



Capstone Project



LIVE STREAM

- Agenda:
 - Work through Capstone Project Together
 - Q&A based on chat and Google Forms



Capstone Project

- Let's put all your current skills together with a fun Capstone Project!
- This project takes us all the way back to 2015...
 - **But before we begin, let's quickly review our ML Pathway!**



ML Pathway



**Real
World**

**Problem
to Solve**

How to fix or change X?

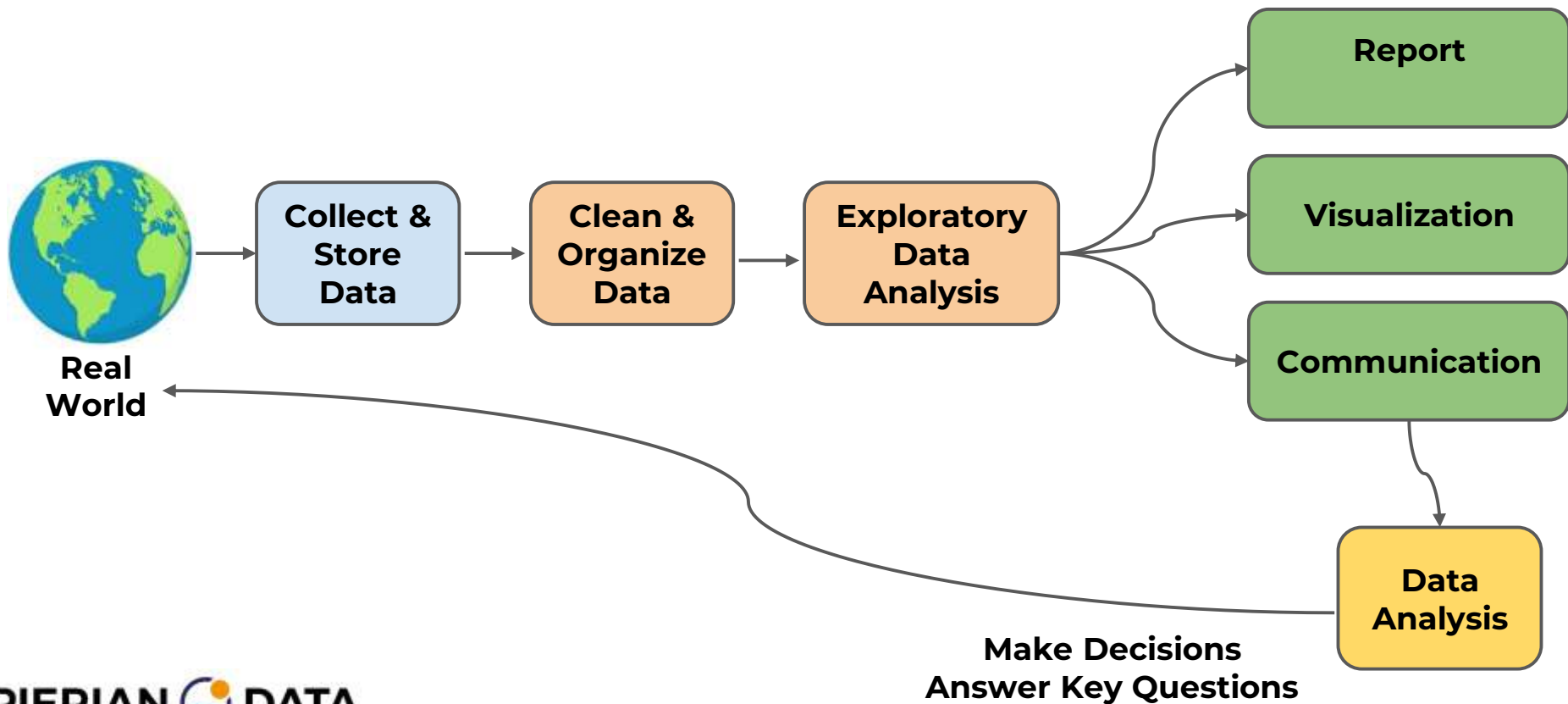
**Question
to
Answer**

How does a change in X affect Y?





ML Pathway





ML Pathway

Jupyter Notebook + NumPy + Pandas + Matplotlib + Seaborn



**Real
World**

**Collect &
Store
Data**

**Clean &
Organize
Data**

**Exploratory
Data
Analysis**

Report

Visualization

Communication

**Data
Analysis**

**Make Decisions
Answer Key Questions**



Capstone Project

- Question to Answer:
 - Is there a conflict of interest for a website that both sells movie tickets **and** displays review ratings?
- Let's travel back in time to the year 2015...



