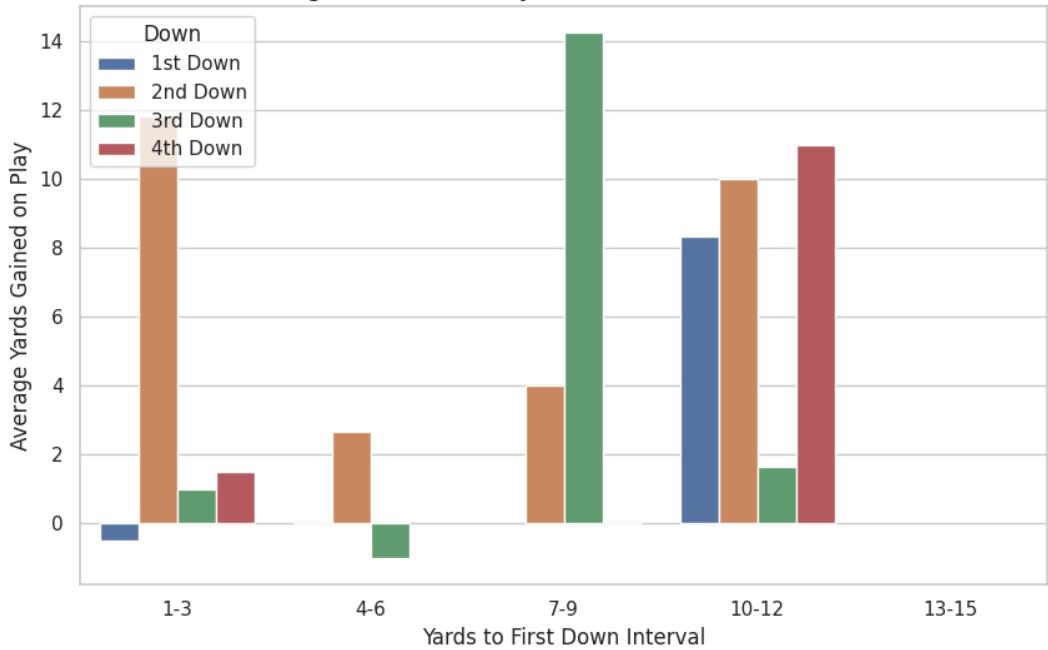
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. BYU)



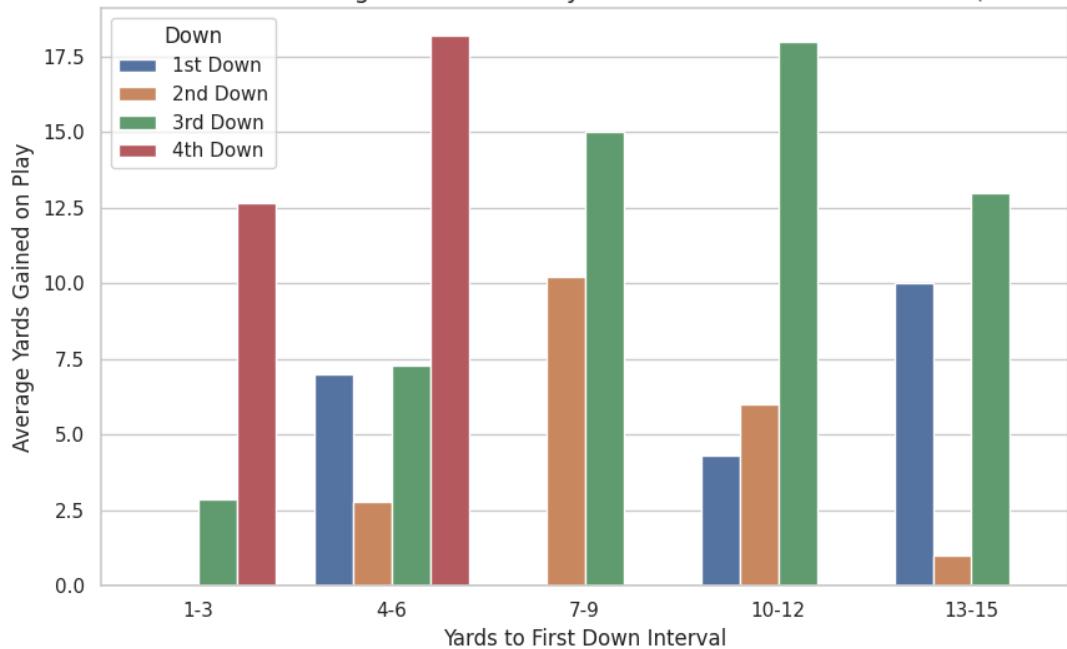
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Cincinnati)



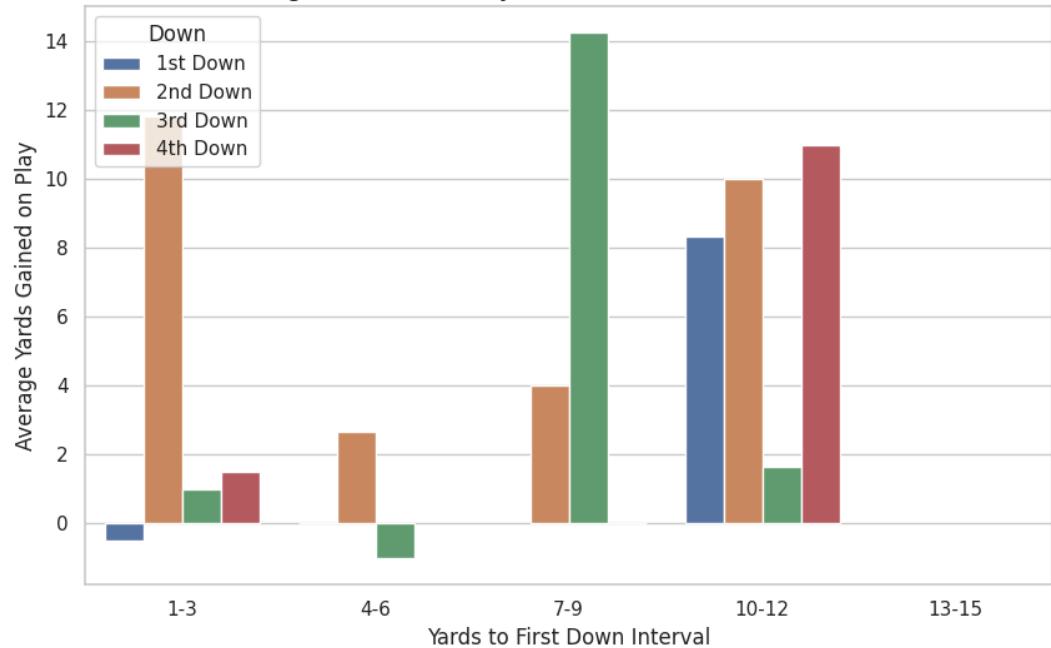
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Colorado)



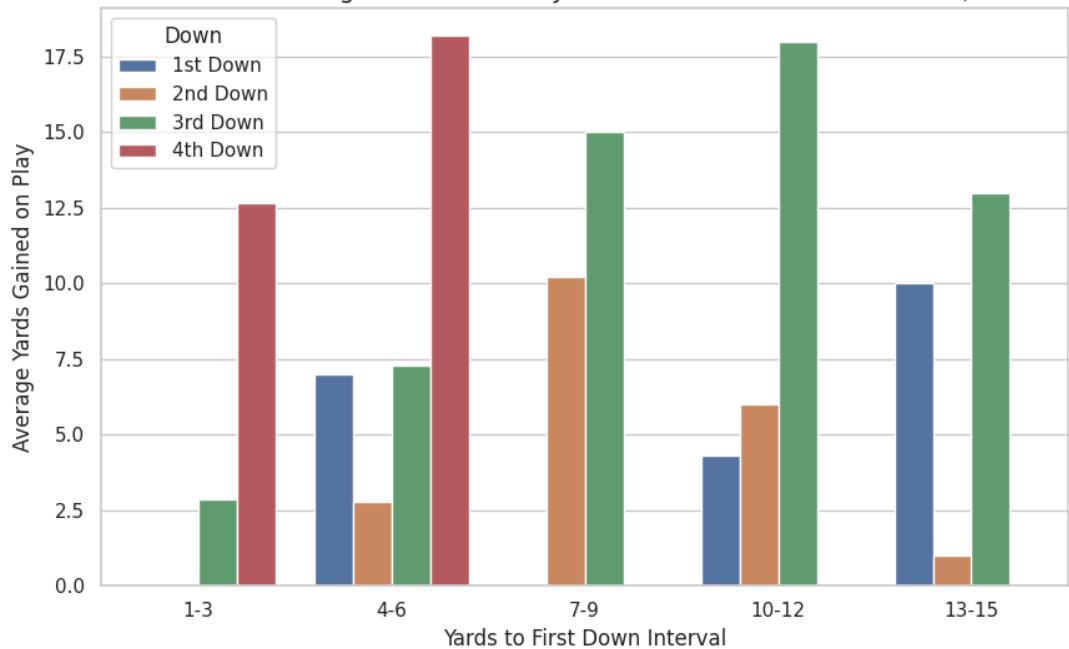
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Iowa)



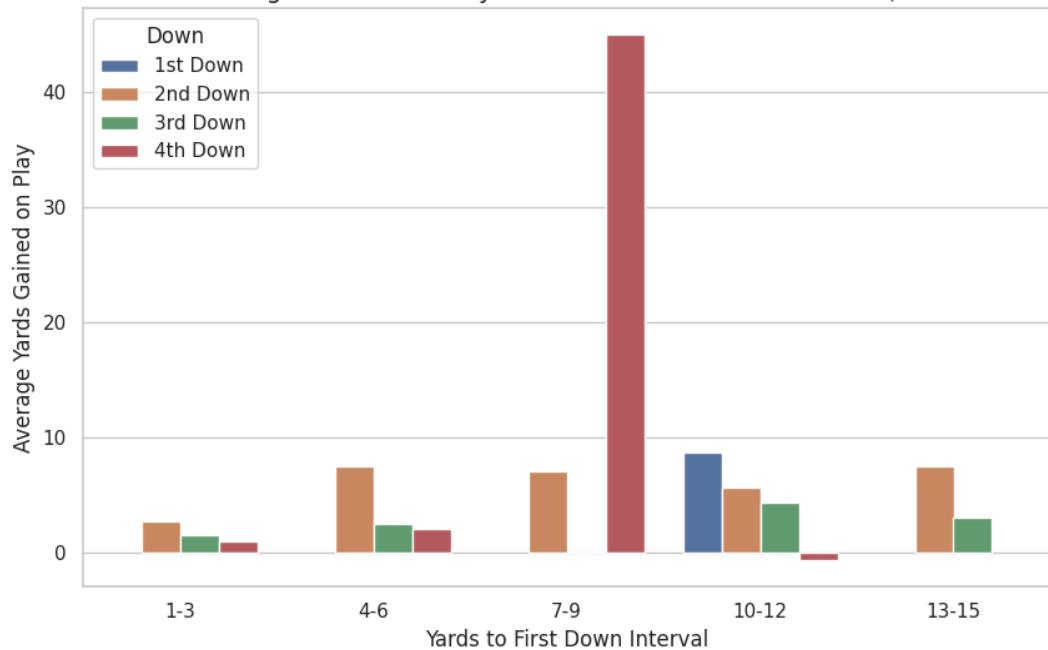
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Kansas State)



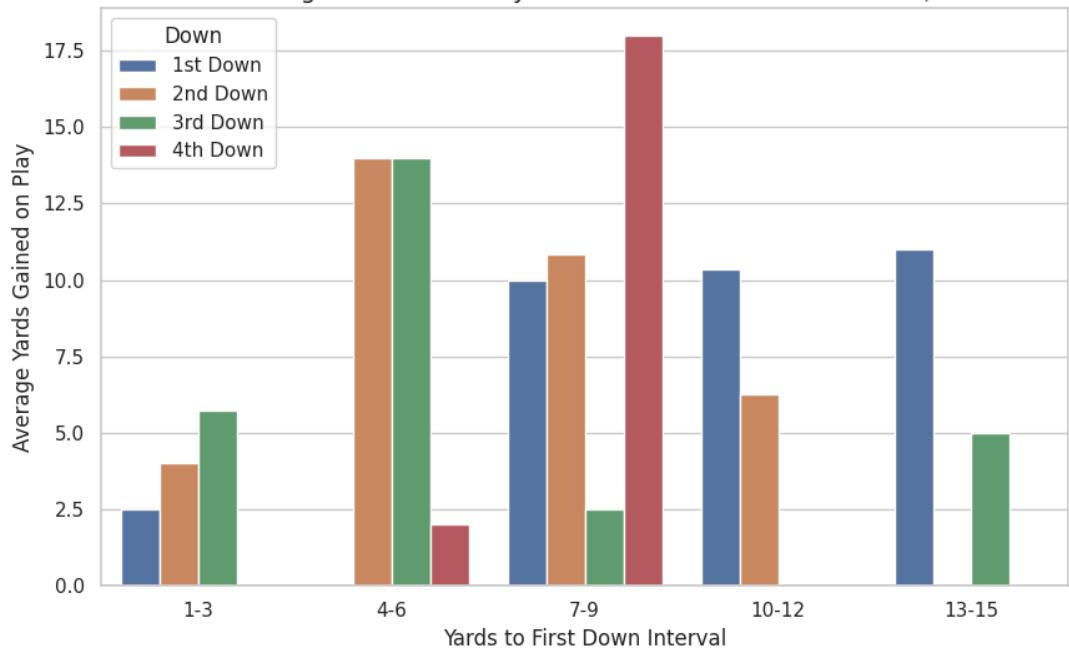
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Kansas)



