



Introduction/Motivation

7-person team working with Purdue Athletics to provide data analytics and data visualizations for Ticketing-specific problems

Tableau

- Turning ticketing sales into comprehensible graphics
- Allows athletics to visualize historical and secondary market trends in sales

Mapping

- Restructuring code and analyzing data within sections
- Allows athletics to compare all the seats within a section based on key parameters

Calendar

- Web application that pulls a summary ticketing sales numbers for a given day
- Allows athletics to easily store and retrieve football sales files for any given day

Problem

- Inconvenient to have to run code to keep the compiled file up-to-date when new data comes in every day.

Solution

- More for Tableau to access the most up to date data we set up a Postgres database to store all the data
- Tableau draws from that data set. Thus, always having the most up to date data.

Research Methodology

- We needed a single database for tableau to draw from so that the Tableau is always working with up to date
- It also needs to be intuitive enough for future use

Tableau

Problem

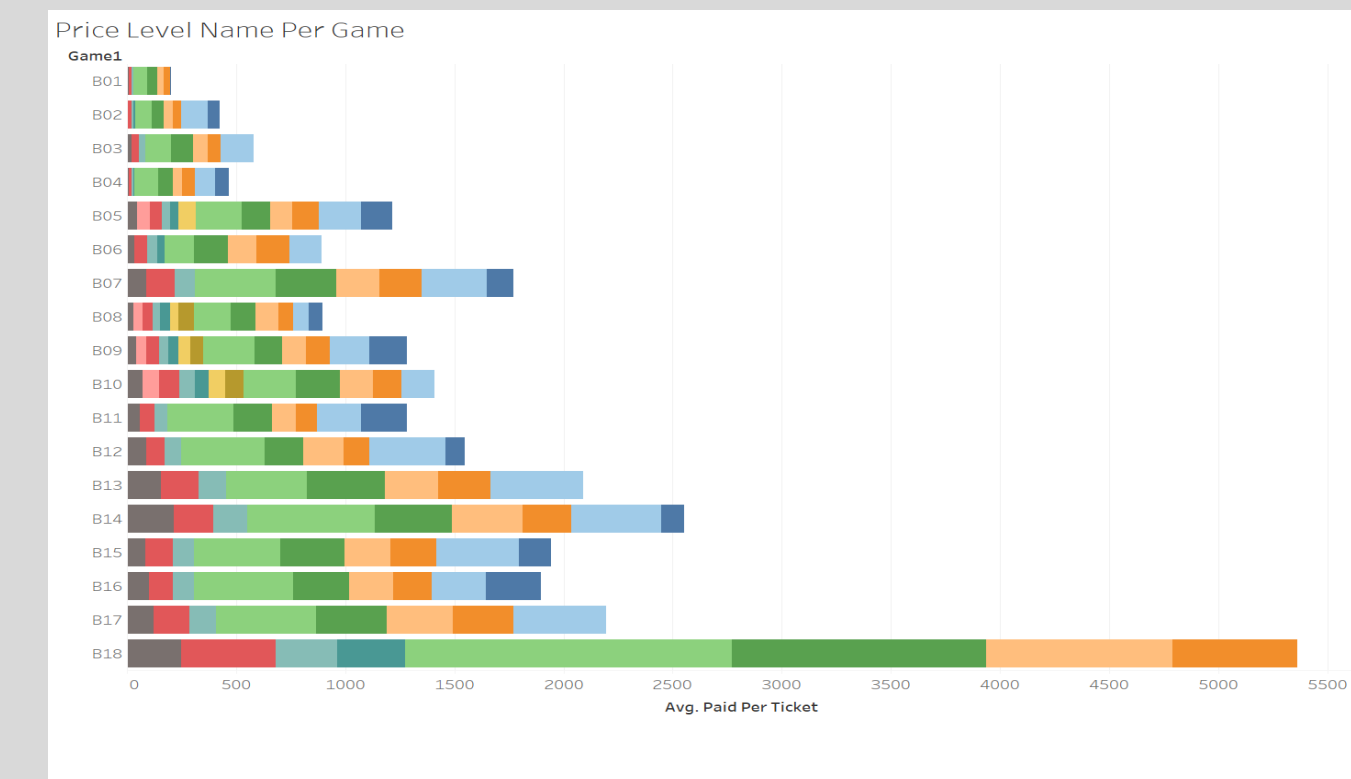
- In the StubHub dataset, some columns were storing values as the wrong type while others had bad data.

