**Justification for normalized relational schemas**

Our original ER model was lacking in detail and after talking with the TA we decided that we needed some restructuring. We decided to start fresh with a new model that encapsulates data in a more intuitive way. We spent a few hours really thinking about each entity and relation in the model and removing anything that wasn’t necessary. The nice thing about this restructuring is that we could make our schema in third normal form from the start, encapsulating data in the entity that is most

Here are the relations with explanations

**User:**

The user entity has 5 attributes, ‘email’ is the primary key of the entity. We decided to use email as the primary attribute because that’s how you sign in to amazon. Users don’t have unique username

**Buyer:**

The buyer entity has email as its primary key referenced from amazonuser. Every buyer also has his unique b\_id.

**Seller:**

The seller relation is used to store information about a vendor on Amazon. The primary key is also email referenced from amazonuser. Every seller has his unique s\_id

**Purchase**:

The purchase entity is used to encapsulate all aspects of a transaction on Amazon. It has its own key p\_ID, but to know all the details of the purchase, it requres b\_ID and s\_ID along with p\_ID.

**Feedback:**

Seller feedback is the second point of interaction between sellers and buyers in our database. f\_ID, s\_ID and b\_ID can determine rating and comment attributes of feedback table. Each feedback element can be made by at most one customer and is given to at most one seller.

As you can see, we made all our entities in this new model in third normal form. No attribute in any entity depends on any other attribute besides the primary key. By using third normal form, our group found that we were better able to understand how our database would be used by admins, customers and sellers alike. By reducing the complexity of individual entities and instead gaining utility from various join tables, we are able to create a database that can be used for powerful data analytics in an intuitive way.