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Milestone 2 Paper

In the dynamic landscape of business evaluation, determining the success and popularity of enterprises is crucial for stakeholders ranging from investors to consumers. This paper proposes a set of metrics to classify businesses into categories of "successful" and "popular." The metrics consider various factors such as review ratings and check-ins, aiming to provide a comprehensive assessment.

Successful Metrics:

ReviewRating (Average Rating): The primary variable; ReviewRating returns the average rating which is an obvious indicator of a business getting high satisfaction ratings. A higher review rating can signify better business performance.

ReviewCount: The secondary variable, not weighed in the metric but considered; ReviewCount returns the number of reviews shows its levels of engagement within a business. A higher review count generally indicates greater customer interaction and interest in the business.

A business is considered successful if:

The reviewRating is higher than **3.5**, indicating generally positive feedback from customers.

The reviewCount is secondary but not factored in the query, mainly to reflect significant customer engagement interest in the business.

Query Example:

```
SELECT name,reviewrating,reviewcount FROM business WHERE reviewrating > 3.5 AND zipcode=85283
ORDER BY reviewrating DESC;
```

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The query above returns a table containing all of the businesses in zipcode 85283 we are classifying as successful. The table contains all of the businesses that have a **reviewrating** or average rating greater than 3.5 while displaying the businesses with their respective names, reviewrating, and reviewcounts from greatest reviewrating to lowest for more successful businesses.

Popular Metrics:

NumCheckIns: The primary effecting variable; is the number check-ins at a business location shows a strong indicator of its popularity among consumers. Higher check-in rates imply a larger customer base and a lot more traffic.

ReviewCount: The secondary and non-affecting variable; reviewCount contributes to popularity, it's provided for consideration but is not weighted. This is to ensure that businesses with fewer reviews, but high check-in rates aren't overlooked.

Comparison with Local Averages: Popularity metrics are contextualized by comparing a business's check-in with its respective average within its category and location. This ensures a fair assessment relative to local market conditions.

A business is considered popular if:

The number of check-ins is highgher than the average check-ins for that business category in the respective zipcode is met or exceeded, suggesting above-average popularity within its local market.

Sub query example for calculating average numCheckIns:

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CS 451
Milestone 2 Paper

SELECT AVG(numCheckins) AS avgNumCheckins **FROM** business **WHERE** business_Id **IN** (**SELECT** business_id **FROM** categories **WHERE** business_id **IN** (**SELECT** business_id **FROM** business **WHERE** zipcode=85283) **AND** category='Fast Food');

The query above is the subquery used in our query for the table of businesses we are classifying as popular for a given zipcode and category. The query above is necessary to get the average number of checkins for a given zipcode and category which in this case are 85283 and 'Fast Food' respectively

Query Example for popular businesses:

SELECT name,numCheckins,reviewCount **FROM** business **WHERE** business_id **IN** (SELECT business_id **FROM** categories **WHERE** business_id **IN** (SELECT business_id **FROM** business **WHERE** zipcode=85283) **AND** category='Fast Food') **AND** numCheckins >= (**SELECT** A**VG**(numCheckins) **AS** avgNumCheckins **FROM** business **WHERE** business_Id **IN** (**SELECT** business_id **FROM** categories **WHERE** business_id **IN** (**SELECT** business_id **FROM** business **WHERE** zipcode=85283) **AND** category='Fast Food')) **ORDER BY** numCheckins **DESC**;

The query above is used to get the table containing all of the businesses we are classifying as popular for a given zipcode and category which in this case are 85283 and 'Fast Food' respectively. The query first executes the subquery which gets the average number of checkins for a given zipcode and category as avgNumCheckins and then finds the businesses in the same zipcode and category which have a number of checkins greater than or equal to the average.

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In conclusion, the metrics provide a balanced framework for classifying businesses based on their success and popularity. By considering both qualitative (review ratings) and quantitative (check-ins) factors, stakeholders can gain insights into the performance and appeal of businesses within their respective markets.