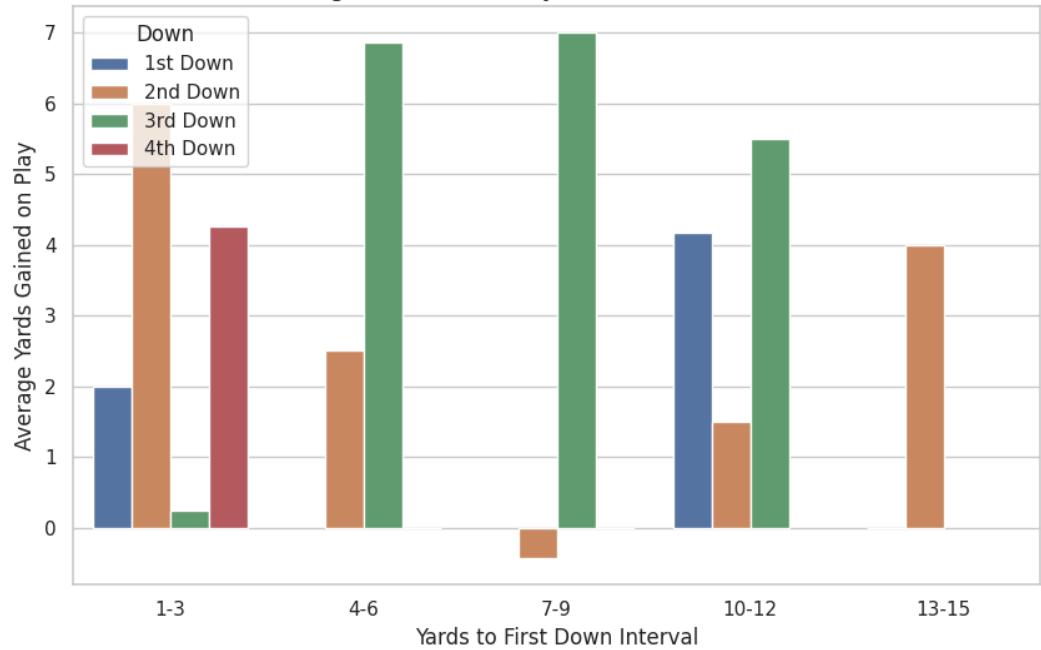
Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. Oklahoma State)



Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. South Dakota)



Iowa State Offense: Avg. Yards Gained by Down within Distance Intervals (vs. TCU)

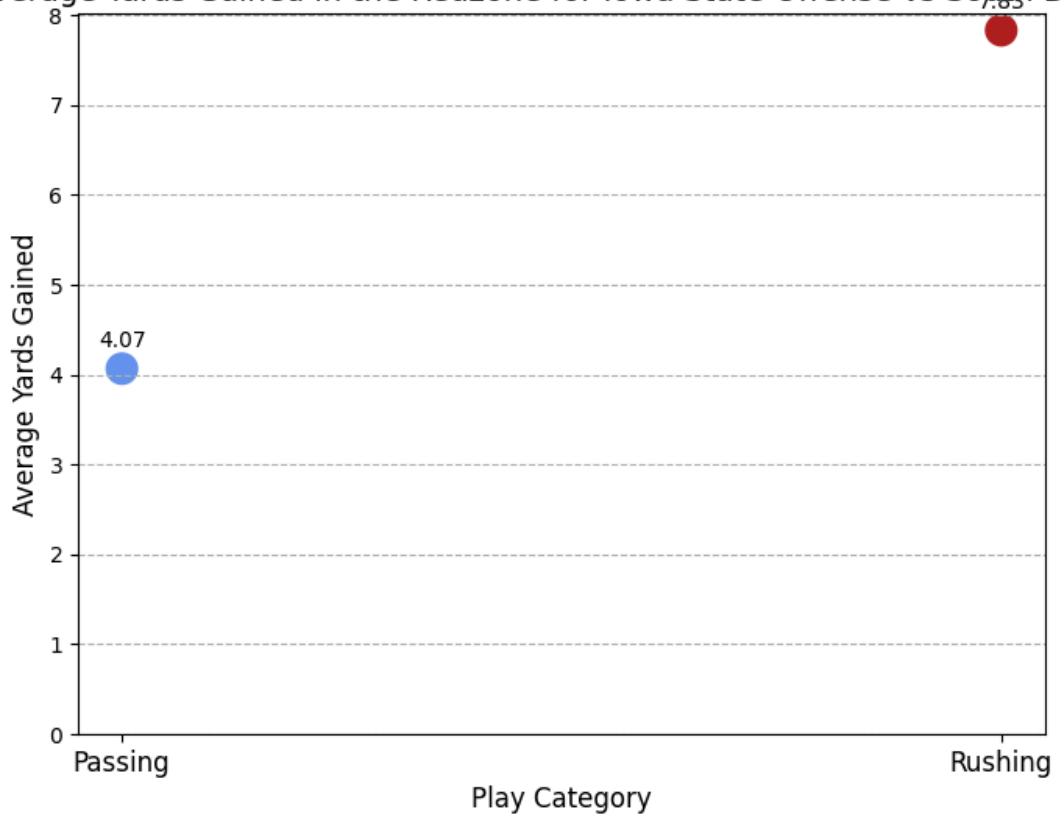


Average Yards Gained in the Redzone

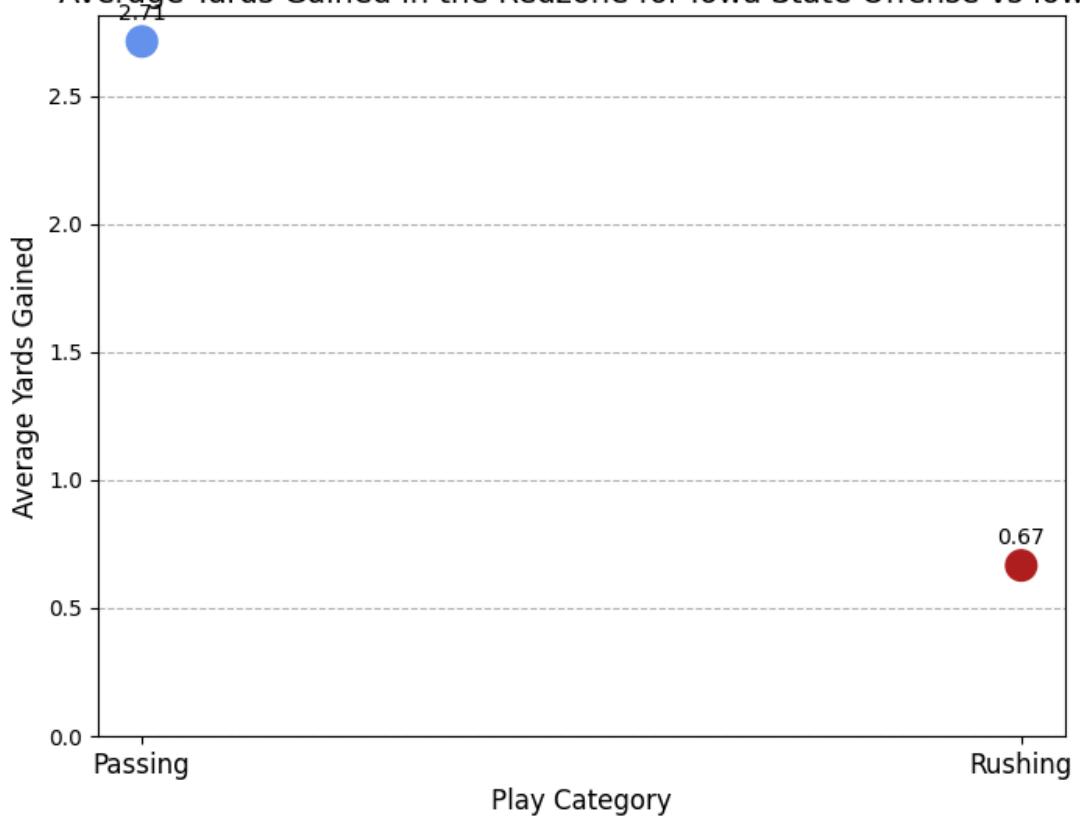
This study examines the Iowa State football team's success with run or pass plays inside the red zone. Drawing from Iowa State's stats from all their games in the 2025 season, I put together these graphs showing the averages for each play type Iowa State ran in the red zone. The Red dot represents the average yards gained by a run in the red zone, while the blue dot represents the average yards gained by a pass in the red zone. This study was made to help determine Iowa State's recipe for success in the red zone against different opponents.

Jacob Gunderson

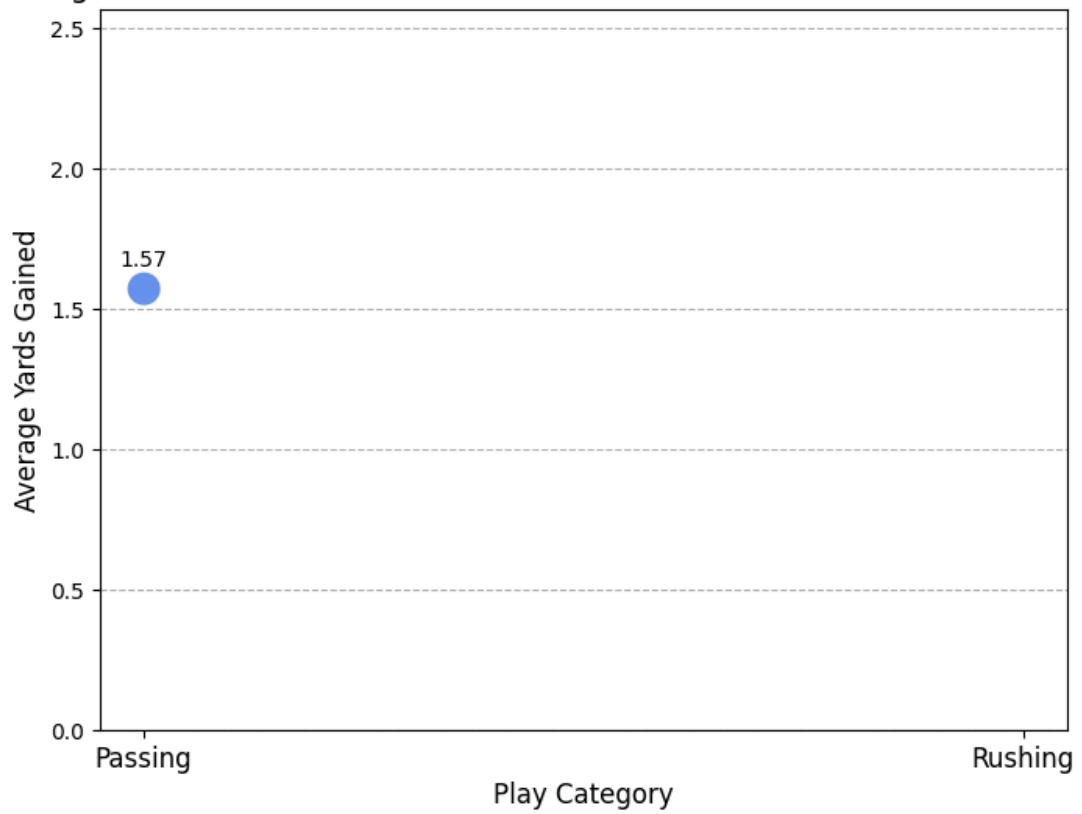
Average Yards Gained in the Redzone for Iowa State Offense vs South Dakota



