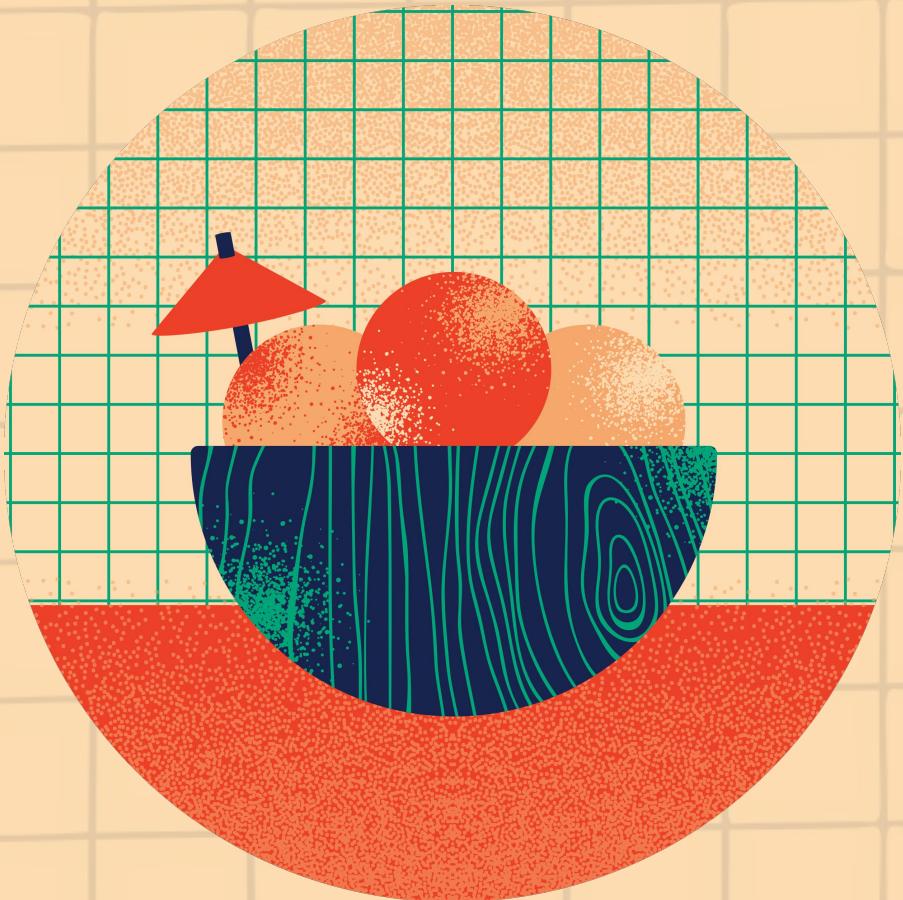


Team: SplitDiff

Receipt Database

Group 4: Andriy Luchko, Bryan Li,
Eric Zhang, Romeo Hong

Why and uses



Tracking Spending

Details on expenditure



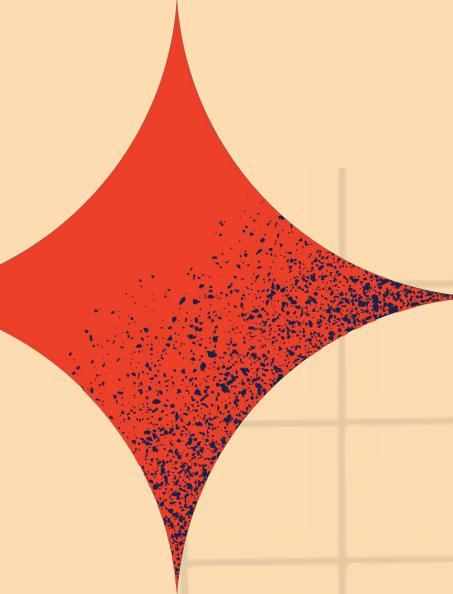
Splitting costs

Finance tracking
between people

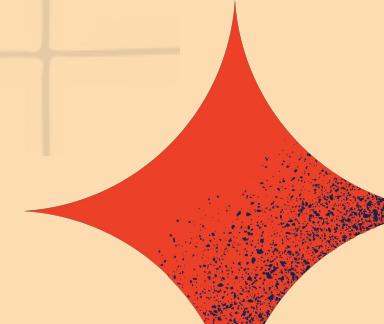


Restaurant Stats

Restaurant / Item
popularity

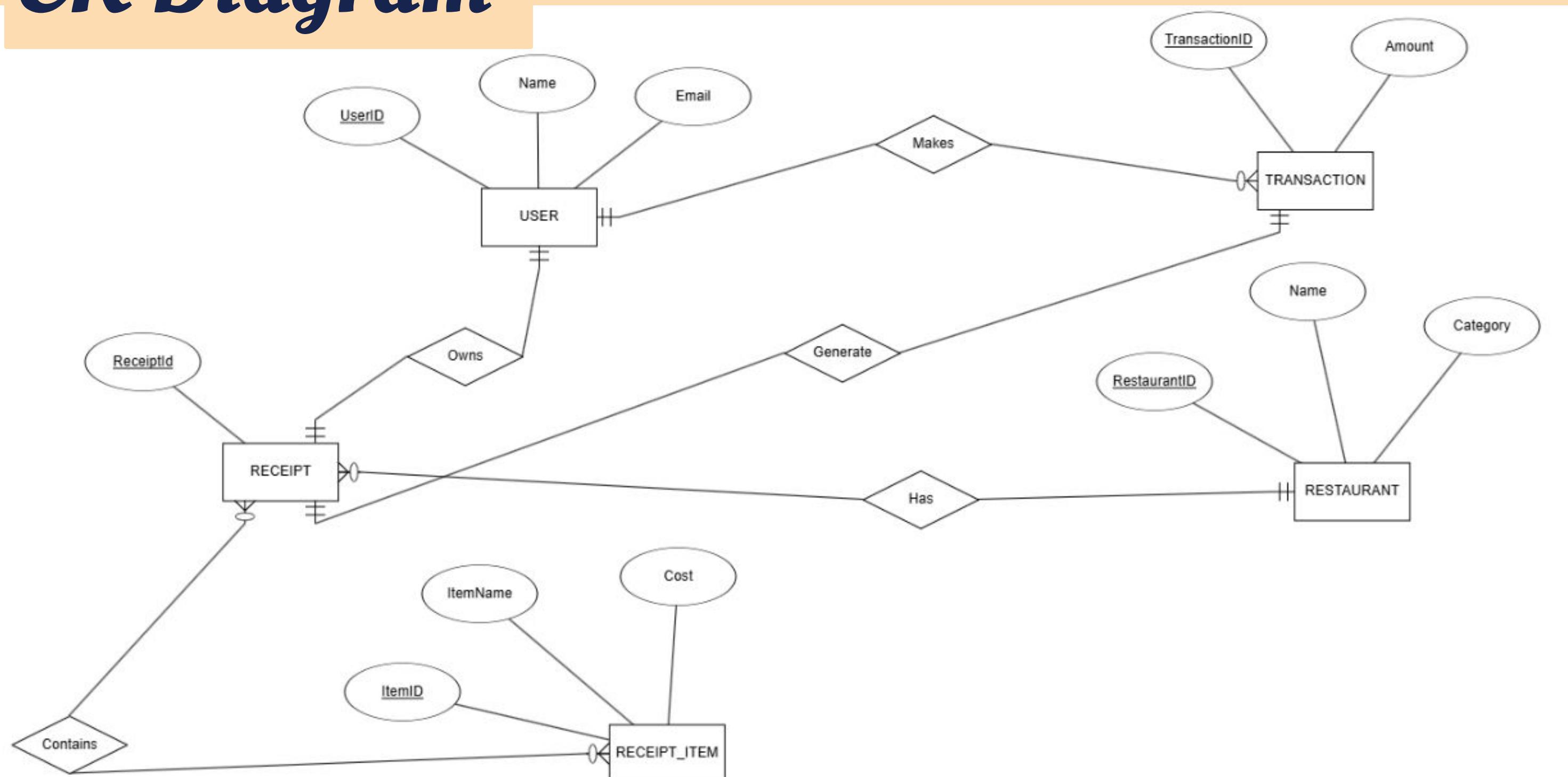


Set of Database Requirements

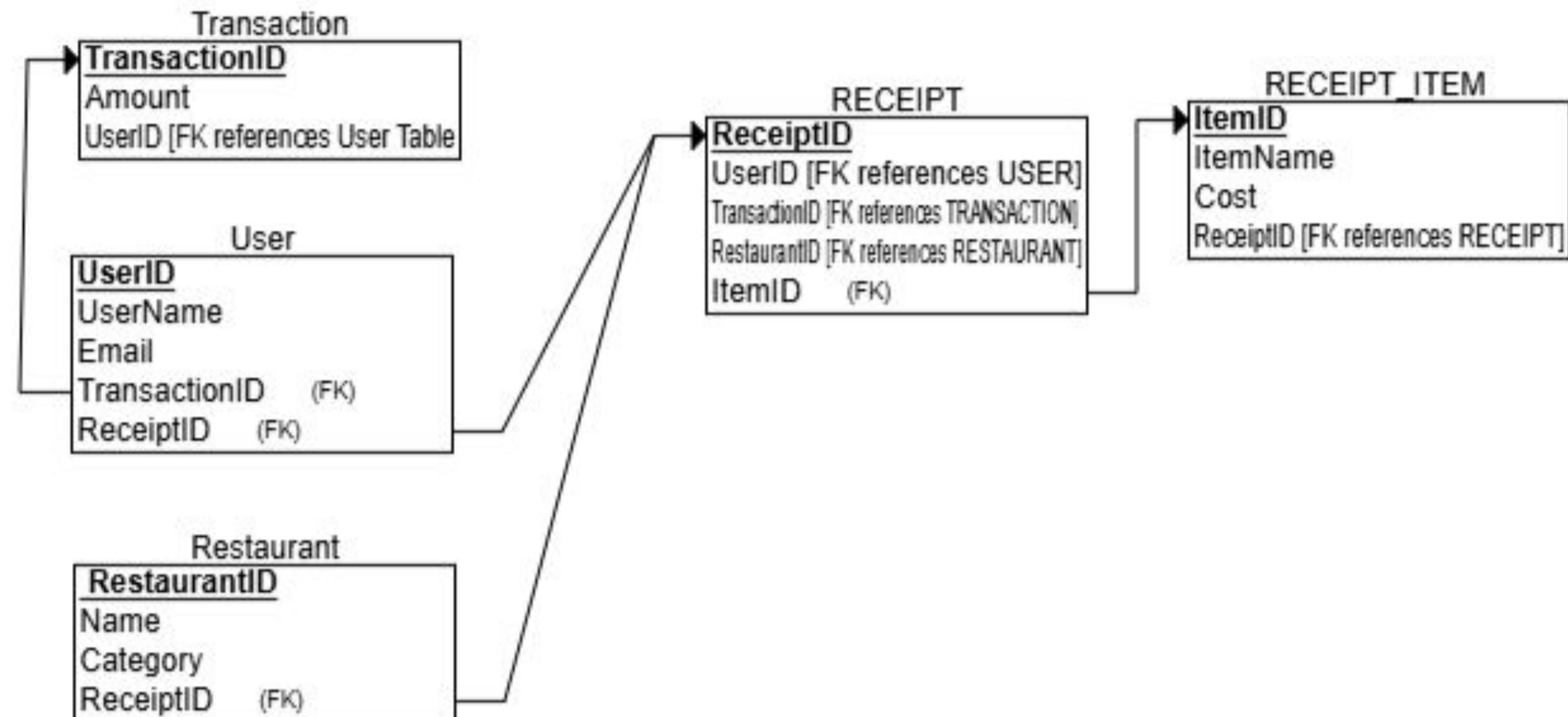


- For each user, user id(unique), user name, email
- For each restaurant, restaurant id(unique), restaurant name, restaurant category
- For each receipt, receipt id(unique)
- For each receipt item, cost, item name
- For each transaction, transaction id(unique), amount
- Each receipt must be associated with exactly one restaurant, A restaurant can own zero or many receipts