Solution

- We added that code in the Python script that generates our StubHub file
- (1) eliminated the raw data that was importing incorrectly
- (2) future-proofed the work for team members after us

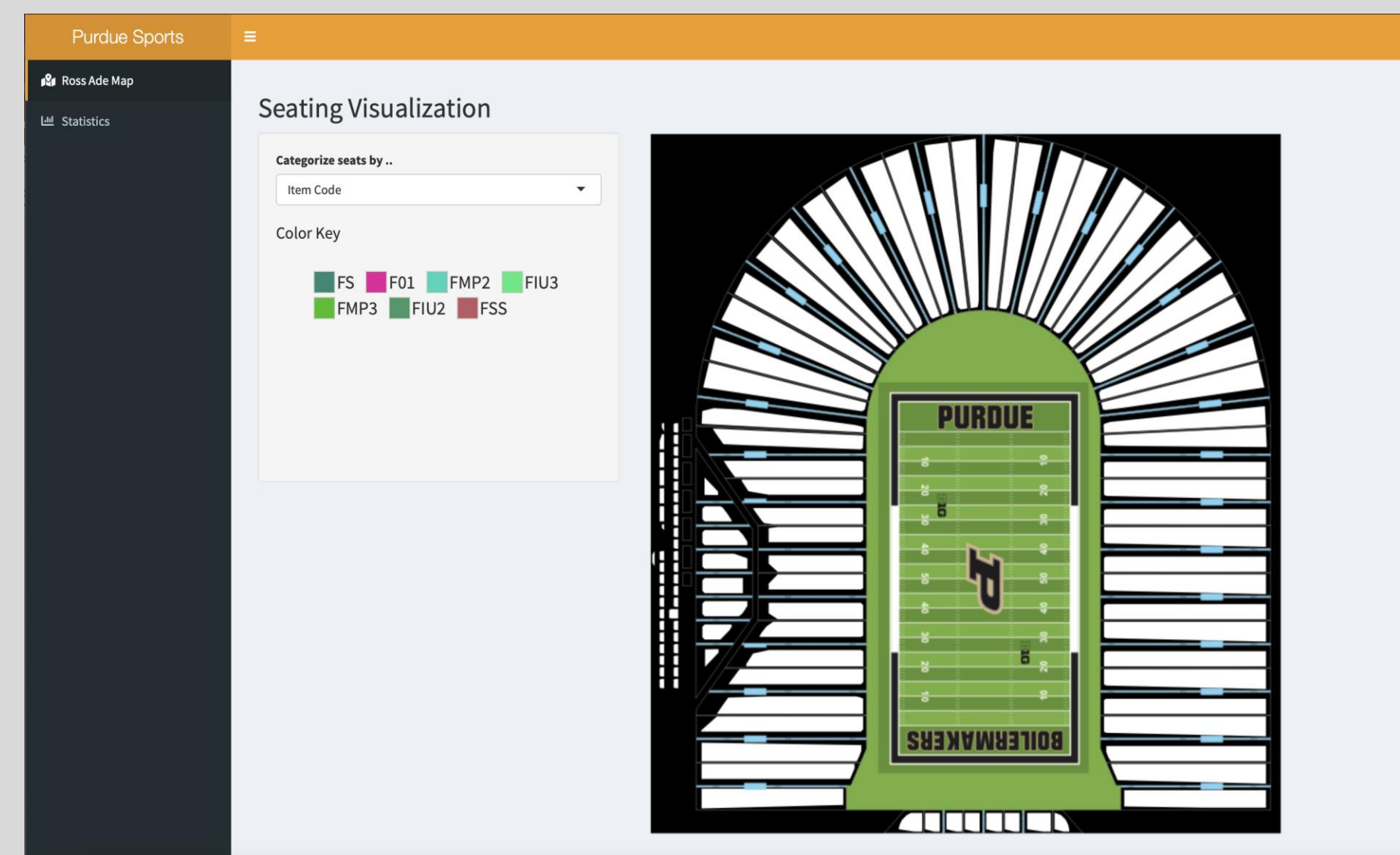
Research Methodology

- We first researched how to fix the current dataset so the Tableau graphs were accurate
- Incorporated our fix in a Python CRON job to ensure future groups did not have to edit the things



- Using the Secondary Market StubHub data, graphs were created via tableau to represent the ticket prices per game in different sections of the stadium.
- Each line represents a different game
- Each color represents a different section in the stadium.