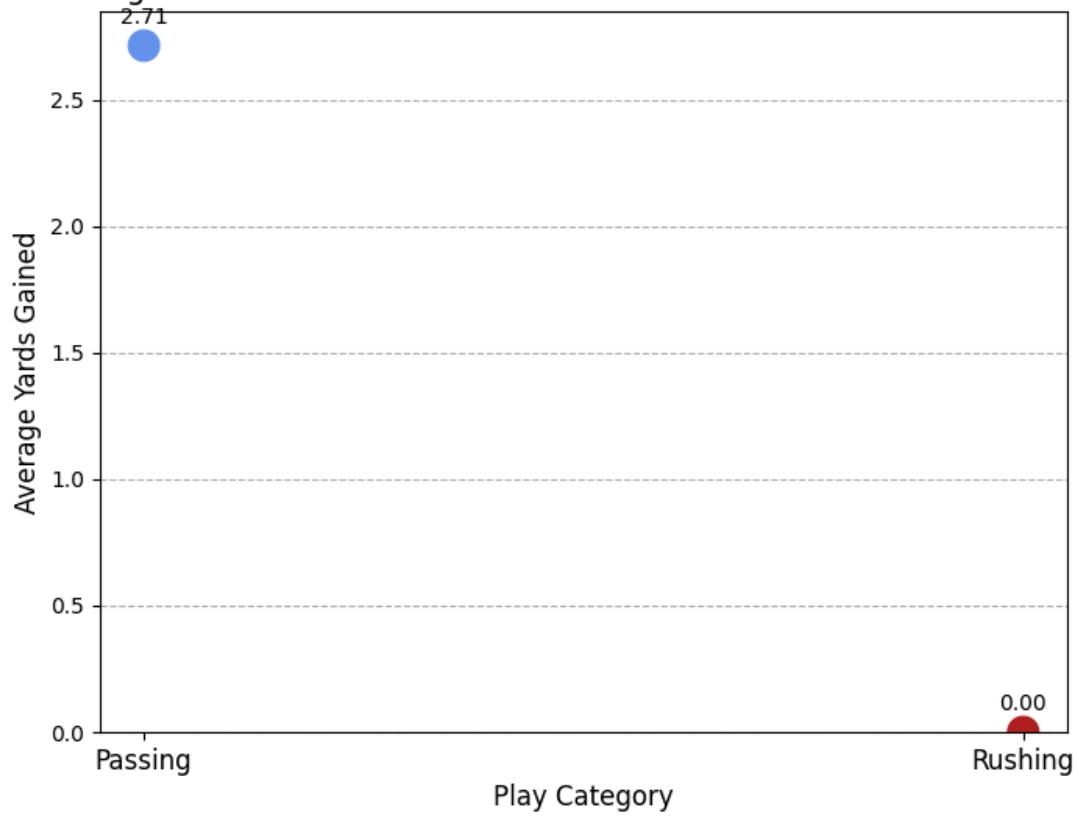
Average Yards Gained in the Redzone for Iowa State Offense vs Iowa



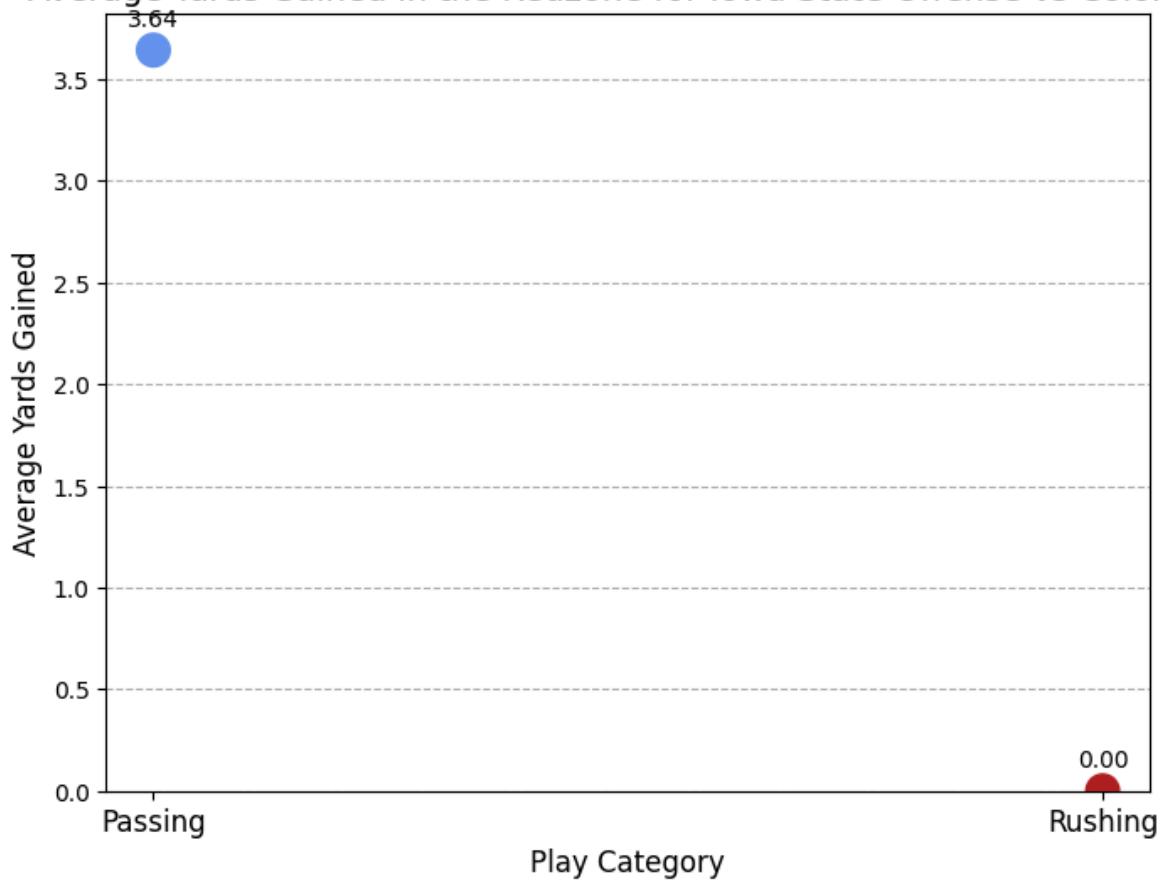
Average Yards Gained in the Redzone for Iowa State Offense vs Arkansas State



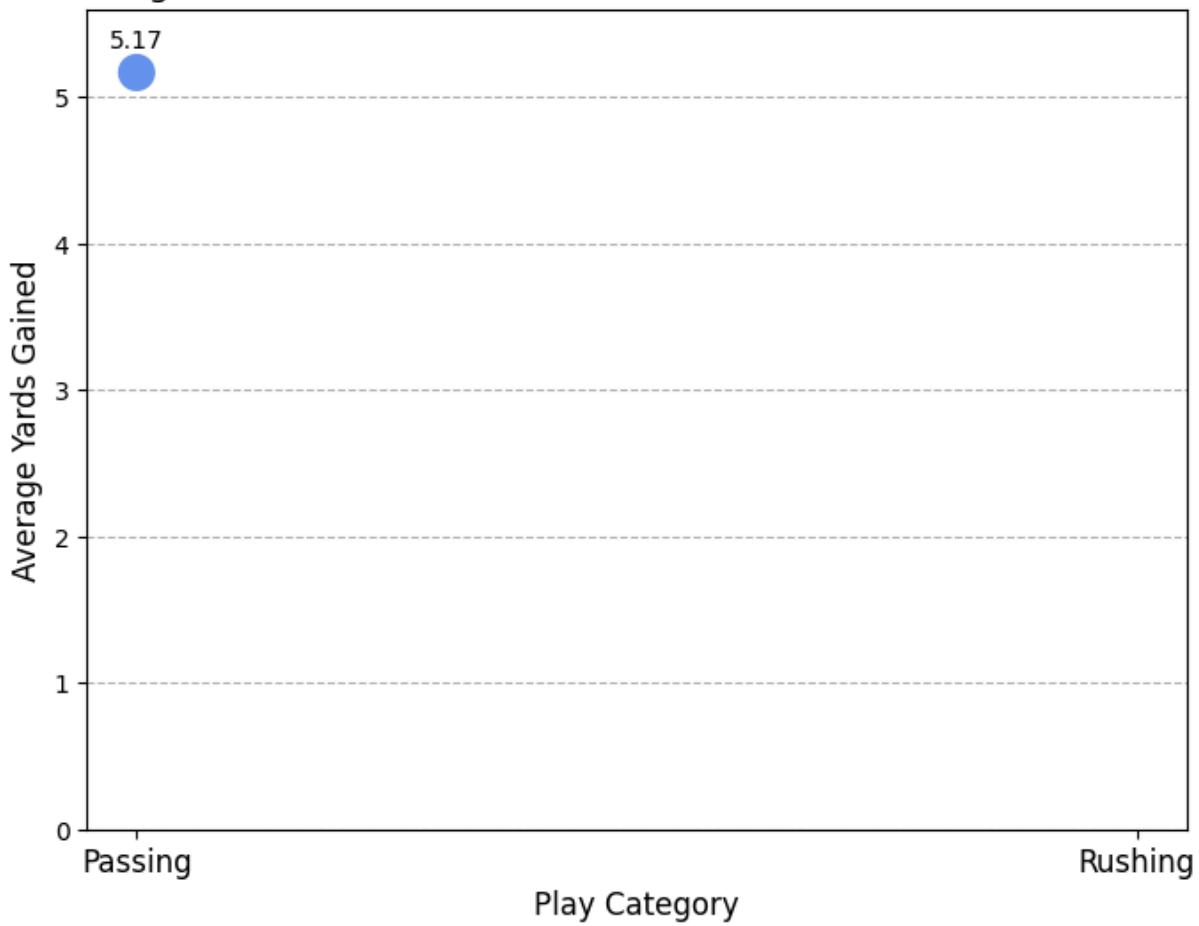
Average Yards Gained in the Redzone for Iowa State Offense vs Arizona



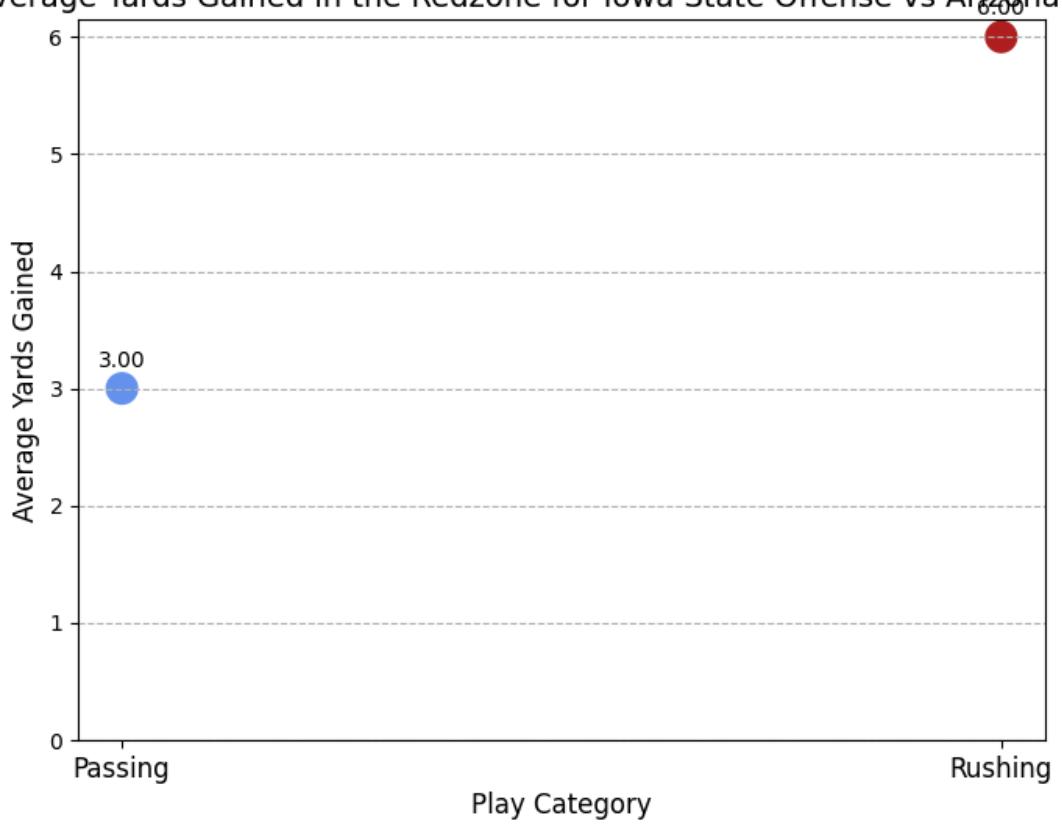
Average Yards Gained in the Redzone for Iowa State Offense vs Colorado