- Each receipt must be owned by exactly one user, A user can have zero or many receipts
- Each receipt can contain multiple receipt items, Each receipt item can be associated with multiple receipts
- Each transaction must be associated with exactly one user, A user can have zero or many transactions

ER Diagram



Relational Schema



Indexes

Index 1

Restaurant Table - Index on the Restaurant's name for faster searching by restaurant name

```
CREATE INDEX idx_restaurant_name ON Restaurant(RestaurantName);
```

Index 2

Transaction Table - Index on the Transaction amount for faster access to transactions by amount

```
CREATE INDEX idx_transaction_amount ON Transaction_proj(Amount);
```

Index 3

Receipt table - Composite index on UserID and TransactionID for faster access to user's transactions

```
CREATE INDEX idx_receipt_user_transaction ON Receipt(UserID, TransactionID);
```



Query #1 - Total number of visits at each restaurant

```
SELECT u.UserID, u.UserName, r.RestaurantName, COUNT(*) AS NumberOfTimesVisited  
FROM  
    Receipt rc  
JOIN  
    User_proj u  
ON  
    rc.UserID = u.UserID  
JOIN  
    Restaurant r  
ON  
    rc.RestaurantID = r.RestaurantID  
GROUP BY  
    u.UserID, u.UserName, r.RestaurantName;
```

USERID	USERNAME	RESTAURANTNAME	NUMBEROFTIMESVISITED
1	1 Alice	The Fancy Diner	3
2	2 Bob	Quick Bites	1

Query #2 - A users total spending at each restaurant

```
SELECT u.UserID, u.UserName, r.RestaurantName, SUM(ri.Cost_proj) AS TotalSpent  
FROM  
    Receipt rc  
JOIN  
    User_proj u ON rc.UserID = u.UserID  
JOIN  
    Restaurant r ON rc.RestaurantID = r.RestaurantID  
JOIN  
    Receipt_Item ri ON rc.ReceiptID = ri.ReceiptID  
GROUP BY  
    u.UserID, u.UserName, r.RestaurantName
```

USERID	USERNAME	RESTAURANTNAME	TOTALSPENT
1	1 Alice	The Fancy Diner	126.49
2	2 Bob	Quick Bites	12.5

Q&A

