Service Name: eBay Data

Purpose

- Isolate all applications from direct access to the eBay database. Provide all needed business functionality.

eBay's Star Ranking Explanation

On the eBay website, every seller has a star ranking. For every seller's feedback, the buyer rates the seller through a star ranking system. The buyer has three options to rate the seller: positive, neutral, and negative experience. For each positive rating, the seller receives 1 star. A negative review decreases the sellers' star by 1. Figure 1 shows eBay's star ranking guide.

Figure 1: Star Ranking Guide

Yellow star (⭐) = 10 to 49 ratings

Blue star (⭐) = 50 to 99 ratings

Turquoise star (⭐) = 100 to 499 ratings

Purple star (⭐) = 500 to 999 ratings

Red star (⭐) = 1,000 to 4,999 ratings

Green star (⭐) = 5,000 to 9,999 ratings

Yellow shooting star (🌠) = 10,000 to 24,999 ratings

Turquoise shooting star (🌠) = 25,000 to 49,999 ratings

Purple shooting star (🌠) = 50,000 to 99,999 ratings

Red shooting star (🌠) = 100,000 to 499,999 ratings

Green shooting star (🌠) = 500,000 to 999,999 ratings

Silver shooting star (🌠) = 1,000,000 ratings or more

Database Used

- EBAY (Read, update, insert, delete)

- In the database, we added a new attribute called StarRank in the Seller entity. StarRank counts the total number of the seller's stars. See figure 1 and 2 for an updated schema and entity.
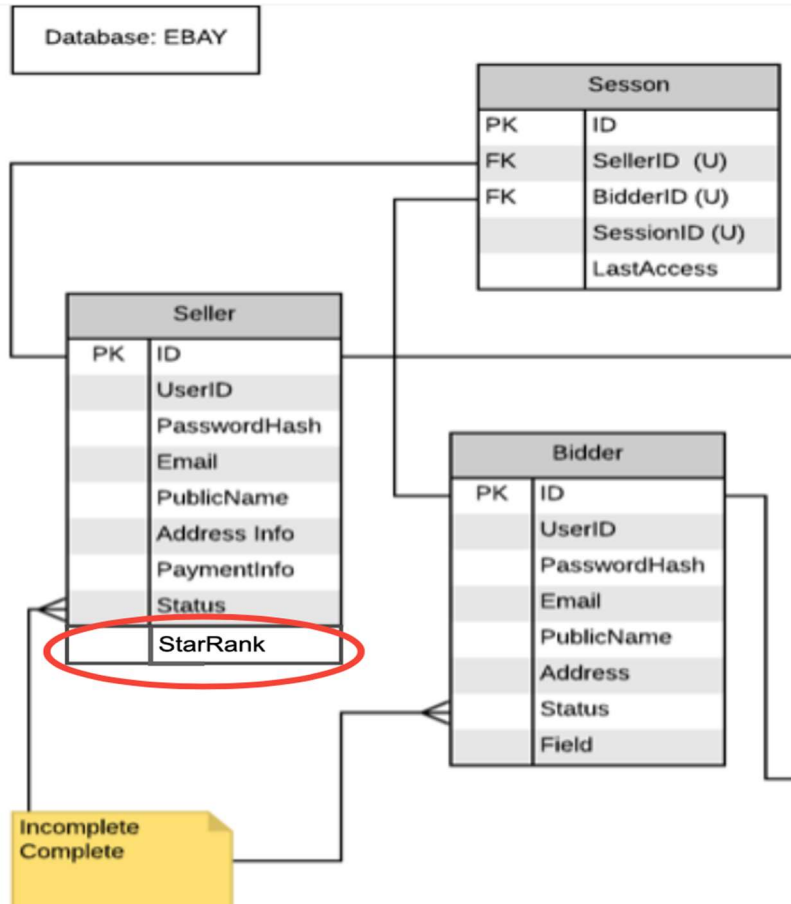
Figure 2: Updated eBay Database Schema

Figure 3: Updated Seller Entity

Basic Database ER Diagram (Crow's Foot)

Sheung Him Martin Chow | April 19, 2020

Seller	
PK	ID
	UserID
	PasswordHash
	Email
	PublicName
	AdressInfo
	PaymentInfo
	Status
	StarRank

New External Synchronous, Point to Point API Calls:

- InsertReview
    - When a review is inserted, StarRank takes the review and updates it according to the eBay's protocols explained in StarRank.
- FindStarRanking
    - It finds the star ranking of the auction's seller by entering the AuctionID and retrieving the ranking to the user.

New Internal Synchronous Point to Point API Calls:

- StarRankUpdate
    - StarRank updates after a new review is inserted. It updates the seller's starRank by adding 1, 0, or -1 to the current starRank.

Selected API Details:

InsertReview

When a review is inserted, StarRank takes the review and updates it according to the eBay protocols explained in StarRank.This is intended to be used by the bidders.

In most cases, members receive:

- +1 point to your Feedback Score for each positive comment and rating left for you.
- No points for a neutral comment and rating left for you.
- -1 point to your Feedback Score for each negative comment and rating left for you.

        InsertReview {AuctionID <string> , Numofstar <int> , description <string>}
                {reply: "Success, Rank +1"}
                {reply: "Success, Rank -1"}
                {reply: "Success, Rank + 0"}
                {reply: "Invalid Review"}

~~StarRankUpdate~~

~~StarRank is the number of positive reviews after subtracting the number of negative reviews. StarRank updates after a new review are inserted. InsertReview receives the reviews from the user, then StarRank updates the ranking number. Finally, the user receives the updated ranking through FindStarRanking by entering the AuctionID.~~

- ~~StarRankUpdate{AuctionID <string> , Numofstar, <int> , description <string>}~~
        ~~{reply: "Success, updated starRank"}~~
        ~~{reply: "Invalid Update"}~~

FindStarRanking

It finds the star ranking of the auction's seller by entering the AuctionID and retrieving the ranking to the user. It returns the seller's public name, email address, and star rank. This is intended to be used by the bidders and buyers.

        FindStarRanking {AuctionID: <string>}
                {reply: "success", ~~publicName : < string>, email : <string>,~~ starRank <integer>}
                {reply: "InvalidAuctionID"}

Advantages
- The system does not need to calculate starRanking every time a buyer is looking for it

● The amount of the user's review does not affect the search time

Disadvantages
● Adding a review requires more steps for the database. When a buyer submits a new review, we need to update the star ranking
● We need to store more information about the seller