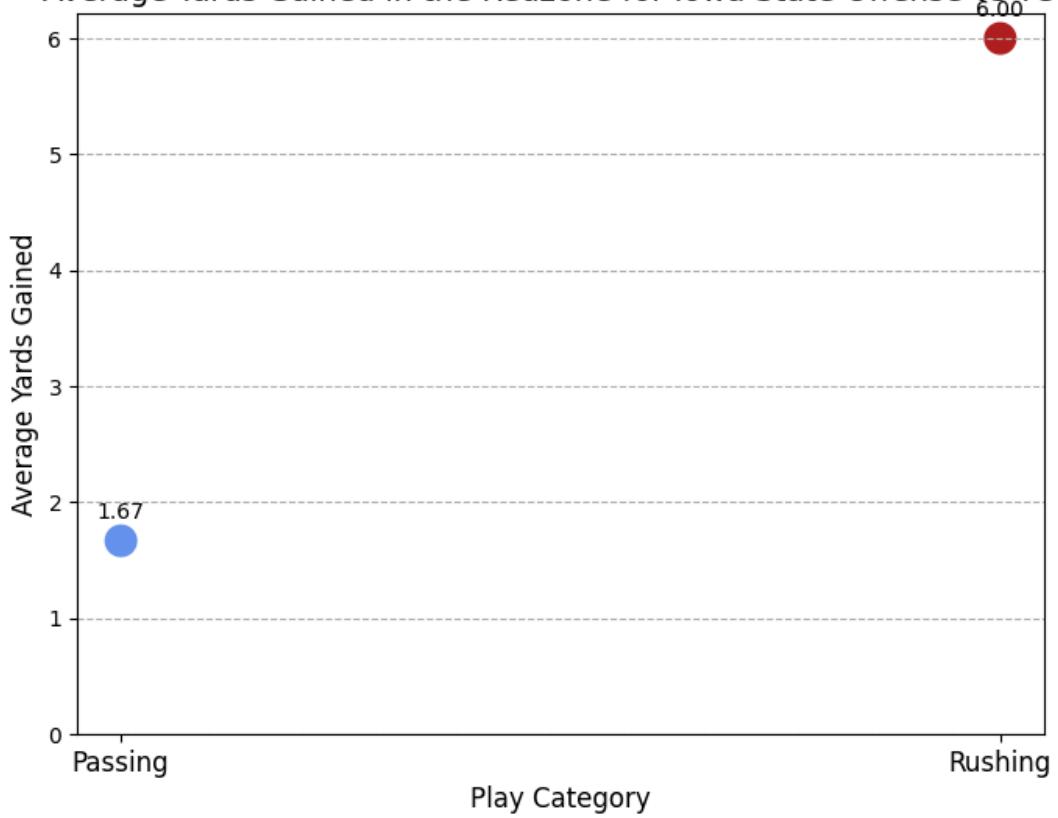
Average Yards Gained in the Redzone for Iowa State Offense vs BYU



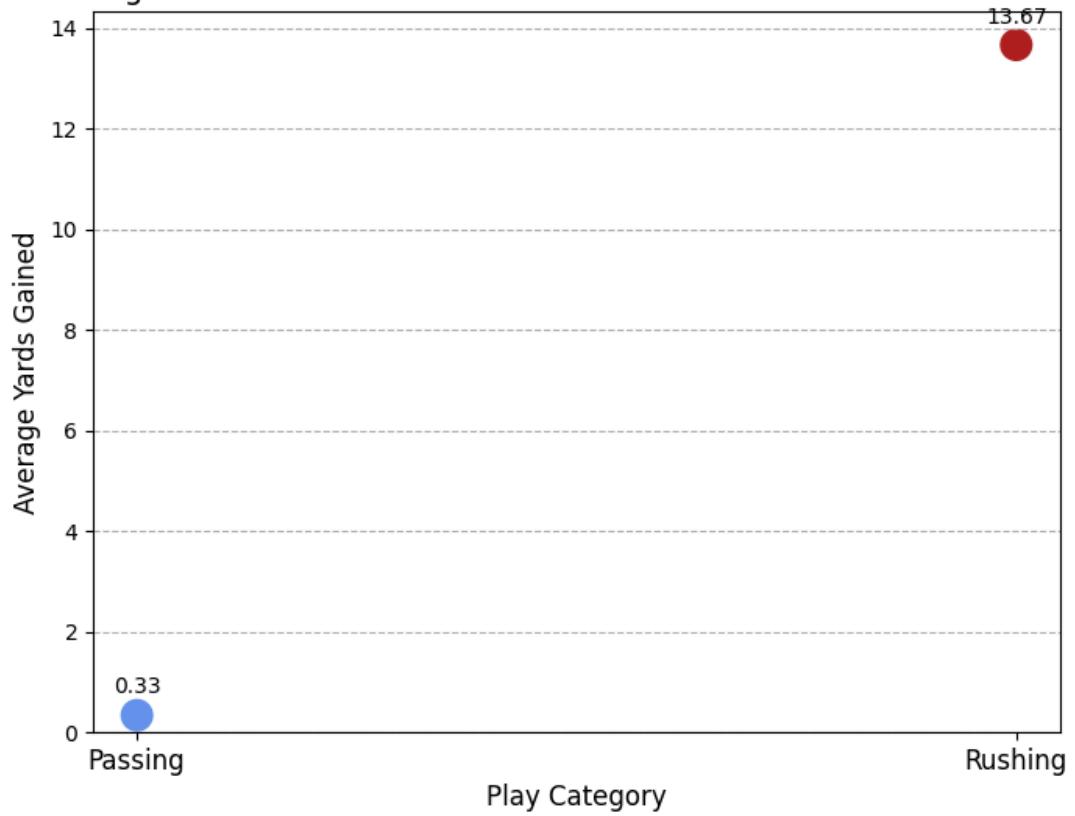
Average Yards Gained in the Redzone for Iowa State Offense vs Arizona State



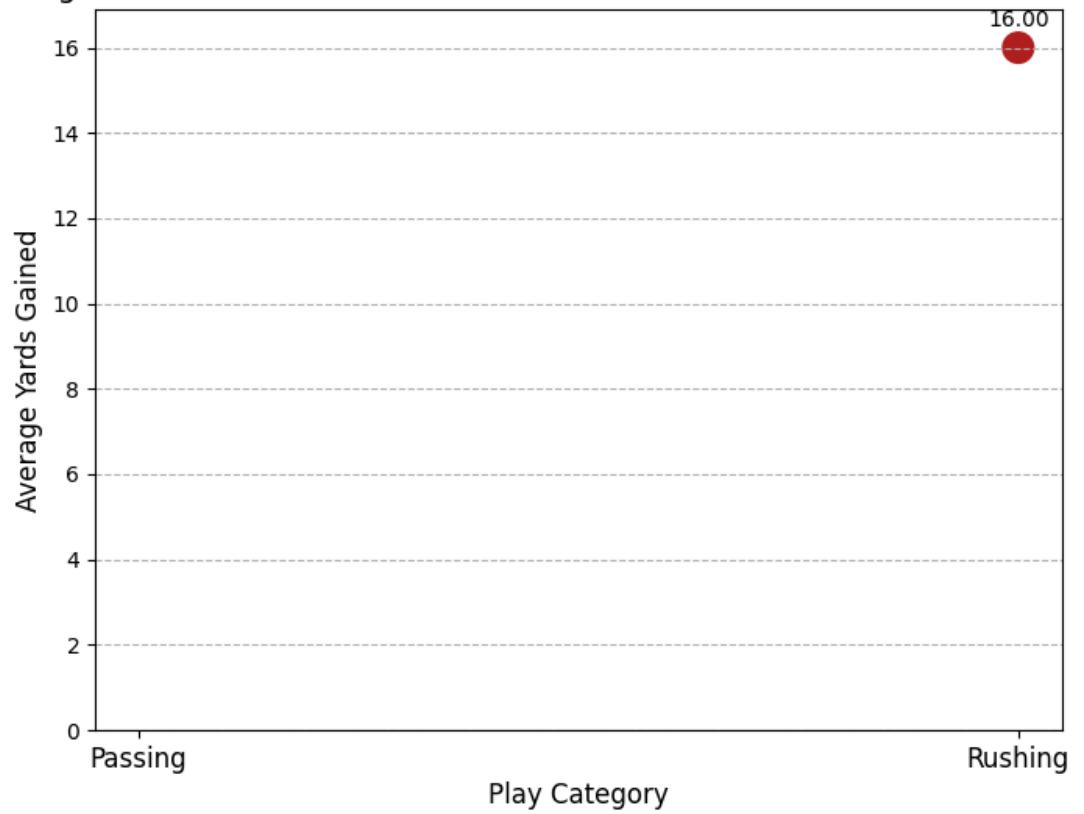
Average Yards Gained in the Redzone for Iowa State Offense vs TCU



Average Yards Gained in the Redzone for Iowa State Offense vs Kansas



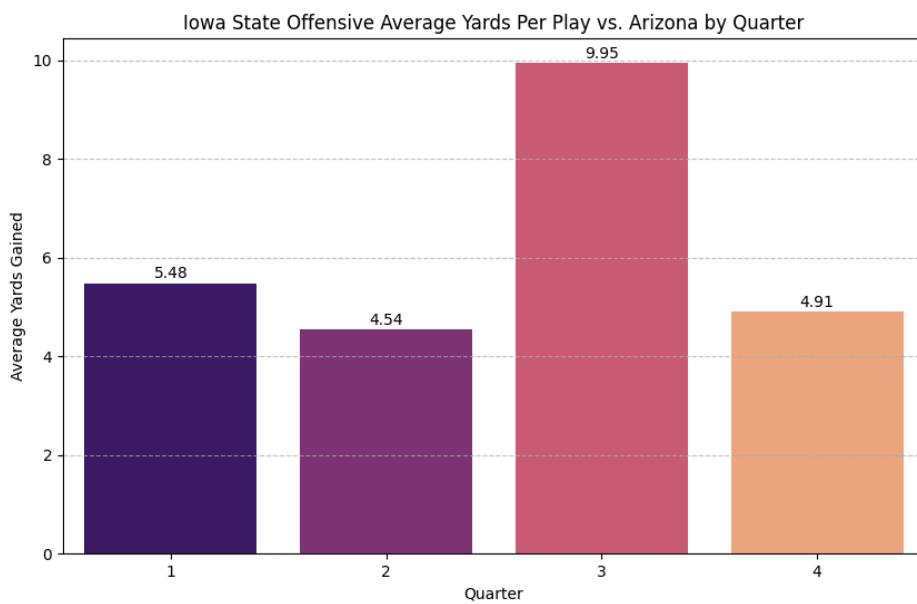
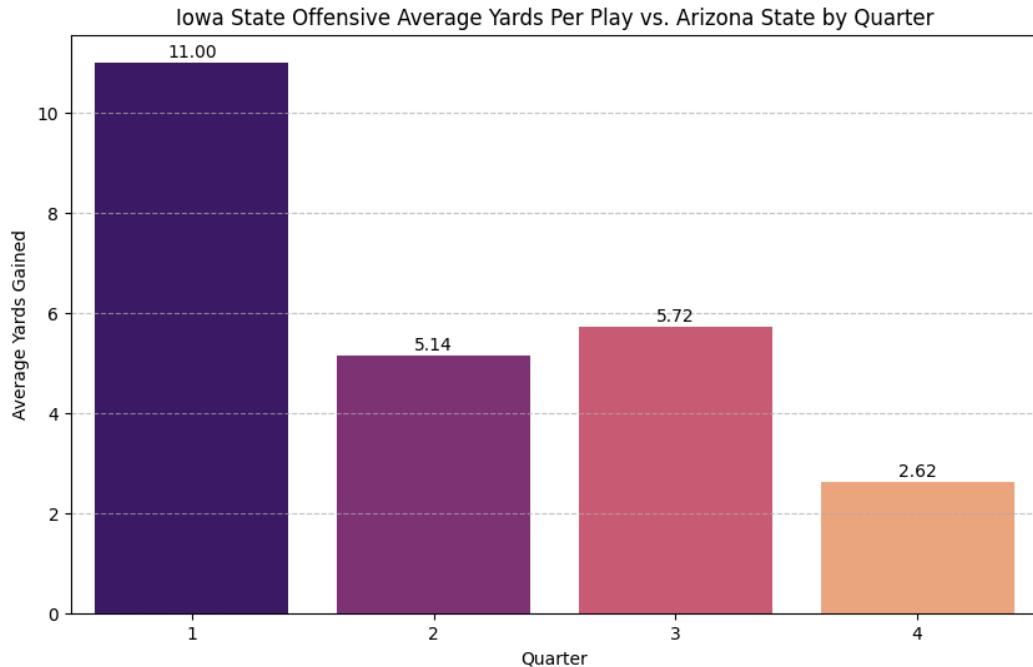
Average Yards Gained in the Redzone for Iowa State Offense vs Oklahoma State



