USER ENGAGEMENT ANALYSIS
FOR RESTAURANT SUCCESS

Agenda-

PROBLEM STATEMENT

In a competitive market like the restaurant industry, understanding the factors that influence business success is crucial for stakeholders. utilizing the yelp dataset, this project aims to investigate the relationship between user engagement(reviews,tips ,and check-ins) and business success metric (review, count, ratings)for restaurant

RESEARCH OBJECTIVE

1 -QUANTIFY THE CORRELATION BETWEEN USER ENGAGEMENT(REVIEWS,TIPS,CHECKINS) AND REVIEW COUNT/AVERAGE STAR RATINGS: THIS WILL HELP US DETERMINE IF RESTAURANT WITH HIGHER USER ENGAGEMENT EXPERIENCE A CORRESPONDING INCREASE IN REVIEWS AND RATINGS

2 -ANALYZE THE IMPACT OF SENTIMENT ON REVIEW COUNT AND AVERAGE STAR RATING: WE WILL INVESTIGATE IF POSITIVE SENTIMNET IN REVIEWS AND TIPS TRANSLATES TO HIGHER STAR RATINGS AND POTENTIALLY INFLUENCES THE TOTAL NUMBER OF REVIEWS LEFT.

3 -TIME TRENDS IN USER ENGAGEMENT: WE WILL EXPLORE IF CONSISTENT USER ENGAGEMENT OVER TIME IS STRONGER INDICATOR OF LONG-TERM SUCCESS COMPARED TO SPORADIC BURSTS OF ACTIVITY

Hypothesis Testing

Higher levels of user engagement(more review,tips and check-ins) correlate with higher review counts and ratings for restaurant

positive sentiment expressed in reviews and tips contributes to higher overall ratings and review counts for restaurants

consistent engagement over time is positively associated with sustained business success for restaurants

Data Overview

- THIS DATASET IS A SUBSET OF YELP AND HAS INFORMATION ABOUT BUSINESSES ACROSS 8 METROPOLITAN AREAS IN THE USA AND CANADA.

- THE ORIGINAL DATA IS SHARED BY YELP AS JSON FILES.

- THE FIVE JSON FILES ARE BUSINESS, REVIEW, USER, TIP AND CHECKIN.

- THE JSON FILES ARE STORED IN THE DATABASE FOR EASY RETRIEVAL OF DATA.

Analysis And Findings

Out of 150k businesses, 35k are restaurants business and are open. Table showing distribution of business success metrics (review count and average rating):

```
Average Review Count: 104.09778882413438
Minimum Review Count: 5
Maximum Review Count: 7568
Median Review Count: 40.0
```

	business_id
0	MTSW4McQd7CbVtyjqoe9mw
1	CF33F8-E6oudUQ46HnavjQ
2	bBDDEgkFA1Otx9Lfe7BZUQ
3	eEOYSgkmpB90uNA7lDOMRA
4	il_Ro8jwPlHresjw9EGmBg
...	...
34999	wVxXRFf10zTTAs11nr4xeA
35000	sf_oQ62L8UEnOOLf00nNGA
35001	w_4xUt-1AyY2ZwKtnjW0Xg
35002	l9eLGG9ZKpLJzboZq-9LRQ
35003	cM6V90ExQD6KMSU3rRB5ZA

35004 rows × 1 columns

observation - 35k restaurants are open

Analysis And Findings

HIGHEST COUNT

	name	review_count	avg_rating
0	McDonald's	16490.0	1.868702
1	Chipotle Mexican Grill	9071.0	2.381757
2	Taco Bell	8017.0	2.141813
3	Chick-fil-A	7687.0	3.377419
4	First Watch	6761.0	3.875000
5	Panera Bread	6613.0	2.661905
6	Buffalo Wild Wings	6483.0	2.344828
7	Domino's Pizza	6091.0	2.290210
8	Wendy's	5930.0	2.030159
9	Chili's	5744.0	2.514706

HIGHEST RATING

	name	review_count	avg_rating
0	Taqueria La Coyota	7.0	5.0
1	Kincaid's Meat Market	68.0	5.0
2	Hole in One Donuts - Brandon	85.0	5.0
3	Top Out Cafe	21.0	5.0
4	African Naturals	9.0	5.0
5	Uptown Eats	57.0	5.0
6	The Catio Cat Lounge	10.0	5.0
7	Mazzanti's Market	74.0	5.0
8	Mommy Telly's Famous BBQ	14.0	5.0
9	McNally's Tavern - Mayfair	9.0	5.0

Higher ratings do no guarantee a higher review count, or vice versa.