Capstone Project

- 2015
 - Fandango sells movie tickets online



FANDANGO[®]



Capstone Project

- 2015
 - Fandango sells movie tickets online
 - Also displays movie ratings





Capstone Project

- 2015
 - You see Taken 3 has a 4.5 star rating on Fandango.





Capstone Project

- 2015
 - You may be disappointed by the film...



[1080p] Taken 3 - Fence jump scene - 10 hours



Capstone Project

- 2015
 - You begin to ask yourself...
 - Is there a conflict of interest for a website that both sells movie tickets and displays review ratings?
 - Can we answer this with **data analysis**?



Capstone Project

- Fandango

Fandango Media, LLC is an American [ticketing company](#) that sells [movie tickets](#) via their website as well as through their [mobile app](#), as well as a provider of television and streaming media information, e.g., through its subsidiaries [Flixster](#), [Movies.com](#), and [Rotten Tomatoes](#).

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Fandango Media, LLC



Fandango headquarters in Beverly Hills

Formerly [ticketmakers.com](#)

Type [Joint venture](#)



Capstone Project

- The Capstone Project

OCT. 15, 2015, AT 9:52 AM

Be Suspicious Of Online Movie Ratings, Especially Fandango's

By Walt Hickey

Filed under Movies

Get the data on GitHub



"Ted 2," "Avengers: Age of Ultron," and "Fantastic Four"