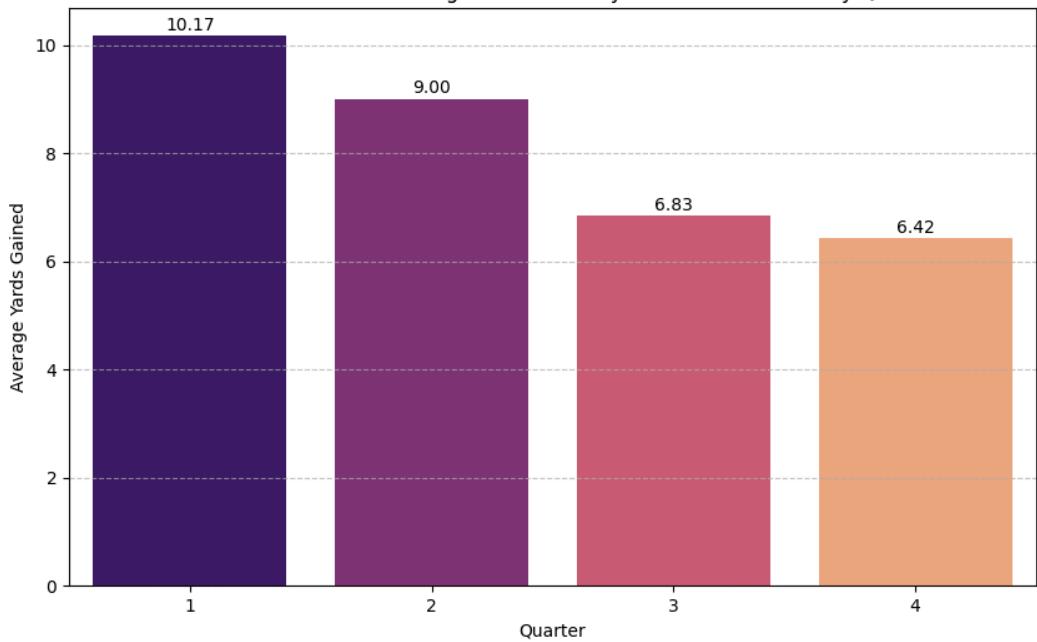
Average Yards Per Play by Quarter

Luke Randolph

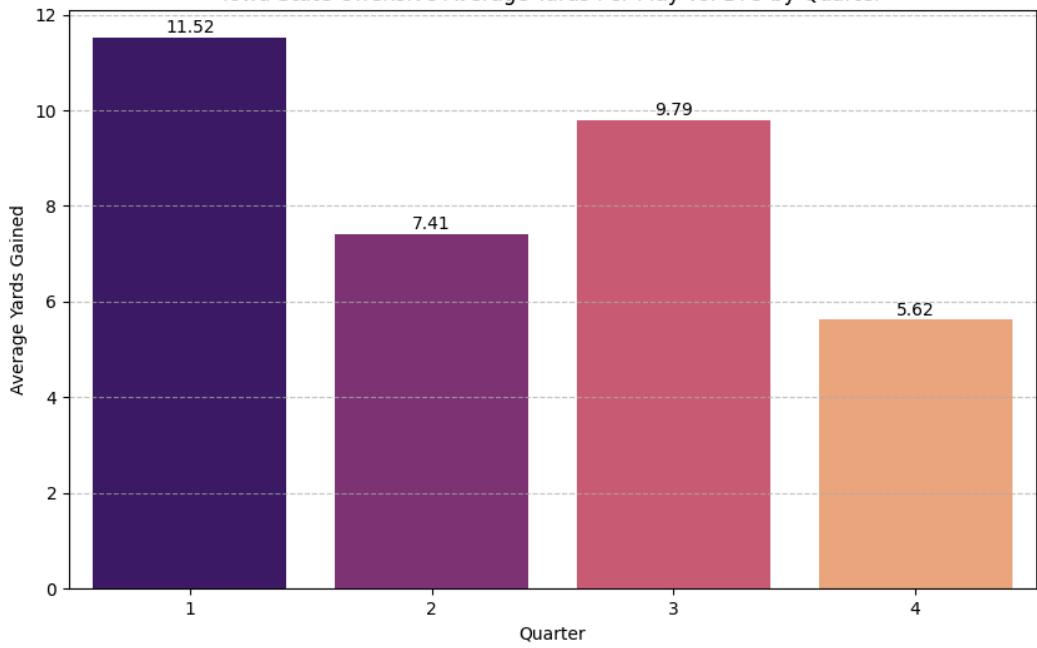
Our intention with these graphs was to determine the Iowa State Cyclones Football Team's average yards per play (AY/P) in each quarter of each game of the 2025 College Football Season. The bar graphs help us make easy observations of the data. One observation we can make from this data is in six of the twelve games, Iowa State produced the most AY/P in the first quarter. On the other hand, they averaged the lowest yards per play in the fourth quarter seven times.



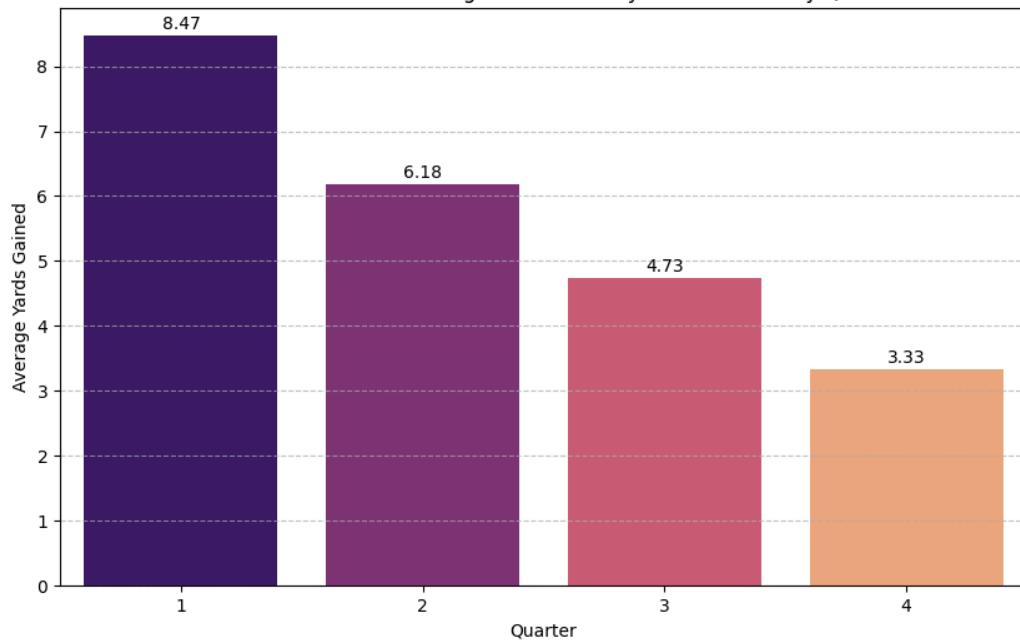
Iowa State Offensive Average Yards Per Play vs. Arkansas State by Quarter



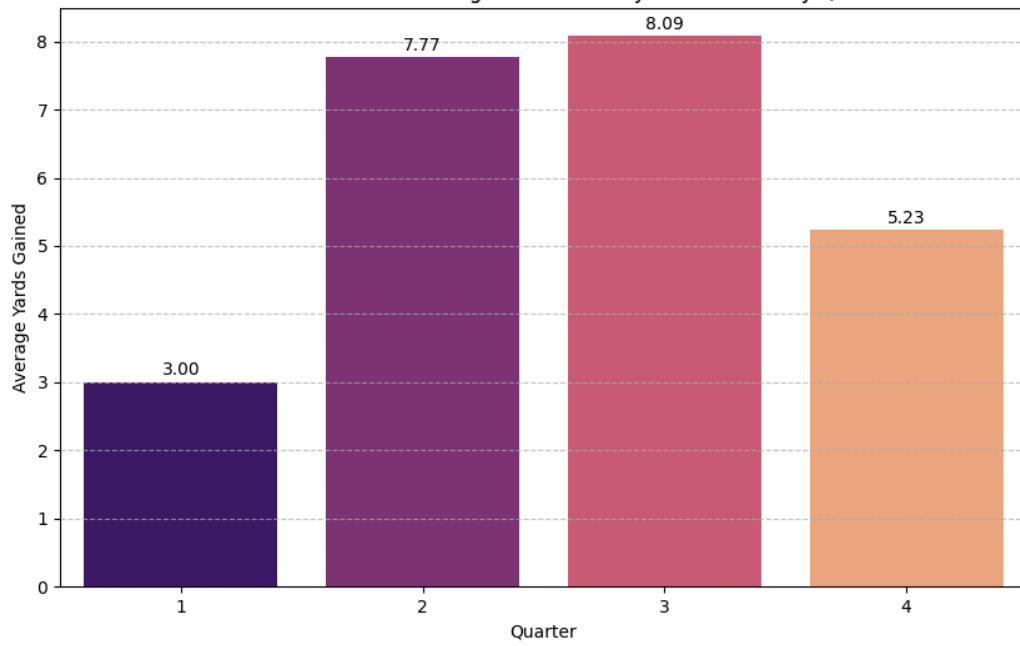
Iowa State Offensive Average Yards Per Play vs. BYU by Quarter

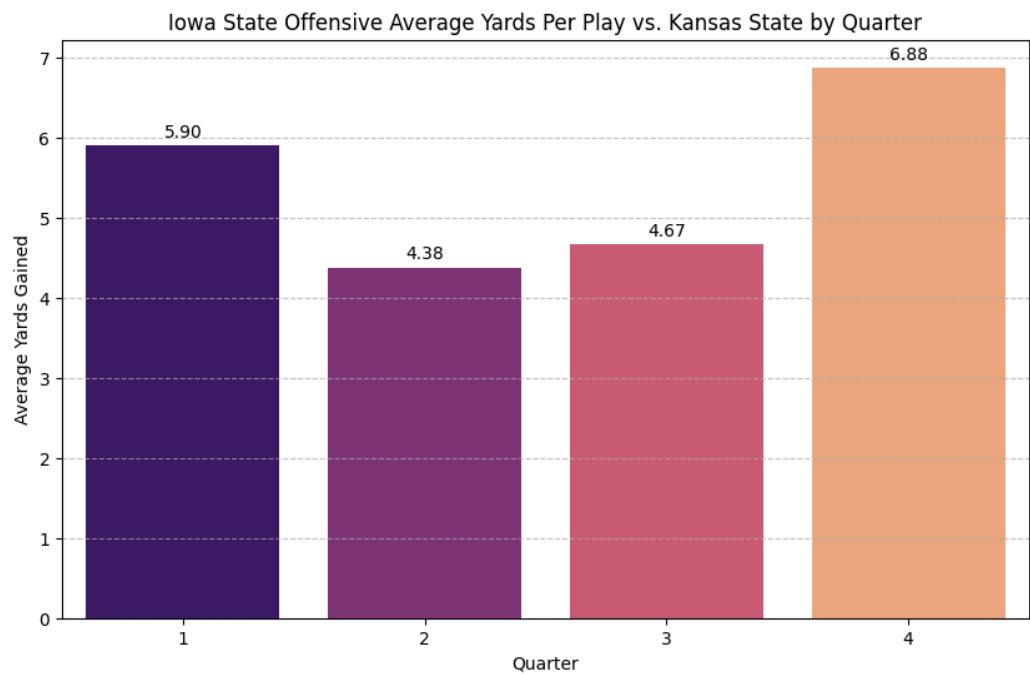
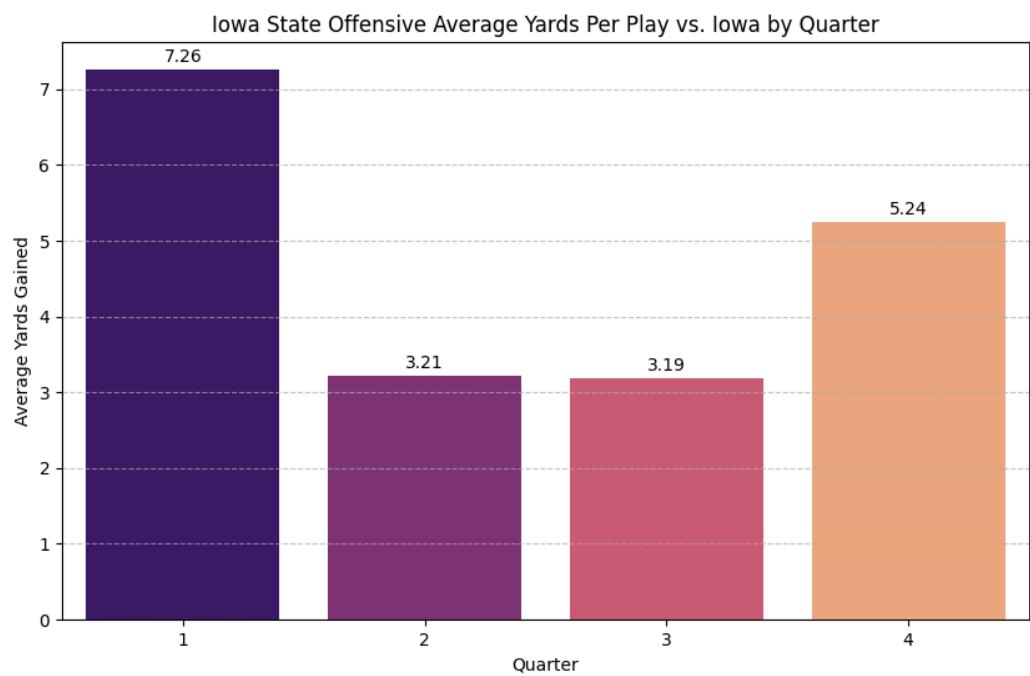