Success of Restaurants is not solely determined by ratings or review counts.

Review count reflects user engagement but not necessarily overall customer satisfaction or business performance.
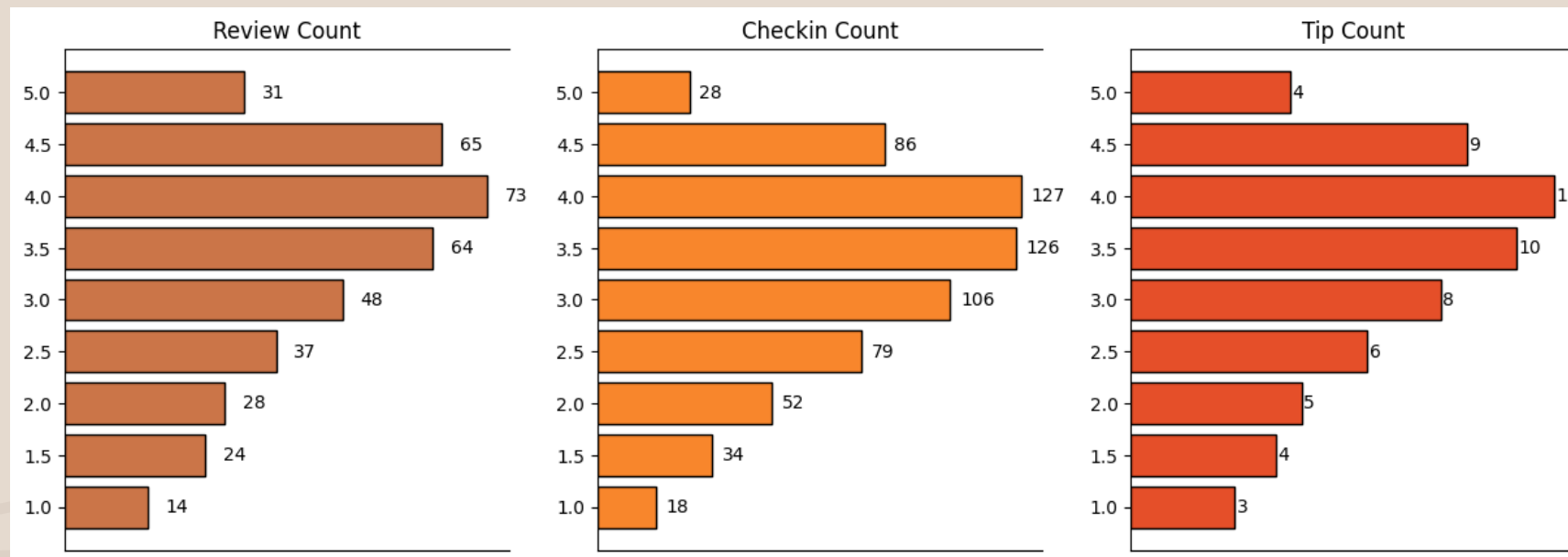
Analysis And Findings

Do restaurants with higher engagement tend to have higher ratings?

Data shows a general increase in average review, check-in, and tip counts as ratings improve from 1 to 4 stars.

Restaurants rated 4 stars exhibit the highest engagement and shows a downward trend for rating above 4.·