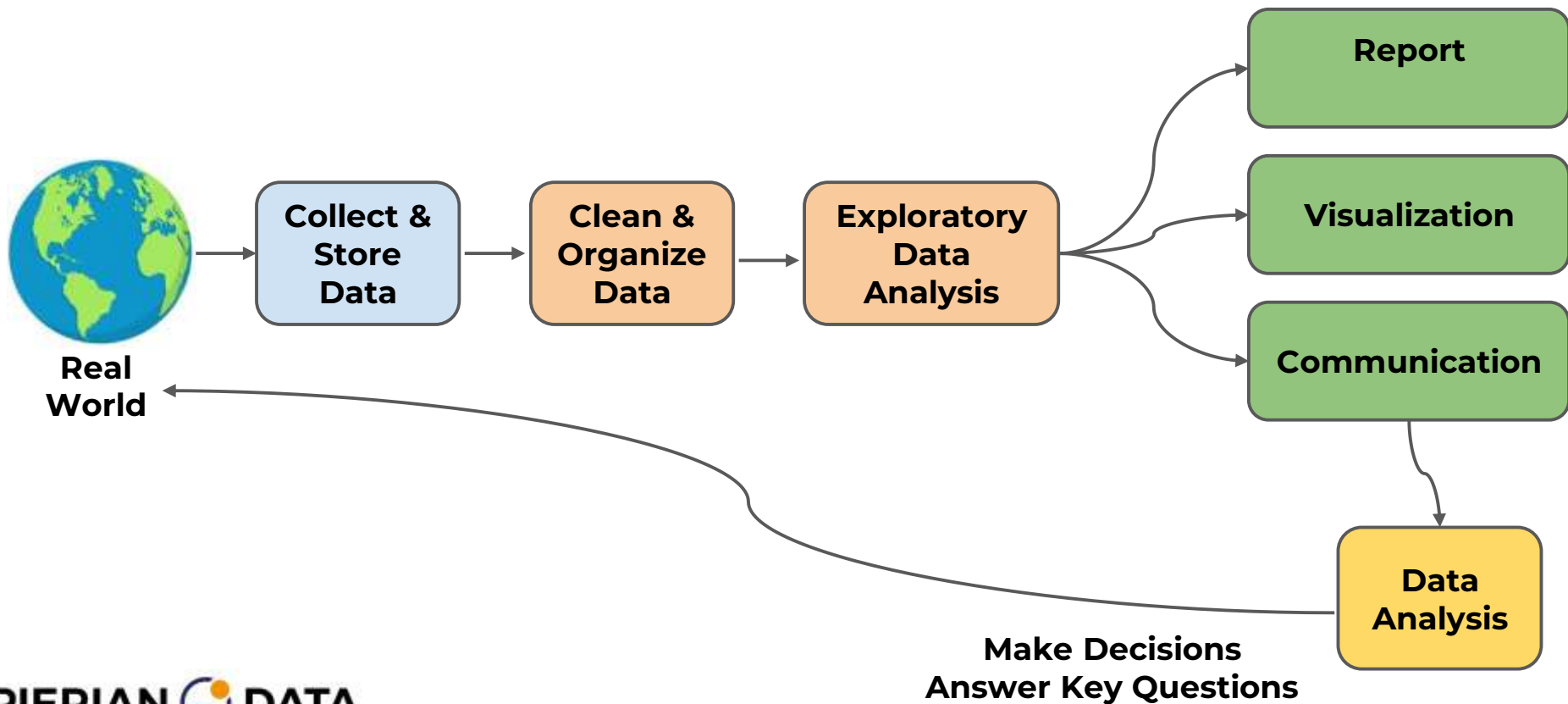


Capstone Project

- Question to Answer:
 - Is there a conflict of interest for a website that both sells movie tickets **and** displays review ratings?
- More Specifically:
 - Does a website like Fandango artificially display higher review ratings to sell more movie tickets?



