Executive Summary

The Baseball Advanced Scouting Analytics Project introduces a comprehensive Shiny application designed to enhance offensive game planning for our upcoming matchup against the Tampa Bay Rays. This interactive tool combines pitch-by-pitch data analysis with dynamic visualizations to provide data-driven insights into opposing pitchers' patterns, tendencies, and weaknesses. The application features customizable filters for team, pitcher, date range, and batter handedness alongside multiple visualization tools, including pitch metrics, location heat maps, interactive pitch movement plots, count-based pitch usage analysis, and strike zone visuals. Built using R Shiny and leveraging the BaseballR package for data collection from Baseball Savant, the application implements efficient data processing. It supports various analytical scenarios including pre-game preparation for both left and right-handed hitters, pitcher scouting, base-stealing strategy development, and pitcher performance analysis. The tool represents a significant advancement in baseball analytics capabilities, enabling teams to develop targeted offensive strategies through comprehensive data analysis. Future opportunities include expanding to additional teams, integrating a hitter analysis, and adding predictive analytics features, making this platform a valuable asset for modern baseball strategy development.