The drop in engagement at 5.0 stars might suggest either a saturation point where fewer customers feel compelled to add their reviews, or a selectivity where only a small, satisfied audience frequents these establishments.
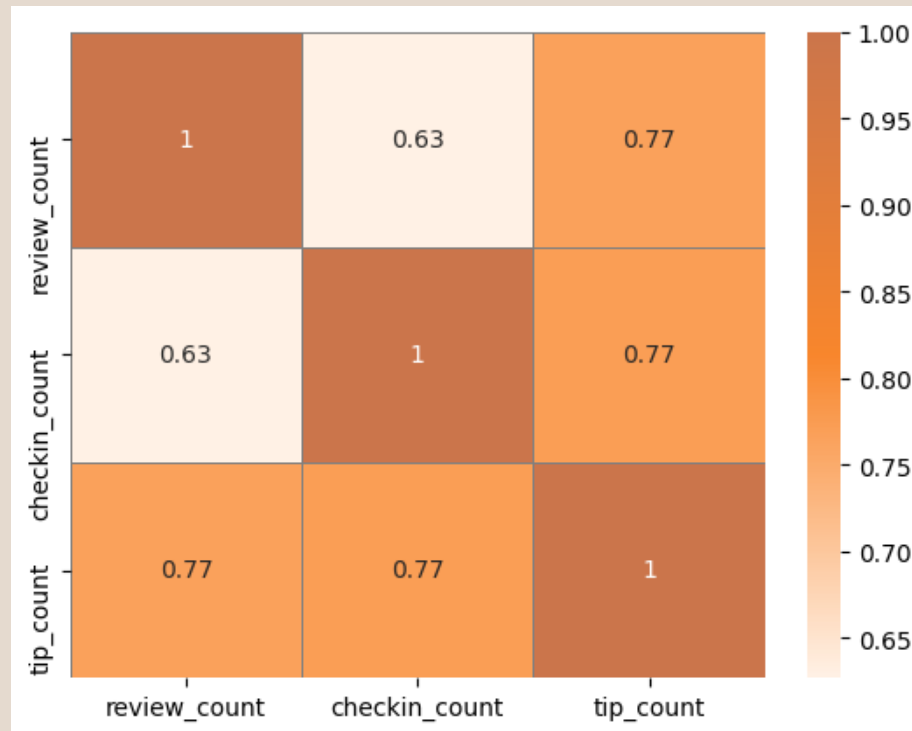
Analysis And Findings

Is there a correlation between the number of reviews ,tips , and check-ins for a business?

These correlations suggest that user engagement across different platforms(reviews, tips, and check-ins) is interlinked; higher activity in one area tends to be associated with higher activity in others.

Businesses should focus on strategies that boost all types of user engagement, as increases in one type of engagement are likely to drive increases in others, enhancing overall visibility and interaction with customers.

Analysis And Findings

Is there a difference in the user engagement between high-rated and low-rated businesses?

Data indicates a clear correlation between higher ratings and increased user engagement across reviews, tips, and check-ins.

This pattern underscores the importance of maintaining high service and quality standards, as these appear to drive more reviews, check-ins, and tips, which are critical metrics of customer engagement and satisfaction.

category	review_count	tip_count	checkin_count
High-Rated	72.291062	10.162766	122.066641
Low-Rated	42.123420	6.541689	88.880828

Analysis And Findings

How do the success metrics of restaurants vary across different states and cities?

Philadelphia emerges as the top city with the highest indicating a combination of high ratings and active user engagement.