ML Pathway





ML Pathway



**Real
World**

**Scrape
Review
Websites**

**Pandas
to
Organize**

**Use
Seaborn to
Explore**

Report

Visualization

Communication

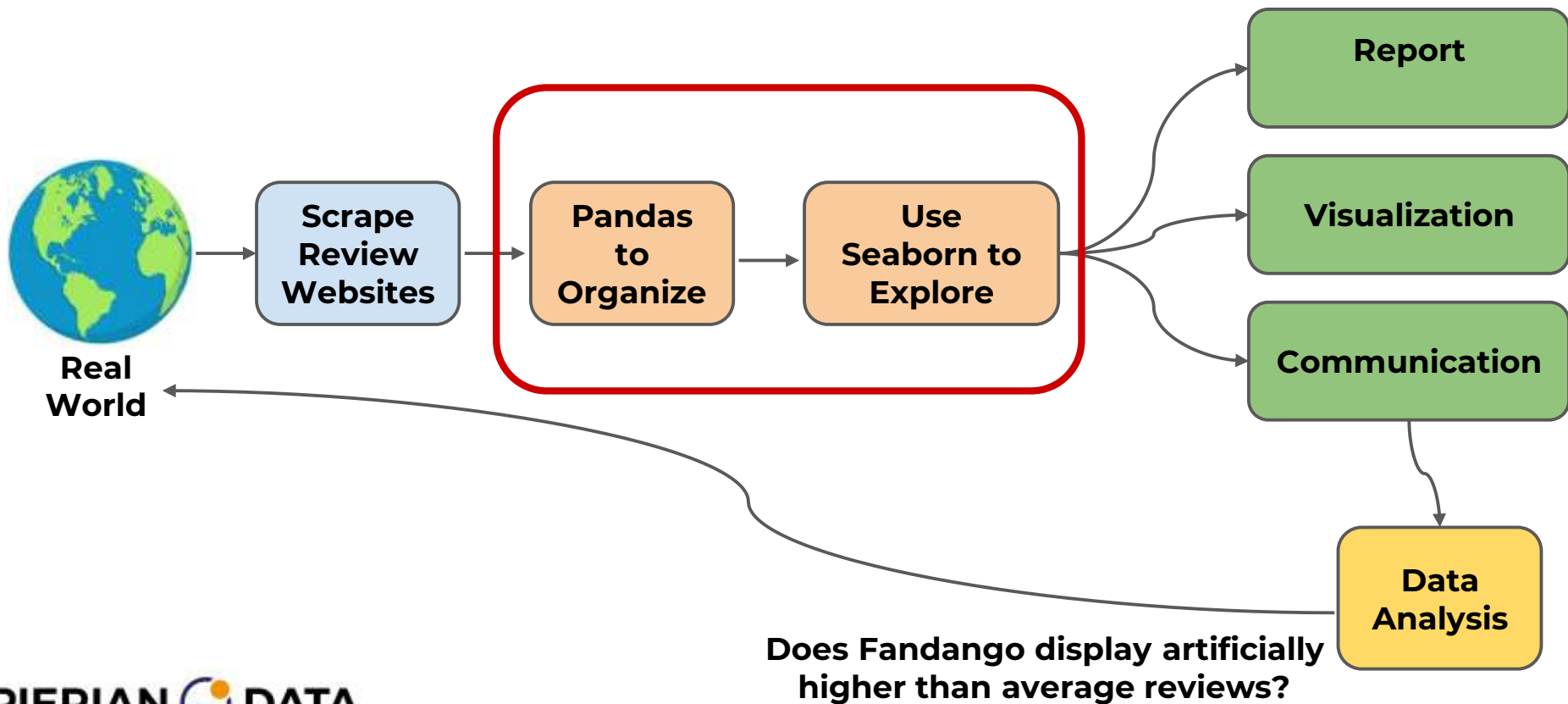
**Data
Analysis**

**Does Fandango display artificially
higher than average reviews?**



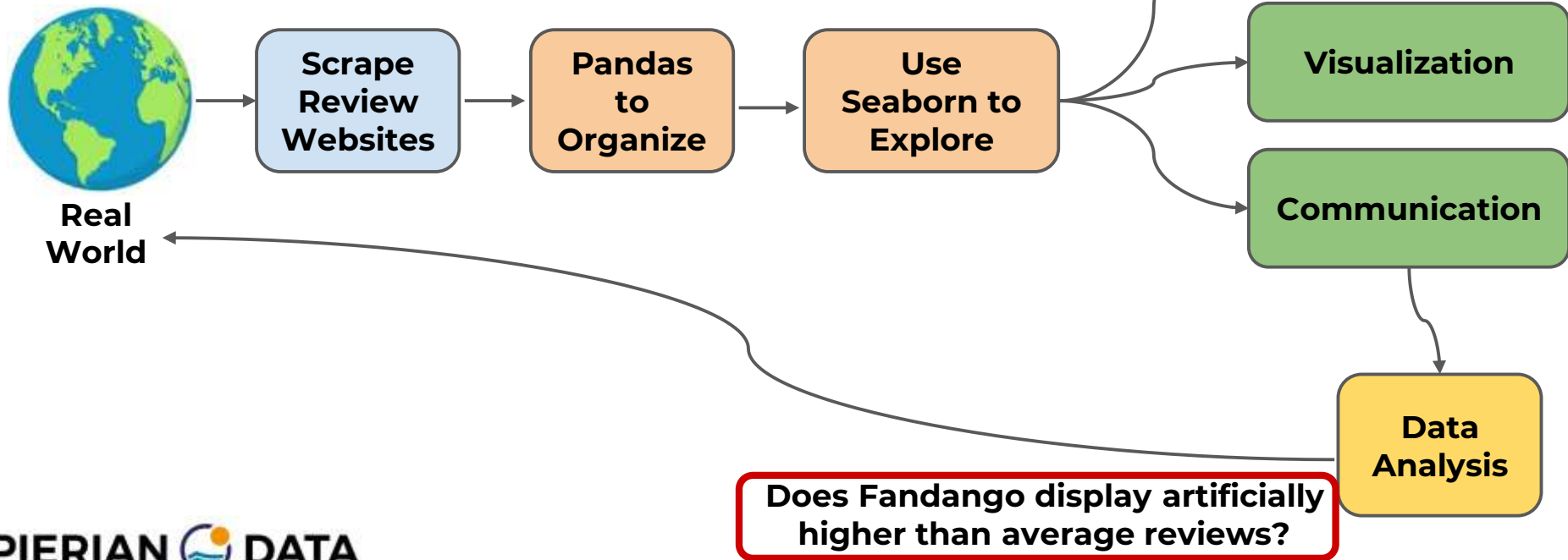


ML Pathway





ML Pathway





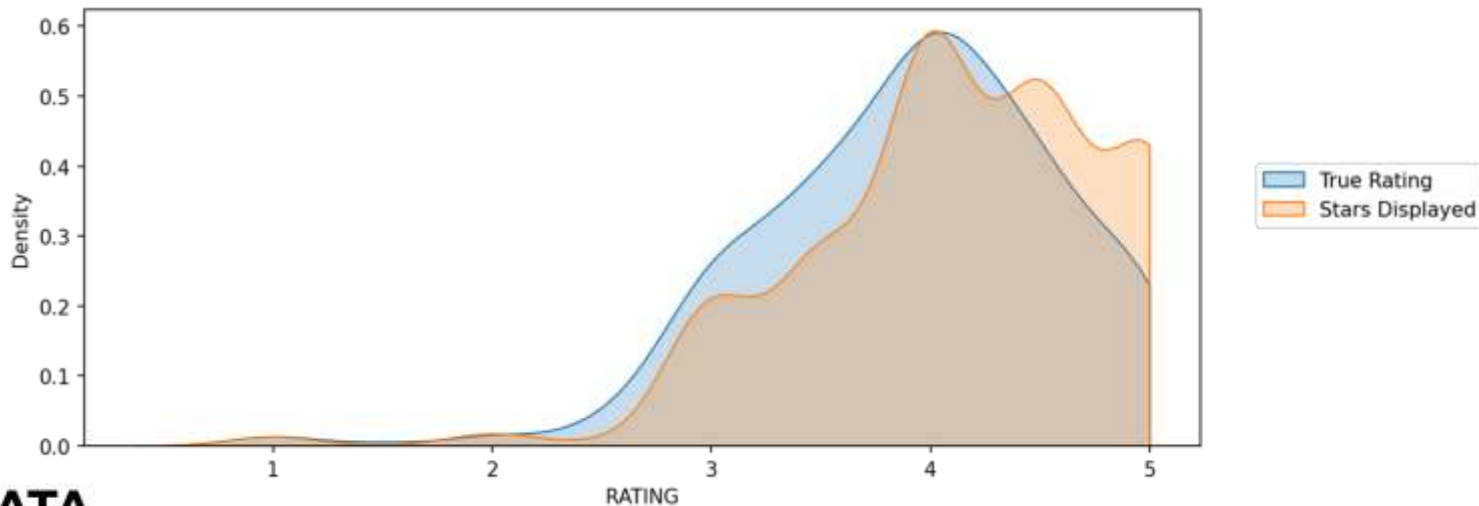
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- Fandango has two ratings:
 - STARS
 - Rating in stars 0-5 displayed on their website's HTML.
