Purdue Athletics – Ticketing

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PROJECT MOTIVATION

We are improving an existing mapping system with the goal of selling more tickets to Purdue football and basketball games. This will achieve several goals the organization has:

- Enhancing data visualization
- Augmenting existing reports on sales
- Utilizing statistical analysis
- Providing a baseline for adaptive ticket pricing.

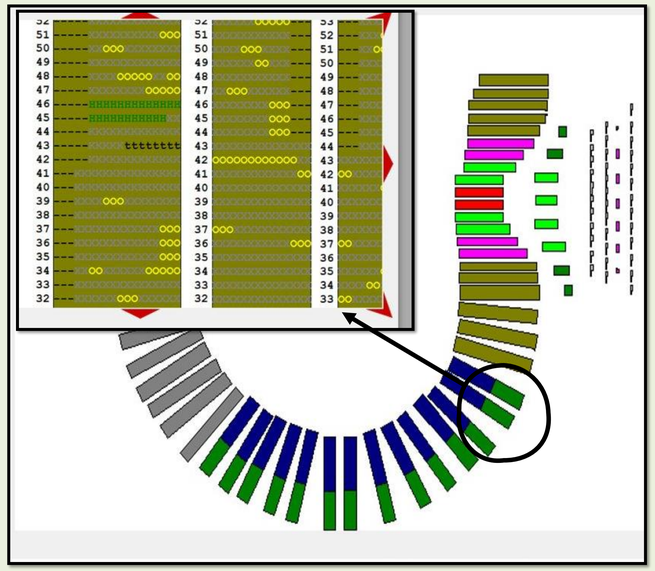
The existing map is primitive with low user interactivity, while previous versions of this project had low continuity potential and computing constraints. This semester, we focused on ground-up development using Python apps and packages.

RESEARCH METHODOLOGY

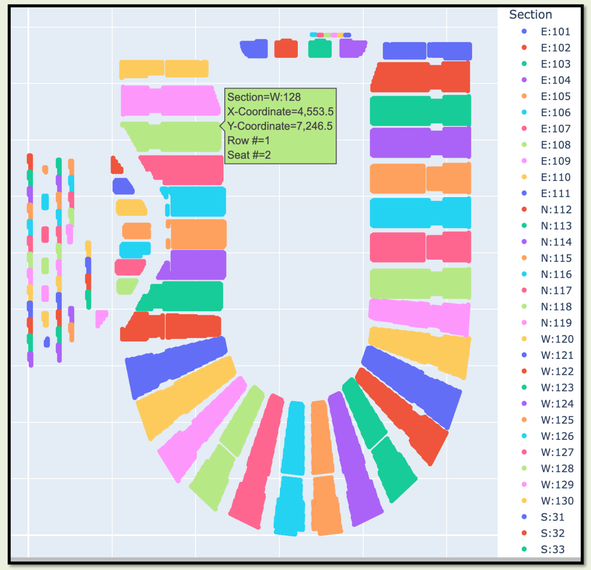
Since we needed to change the app framework, we worked on development instead of data. The things we deliberated involved:

- File infrastructure
- Website versus local hosting
- Finding the best Python app for interactive graphing.

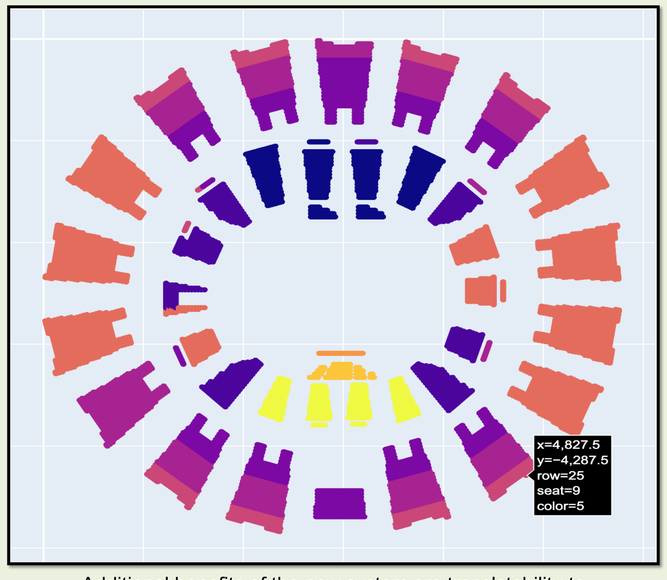
We were given an SVG with the necessary information for mapping Ross-Ade Stadium and, once converted to Python, used the Plotly and Dash packages to graph and add interactivity to the coordinate information. We researched advanced data representation and app callbacks to reactively change graphs upon different data selection.



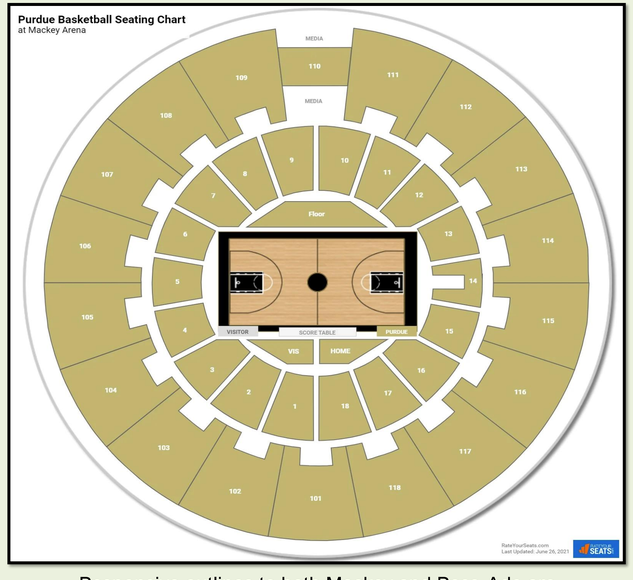
The Ross-Ade Stadium map, as used by Purdue Athletics. Note the poor color coordination and inaccurate shapes of the sections.



The current work-in-progress version of Ross-Ade, featuring descriptive keys and zoom-in consistency.



Additional benefits of the new system are translatability to Mackey Arena and descriptive hover data.



Responsive outlines to both Mackey and Ross-Ade are planned for implementation (picture courtesy of RateYourSeats.com)

CONCLUSIONS

- Our team found that using **Python** packages **Plotly** and **Dash** were the best for creating interactive charts and nesting them in a user-friendly app.
- Python was chosen for its gentle learning curve, as our perspectives were diversified by differing levels of programming experience. It also has substantial support from our computing services.
- The only major barrier involved Dash's unique references to HTML elements, with which getting comfortable took more time than we had.

FUTURE GOALS

Much of the work we did was with the map **framework** as opposed to the data, so our priority is merging the map file with the data file.

Getting game data will deliver on the predictive goals we have. It will allow us to have useful descriptive statistics, as well as hover data, that enhances the Purdue Athletics team's reports.

ACKNOWLEDGEMENTS

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