Following Indianapolis, and Tucson rank among the top cities with significant success scores, suggesting thriving restaurant success score, Philadelphia, Tampa, Indianapolis, and Tucson rank among the top cities with significant success scores, suggesting thriving restaurant scenes in the area.
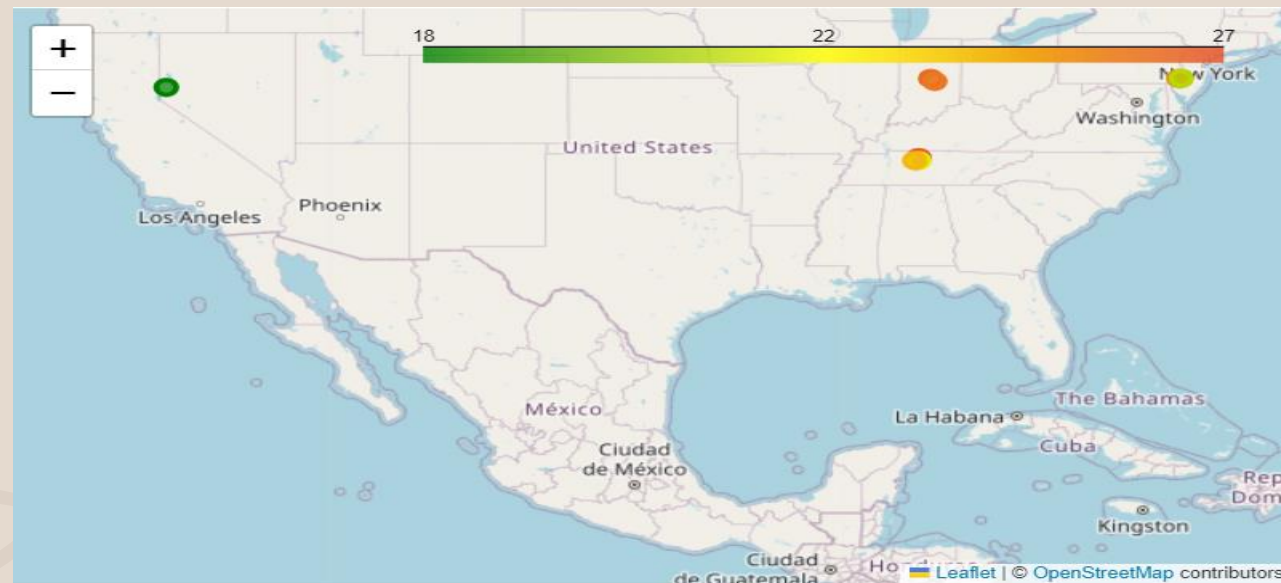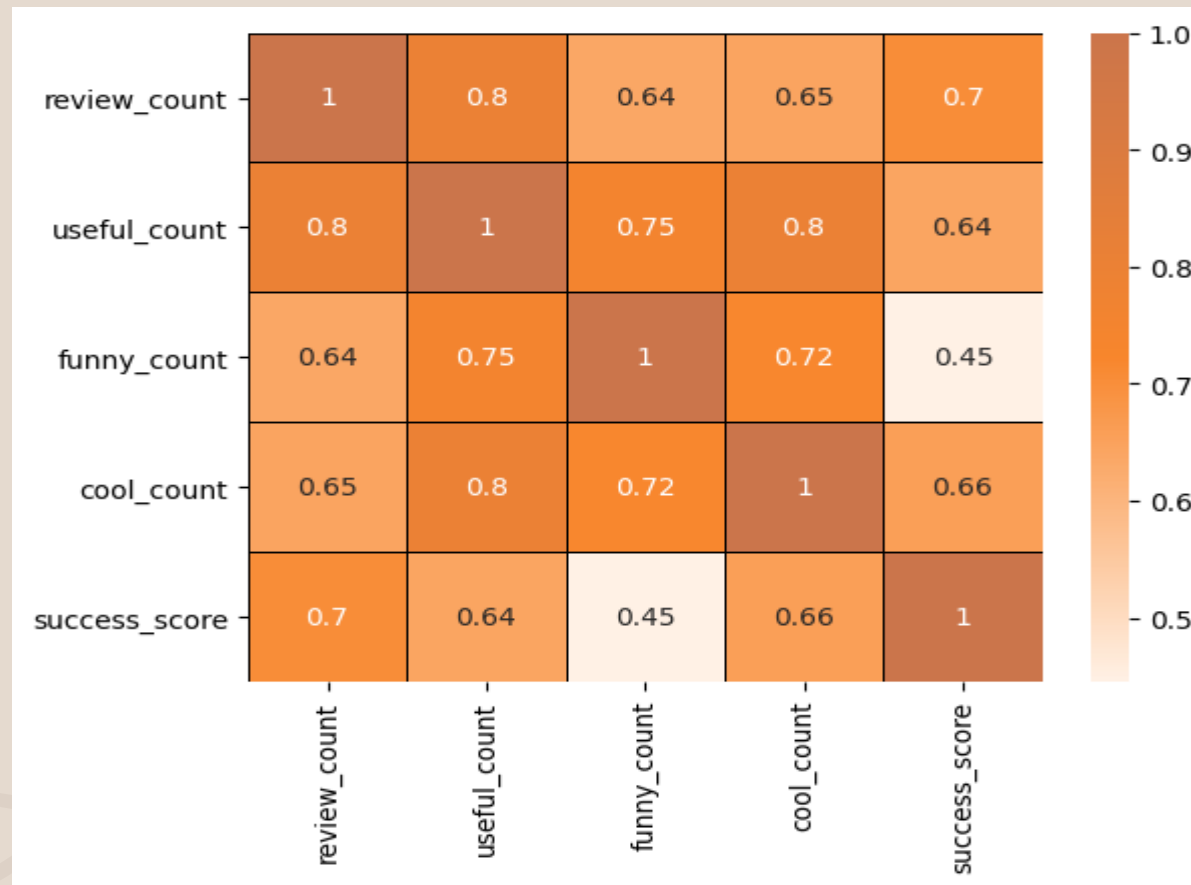
Analysis And Findings