 - RATING
 - Actual true rating numerically shown on movie's page.



Capstone Project

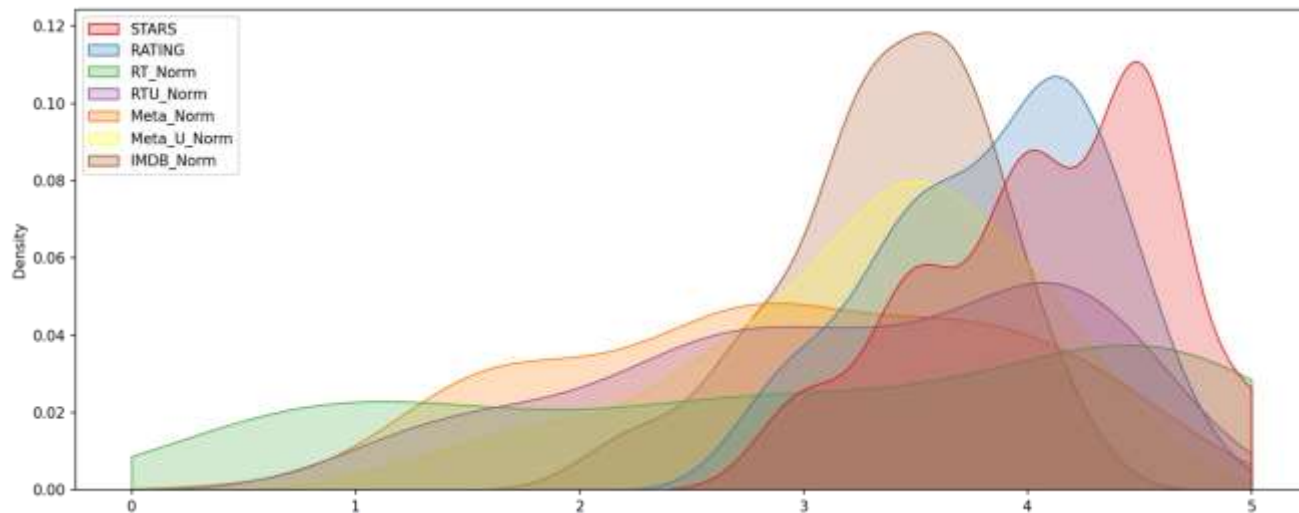
- Fandango has two ratings:
 - First we will compare these ratings to check for discrepancies.





Capstone Project

- Then we'll compare Fandango's ratings to other rating website scores:





Capstone Project

- Let's have an overview of the project exercise notebook!



Capstone Project Solutions - Part One



Capstone Project Solutions - Part Two



Capstone Project Solutions - Part Three