Ross-Ade Map



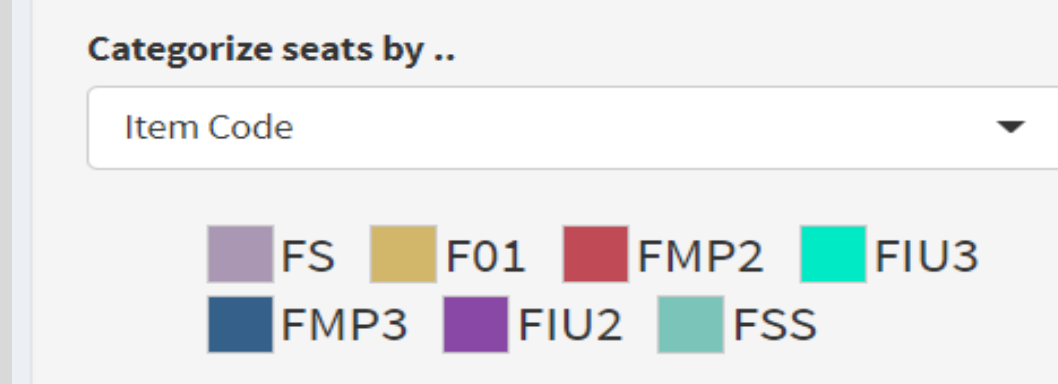
The Ross-Ade Map Application allows the user to view data for a Purdue football game through an interactive map. The user can select various ticket categories and click into individual sections to get more detail on the data.

When a user clicks into a section, they are presented with a map of the seats in that section. Each seat corresponds to a value in the selected category. On the "Statistics" page, it is shown how many seats of each value are in the section.

Research Methodology

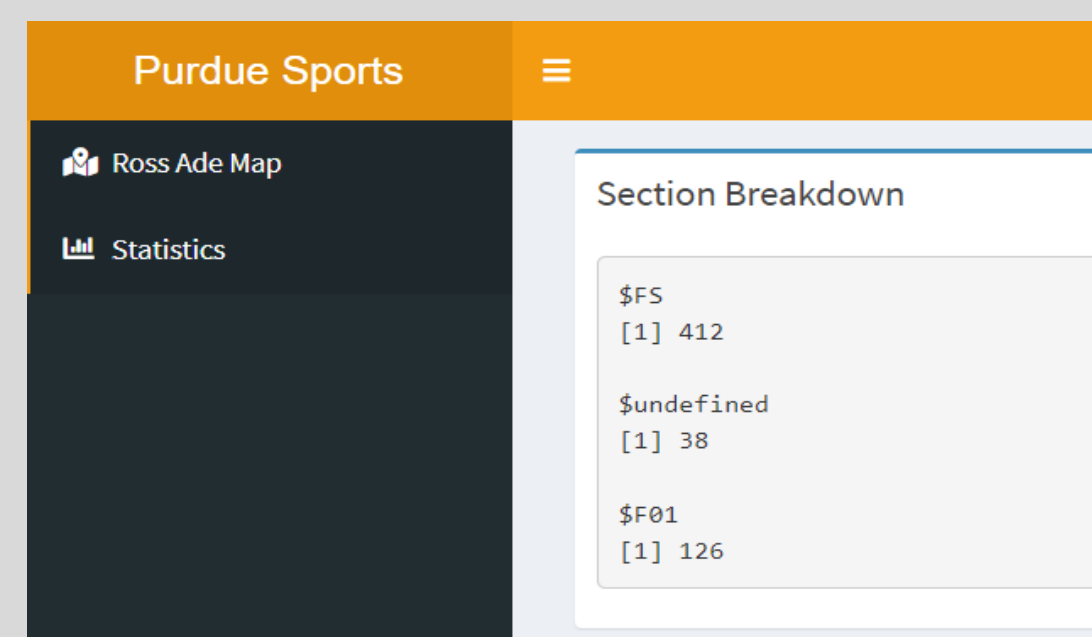
To accomplish our tasks this year, we used tools such as RStudio and Jupyter Notebook. First, we migrated the code to Brown cluster, then added dictionary, and finally modified rShiny application code.

Seating Visualization



This is the color key (pictured above) for the seats of a section (pictured right)

From the seats pictured right, we created a breakdown of the number of seats in the same application



Calendar Application

Input:

- Calendar application accesses compiled file that is stored online, updated daily with new sales data

Output:

- User selects a past date, Application downloads sales data for that day to User's computer as a ".csv" file

Why?

- We created a calendar application to easily access ticketing data from any day. This way it would be super easy to track ticket sales over time and compare trends from the past.