Are there any patterns in user engagement over time for successful businesses compared to less successful ones?
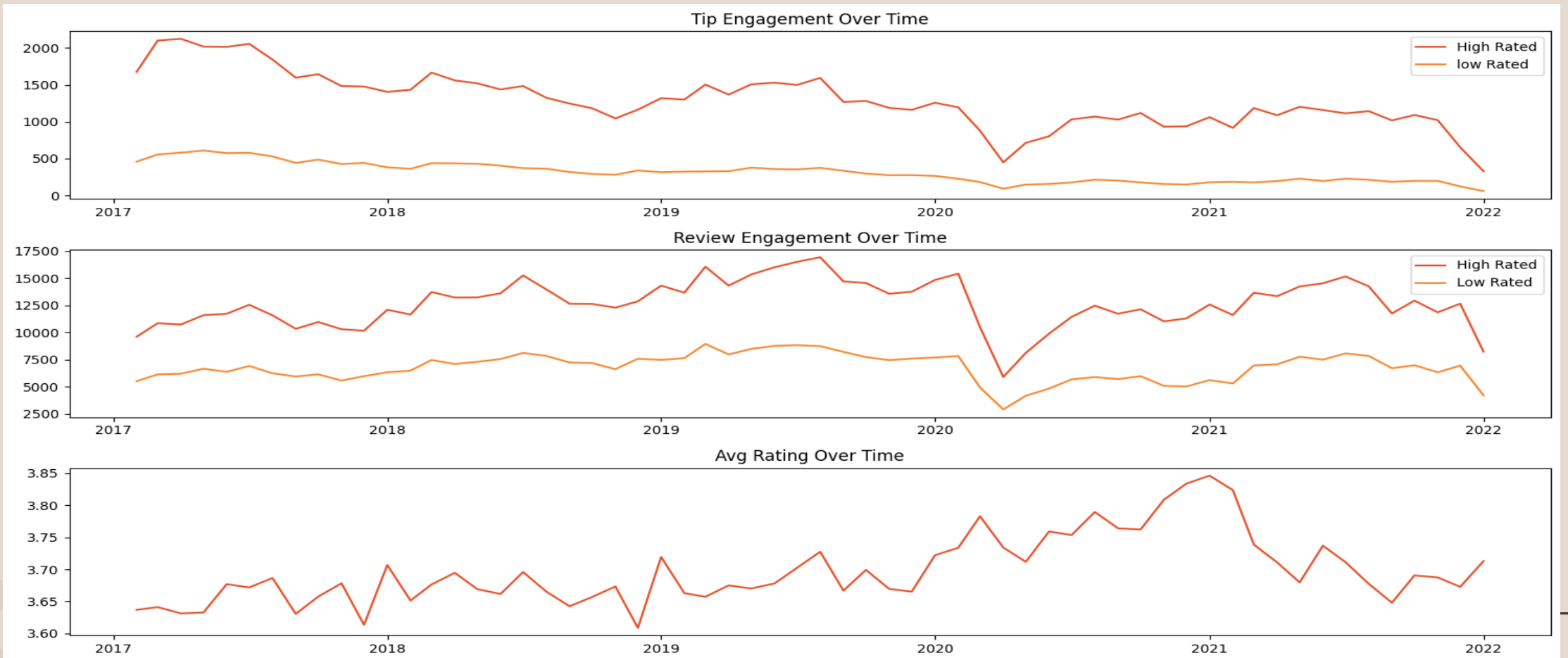
Analysis And Findings

How does the sentiment of reviews and tips (useful, funny,cool) correlate with the success metrics of restaurants?

Recommendations

- Utilizing insights from the analysis of various metrics such as user engagement, sentiment of reviews, peak hours, and the impact of elite users, businesses can make informed decisions to drive success.

- Collaborating with elite users and leveraging their influence can amplify promotional efforts, increase brand awareness, and drive customer acquisition.

- Businesses can adjust their operating hours or introduce special promotions to capitalize on the increased demand during peak hours.

- Less successful businesses may need to focus on strategies to enhance user engagement over time, such as improving service quality, responding to customer feedback.

- Cities with high success scores presents opportunities for restaurant chains to expand or invest further.

thank you

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