Iowa State Offensive Average Yards Per Play vs. Cincinnati by Quarter

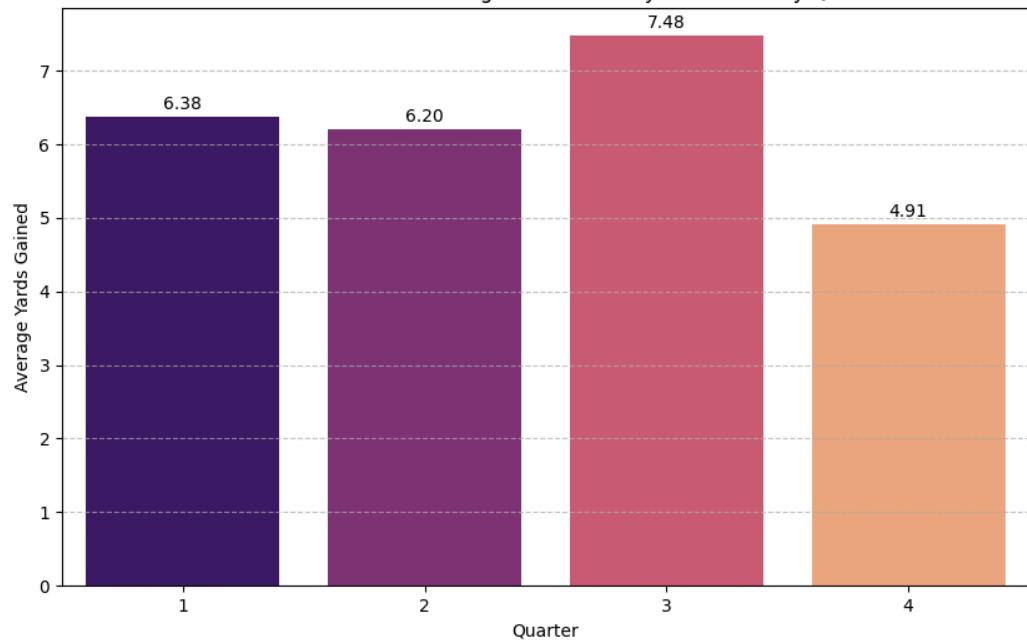


Iowa State Offensive Average Yards Per Play vs. Colorado by Quarter

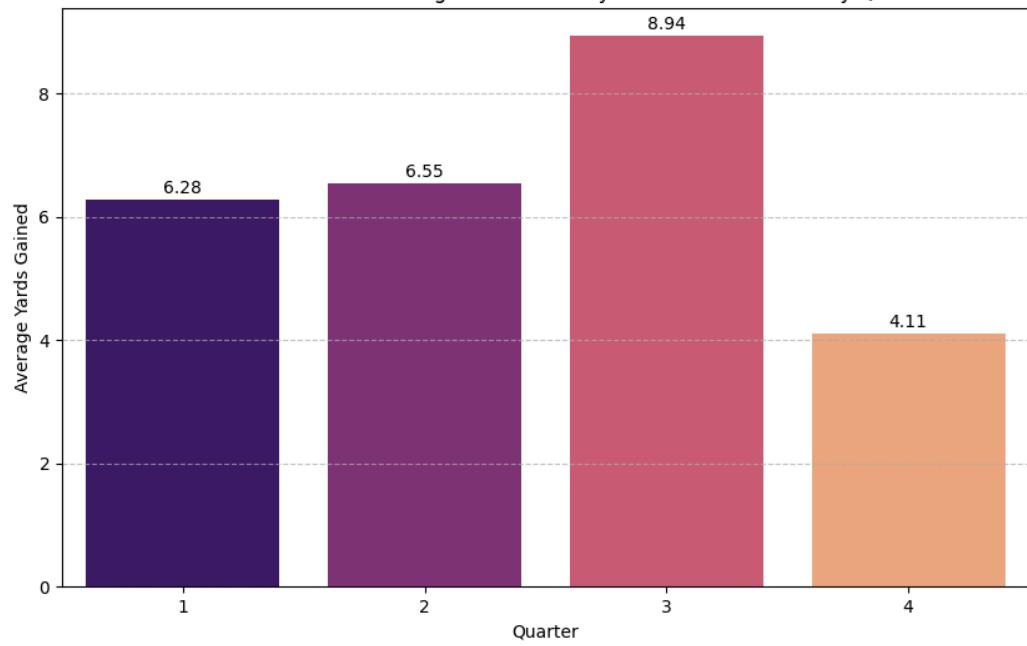




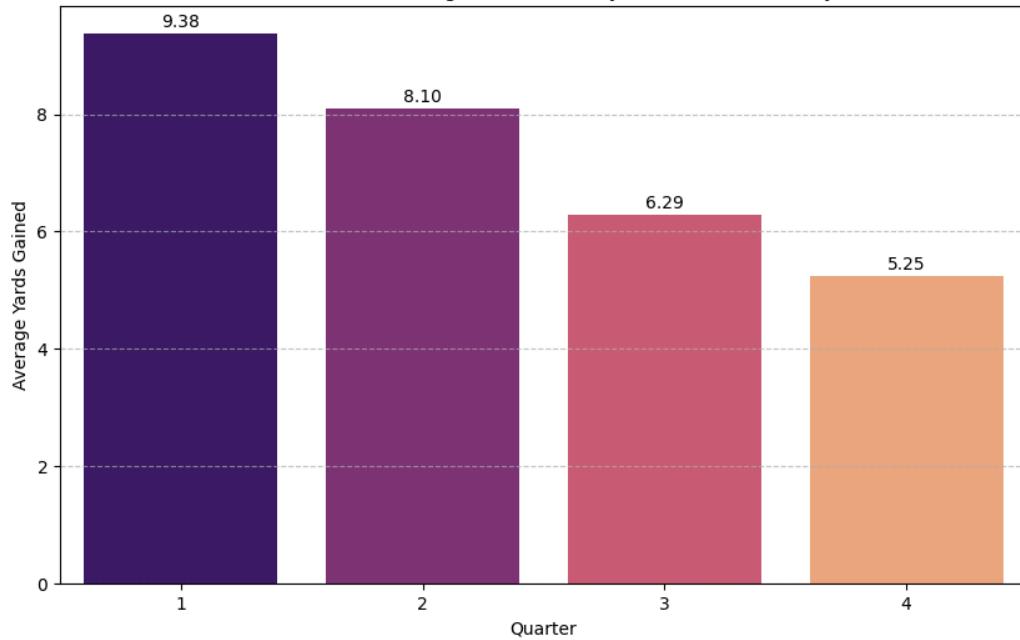
Iowa State Offensive Average Yards Per Play vs. Kansas by Quarter



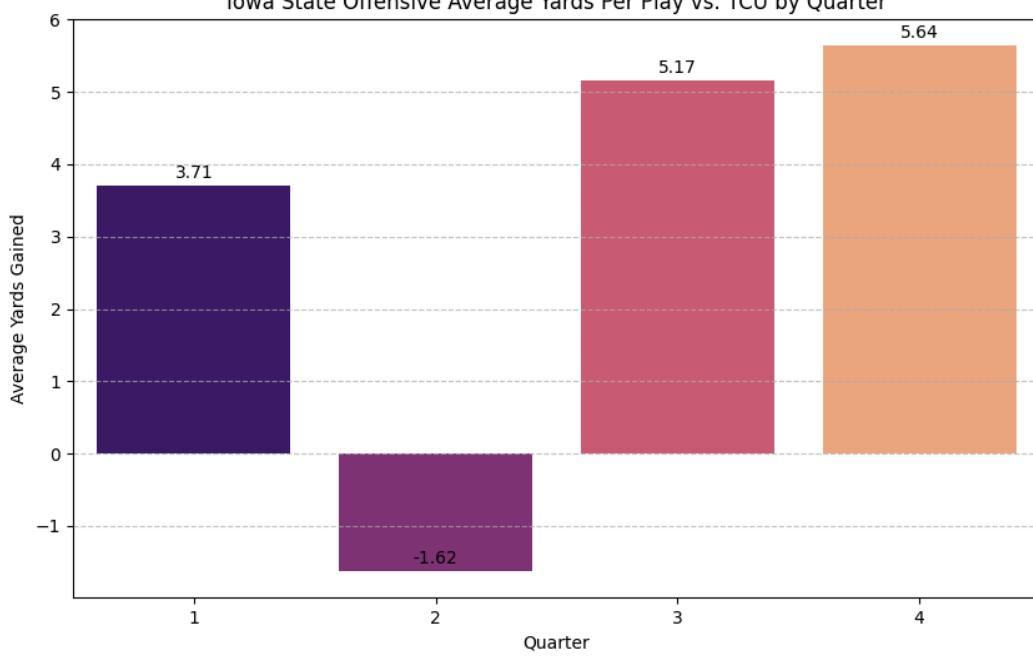
Iowa State Offensive Average Yards Per Play vs. Oklahoma State by Quarter



Iowa State Offensive Average Yards Per Play vs. South Dakota by Quarter

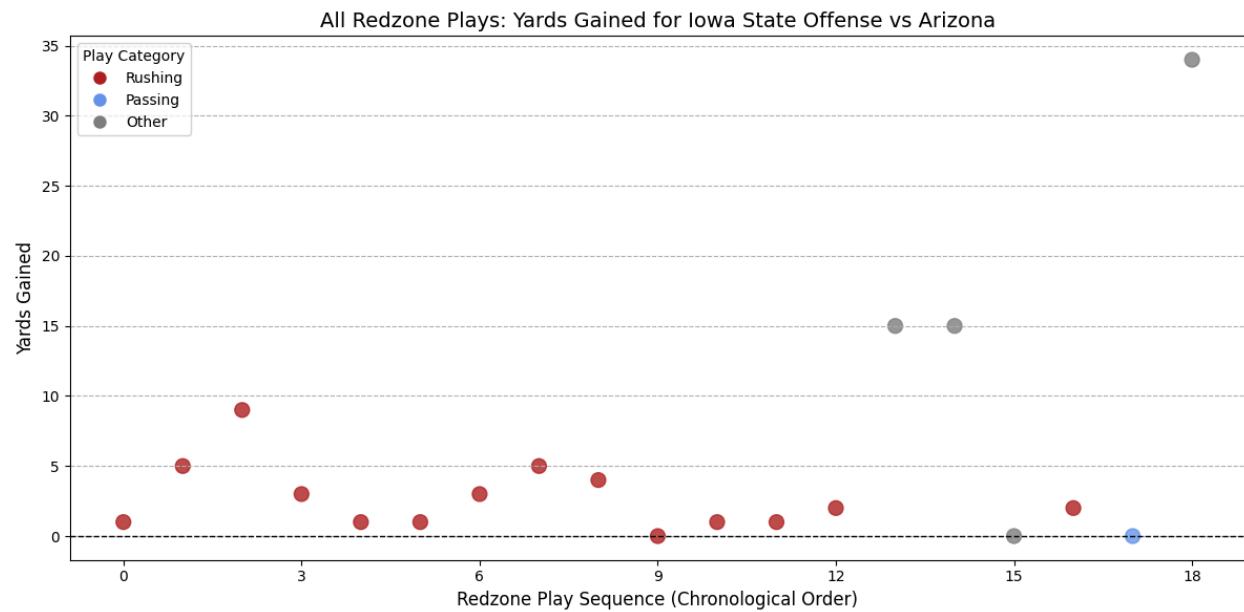
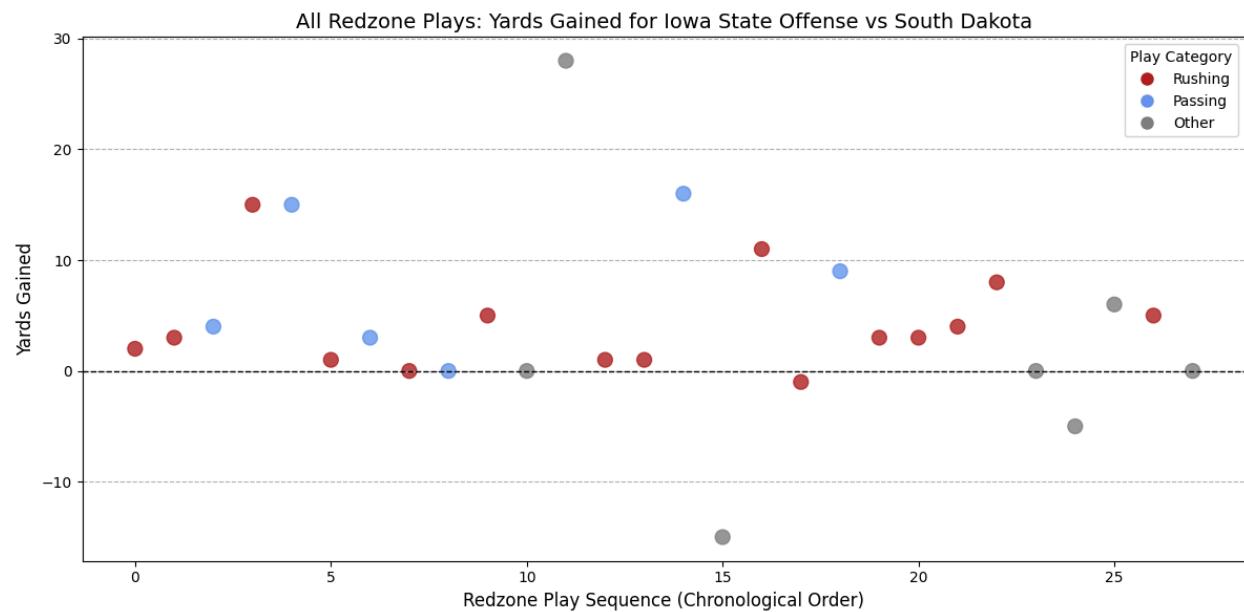