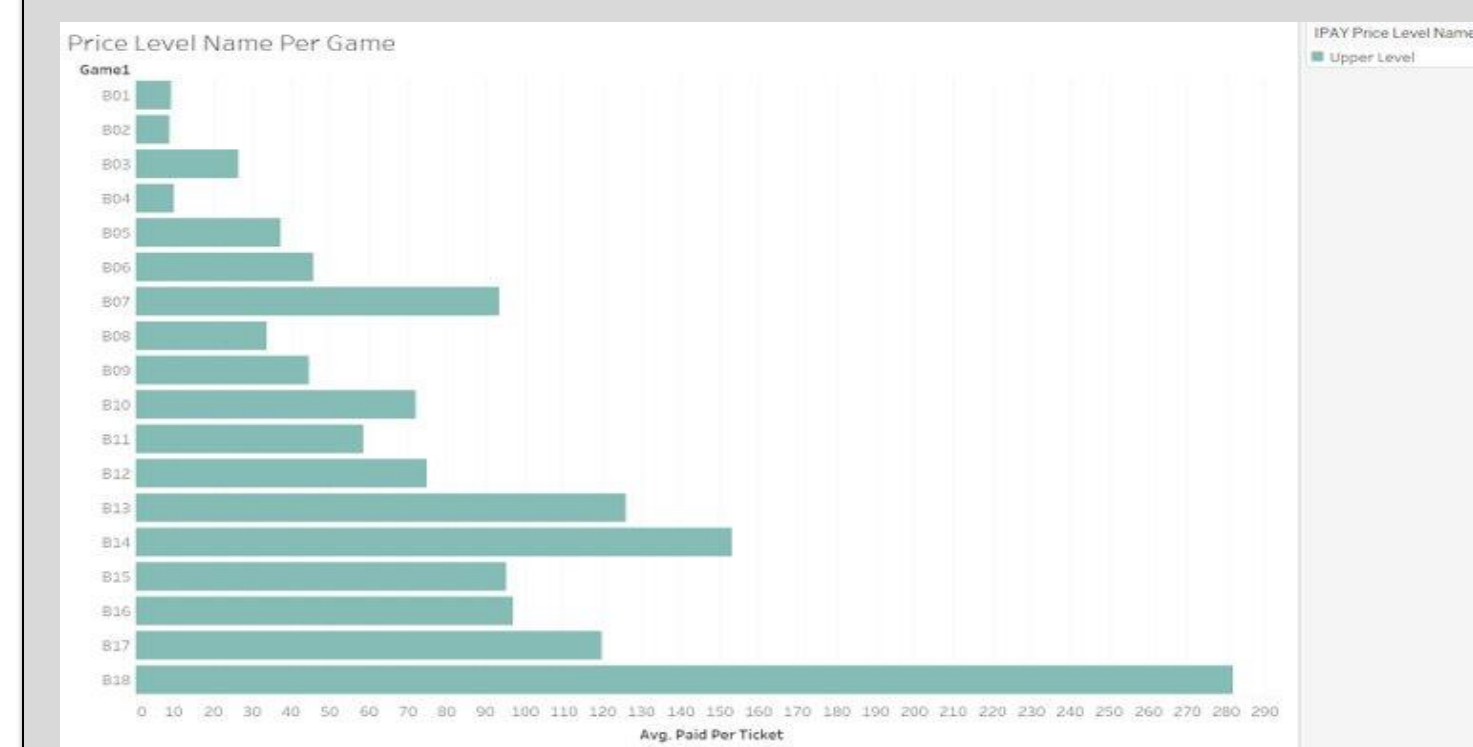
How?

- We used Downloader software with Python and SQL
- The Python script would query SQL database containing an appended ".csv" file with compiled small file data



Date	Index	event_code	Order Total	Event Amt (Total)	(Total)	Event Prnt (Total)	(Total)	S (Total)
9/7/2021	24	F01	49801	\$1,344,100.00	\$1,344,100.00	\$1,344,100.00	\$1,344,100.00	
9/7/2021	25	F02	40772	\$1,250,394.00	\$1,250,394.00	\$1,250,394.25	\$1,250,394.00	
9/7/2021	26	F03	39658	\$1,224,040.00	\$1,224,040.00	\$1,169,088.00	\$1,224,040.00	
9/7/2021	27	F04	50288	\$1,675,705.00	\$1,675,705.00	\$1,608,637.00	\$1,675,705.00	
9/7/2021	28	F05	38240	\$1,130,642.50	\$1,130,642.50	\$1,071,845.50	\$1,130,642.50	
9/7/2021	29	F06	38482	\$1,154,358.50	\$1,154,358.50	\$1,079,834.50	\$1,154,358.50	

Graph above can become overwhelming so here is a visual of only one section type and its pricing through all 18 home games.



Future Goals

1. Create automated reports using Tableau to send weekly graphics and summary data directly to email
2. Create a map application for Mackey Arena
3. Compare multiple games at a time within the same application
4. Connect the centralized database of data to all moving components (tableau work, map application, and calendar)

Acknowledgements

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