NANYANG TECHNOLOGICAL UNIVERSITY
SINGAPORE

CZ2005: INTRODUCTION TO DATABASES

LAB-1 REPORT

SS2 Group 4:

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Assumptions:

- Each complaint is handled by one employee. However, one employee can handle more than one complaint.
- Every product will have a unique product ID (PID).
- Every Ordered item has an Ordered Item ID (OIID) value are unique across different stores.
- One order may contain many products which have different delivery dates, some items might get processed and delivered first as compared to some other product.
- Every Review has a Review ID (RID) that is only unique for the same user but not among other users.
- Users are not allowed to give a rating or make a complaint unless they have made an order for that particular product.
- All complaints will be tagged to a unique complaint ID (CID) such that Sharkee is able to locate the number of complaints made by a certain user
- Price of the product is always updated under price records.
- Once a transaction is made for an order, the timestamp is recorded when that transaction is made.

1) a. 'Shops' are an entity set with a key attribute of 'Name'. Entity set 'Products' has a key attribute of the product's 'PID'. Other attributes of 'Products' include its category, maker, and the quantity in stock, etc. 'Shops' and 'Products' entity sets have a relationship of 'Sell'.
   b. A 'Shop' can sell zero, one or many 'Products'. Therefore, we can deduce that 'Shops' have a many-to-many relationship with 'Products'.
   c. 'Users' and 'Orders' are represented by entity sets, with 'UID' and 'OID' as their keys respectively.
   d. 'Users' have another attribute, name and 'Orders' has attributes including Total Price, Shipping Cost, Shipping Address, Timestamp, Status, etc.
   e. 'Users' can make one or more orders, and each order is linked to only one user. Therefore, 'Users' have a one-to-many relationship with 'Orders'.
2) a. When a 'User' makes an 'Order', they will order one or more items' in their order. These items are instances of 'Products' which we call 'Ordered Items', which have a weak entity (dependent) relationship with 'Products'.
   b.'Ordered Items' has attributes of quantity and price of items, etc. 'Shops' are related to 'Orders' with a relationship 'Receive'.
   c. Since each product has a price record, 'Products' are related to 'Price Records' with a weak entity set. It includes a key attribute of datetime and an attribute, price.
3) a. Users can rate products, hence 'Users' and 'Products' have the relation 'make' and 'has' respectively to the weak entity set 'Review'. Reviews are uniquely identified by 'UID' , 'PID' and the partial key 'RID'. 'Review' also has the attributes 'Comment' and 'Rating'.
4) a. Users can make complaints about their shop/product, hence 'User' is related to 'Complaint' with a relationship of 'Make'. 'Complaint' has a key attribute 'CID' with other attributes being start time, status and stop time.
5) a. Since Sharkee has employees under them, 'Sharkee Employee' is an entity set with a key attribute of 'ID' and their name and monthly salary as attributes. 'Sharkee Employees' handle complaints from the users, therefore 'Sharkee Employee' and 'Complaint' have a relationship of 'Receive'.

b. As each complaint is handled by only one employee, there is a many-to-one relationship between ‘Complaint’ and ‘Sharkee Employee’.
c. Since Users can make complaints about both shops or products, ‘Complaint’ and ‘Shop’ have a relationship of ‘About’, similarly for ‘Complaint’ and ‘Products’

6) a. Our database supports the queries listed in Appendix B.

Individual Contributions:

Diagram:
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