Iowa State Offensive Average Yards Per Play vs. TCU by Quarter

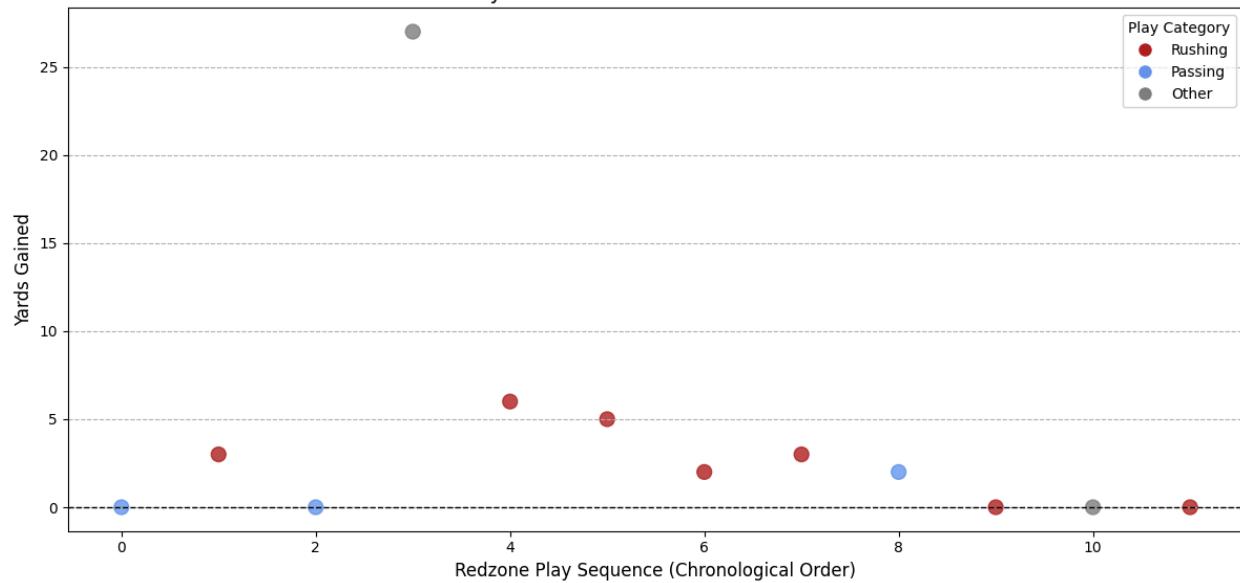


All redzone plays

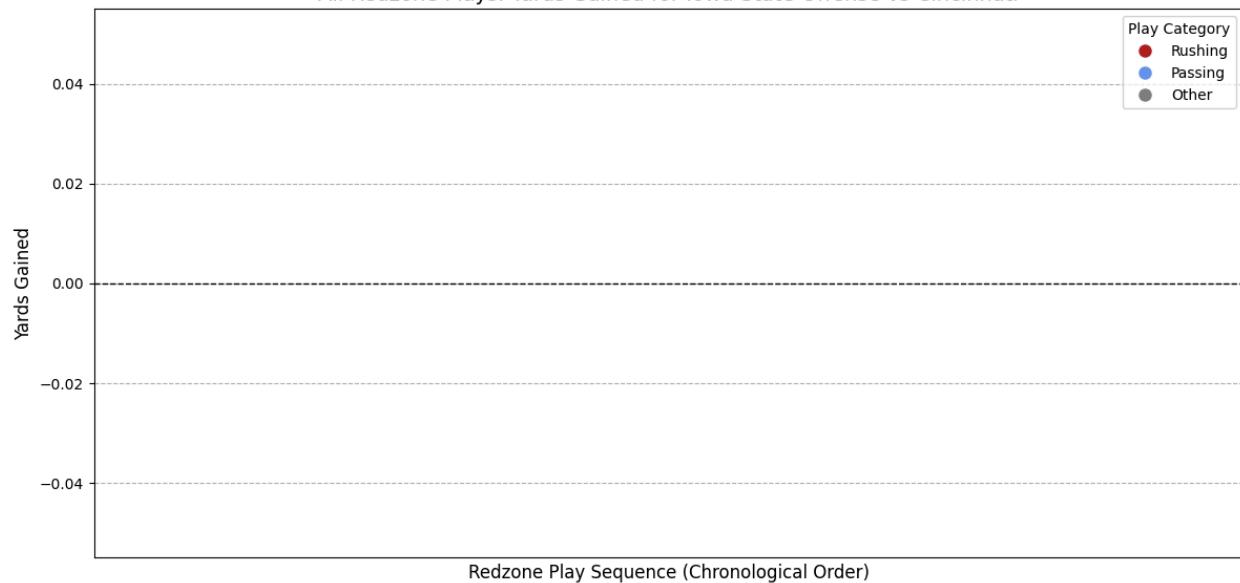
The purpose of this graph was to visualize the yards gained in the red zone on different types of plays. This graph allowed us to analyze what type of red zone plays were most effective during the game, as well as segmenting which period of time was the most efficient.



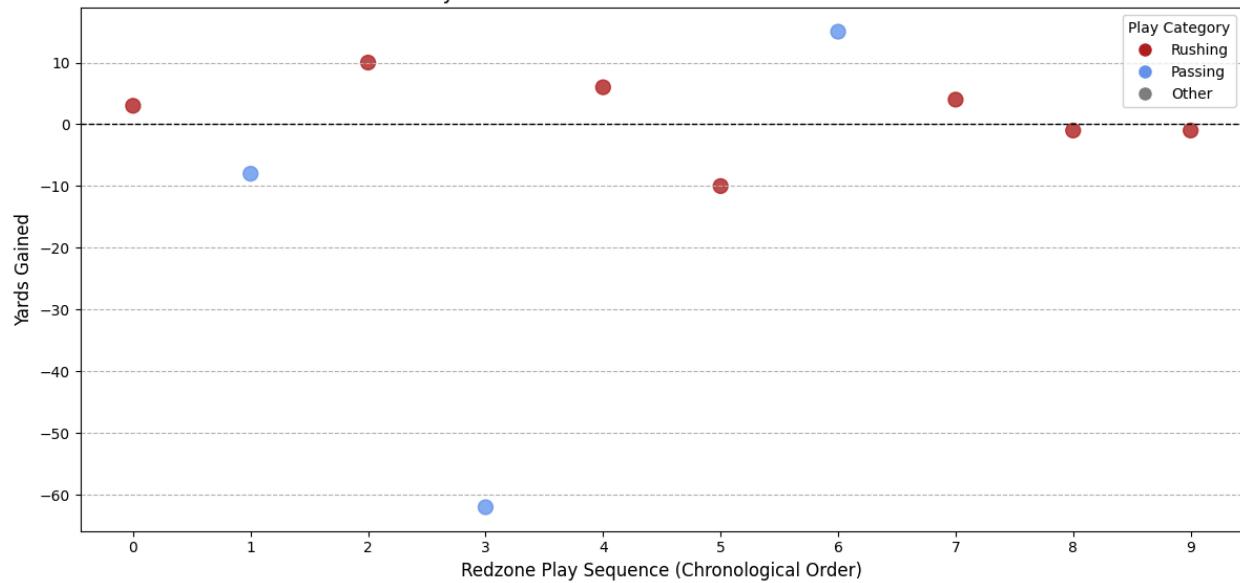
All Redzone Plays: Yards Gained for Iowa State Offense vs Iowa



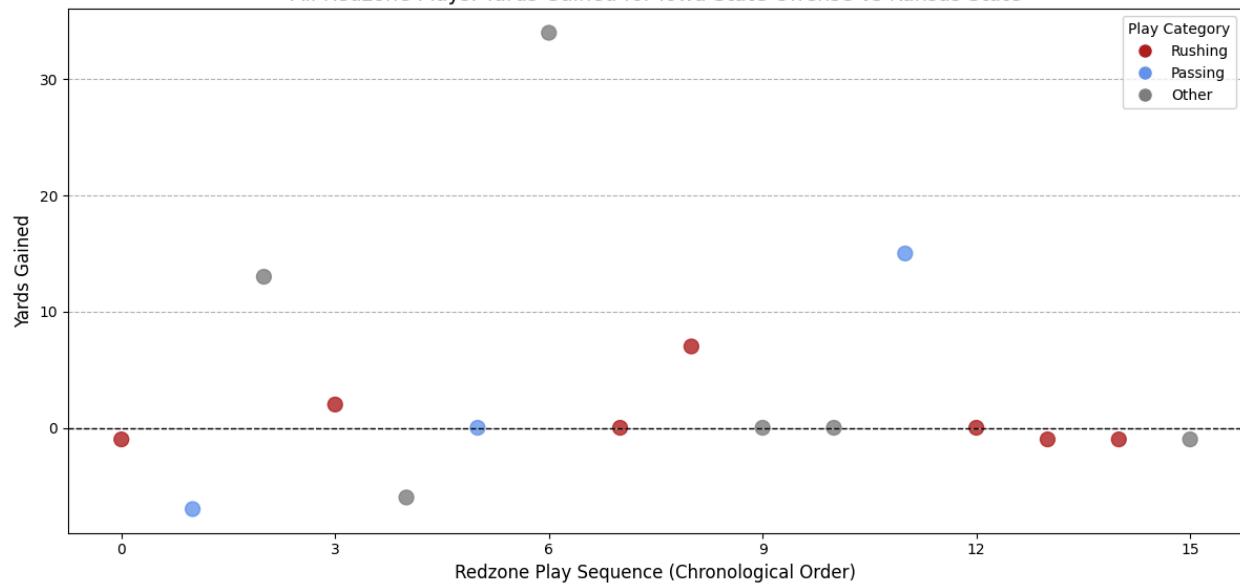
All Redzone Plays: Yards Gained for Iowa State Offense vs Cincinnati



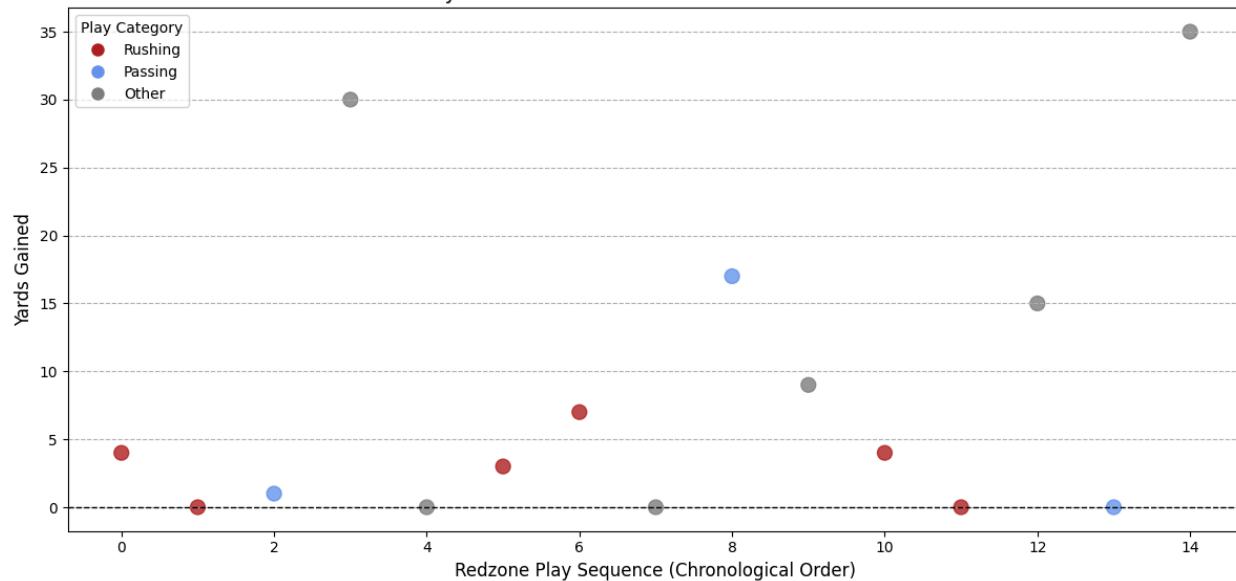
All Redzone Plays: Yards Gained for Iowa State Offense vs Arkansas State



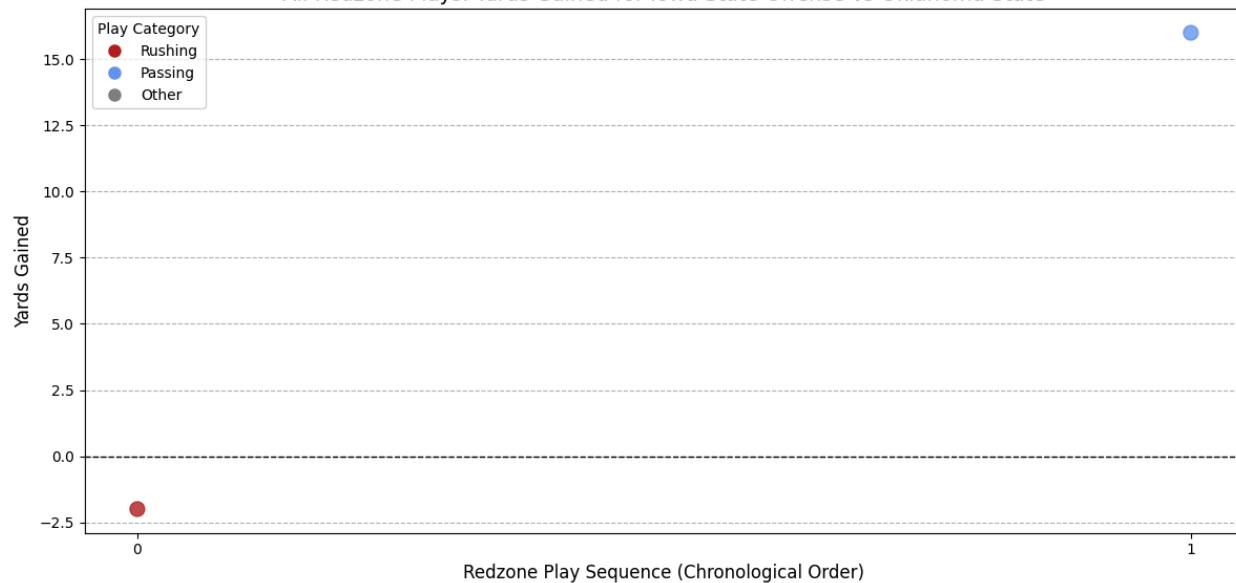
All Redzone Plays: Yards Gained for Iowa State Offense vs Kansas State

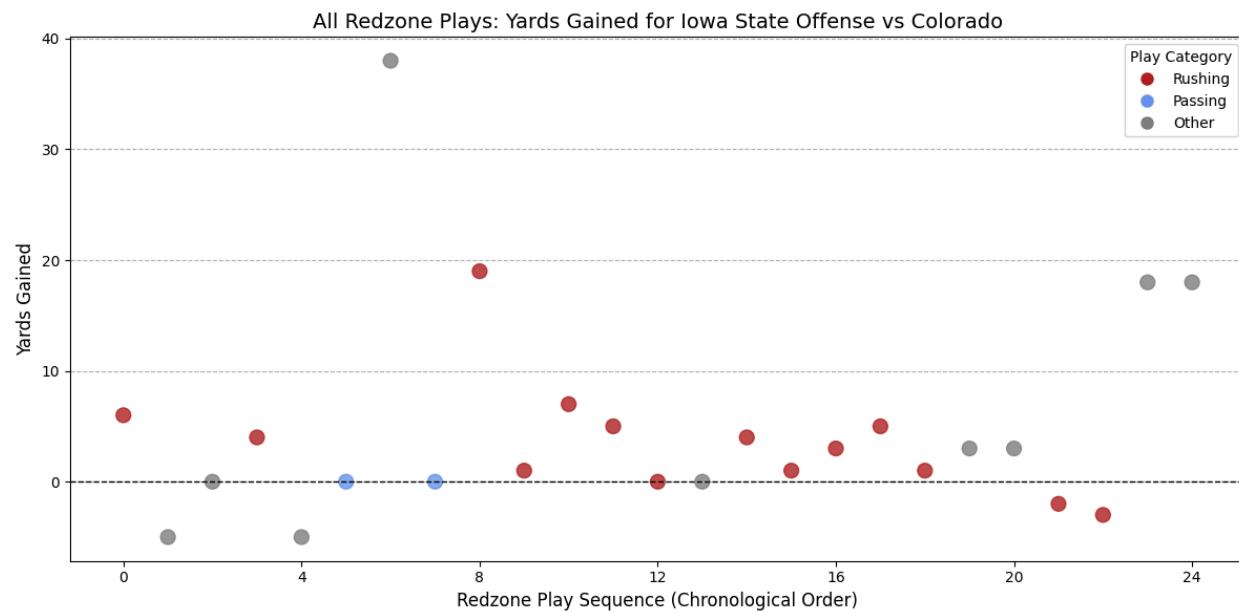
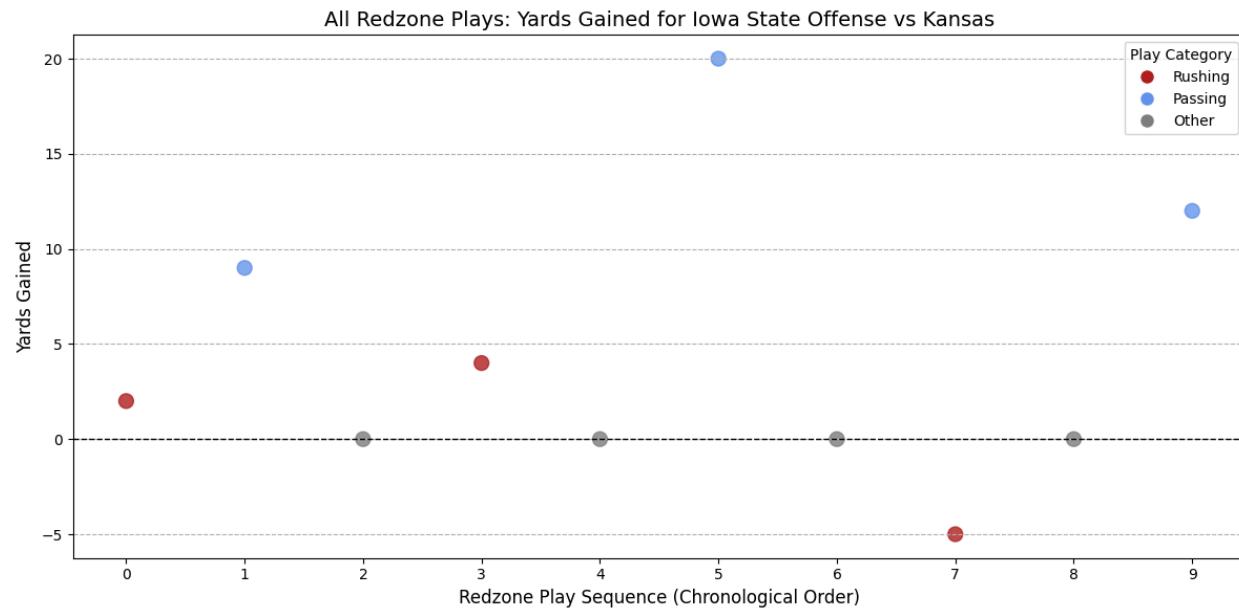


All Redzone Plays: Yards Gained for Iowa State Offense vs Arizona State

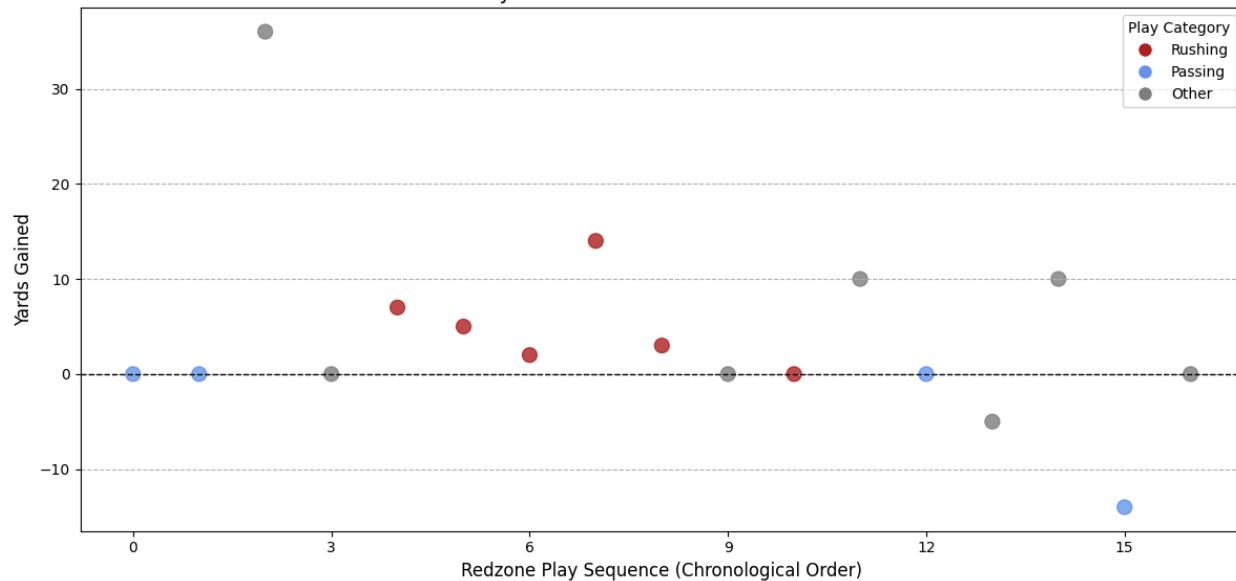


All Redzone Plays: Yards Gained for Iowa State Offense vs Oklahoma State

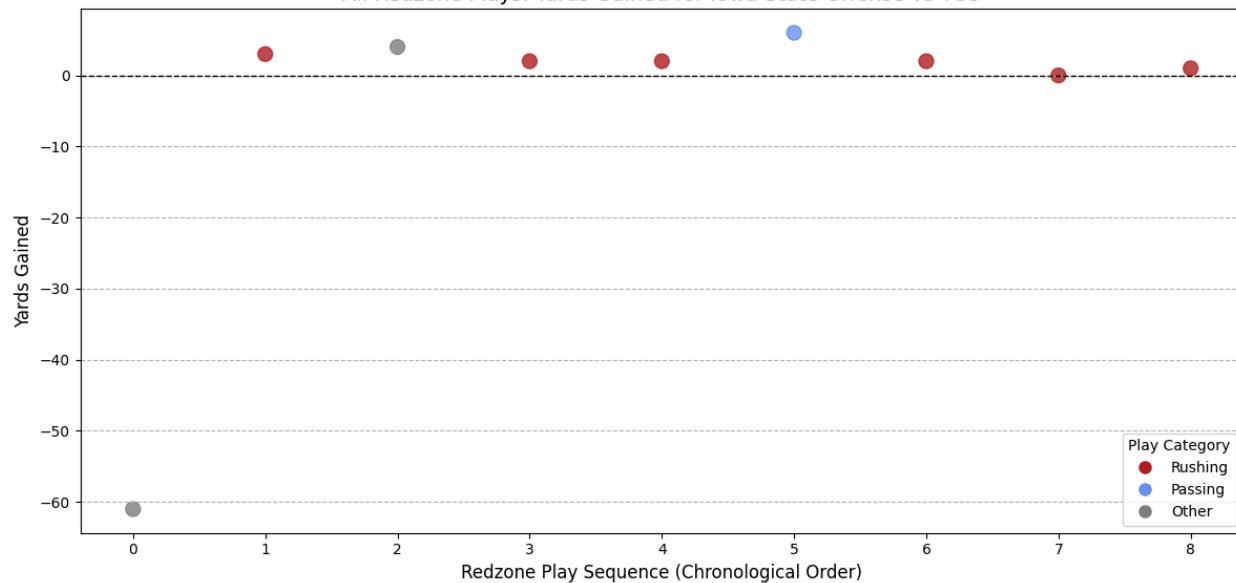




All Redzone Plays: Yards Gained for Iowa State Offense vs BYU



All Redzone Plays: Yards Gained for Iowa State Offense vs TCU



Documentation

We obtained our data through our data source with access from an API key.

Data source: collegefootballdata.com

Python Code Notebook

This will let you see our Python code for the project.

[Link to Github Repository](#)