CS 6313.003
eBay 1

Team members:

Ankur Gokhale (AAG180015)

Jayant Bhopale (JHB190002)

Randeep Alahawat (RSA19000)

The University of Texas at Dallas

Outline

- Information and stats about Ebay database

- Functionalities and services provided by Ebay

- Design pattern - EER diagram

- Final relational schema

- Stored Procedures

- Triggers

Information and stats about Ebay database

- On average day, eBay system runs through 26 billion SQL queries

- 182M registered users Ebay

- Built on Oracle databases

- Over 1000 logical databases on ~400 physical hosts

- Every database has at least 3 on-line databases. Distributed over 8 data centers

- Over one billion page views per day

Functionalities and services provided by Ebay

User Account

Functionalities and services provided by Ebay

Buy item/ Bid on item

Functionalities and services provided by Ebay

Sell Products

Functionalities and services provided by Ebay

Purchase History

ORDER DATE
Sep 06, 2015

1 item sold by watchesplus11

ORDER TOTAL
US $154.92

Free shipping

Leave feedback

View order details

More actions ▼

SPECIAL BRAND NEW G SHOCK WITH TAGS!! GA1000-9G Men's G-Aviation Black Classic
(171917528093)

$ 📦 ⁎ ✉

ITEM PRICE:
US $154.92

✅ Delivered on **Thu, Sep 10**

Tracking number: **9400109699937885734003**

ORDER DATE
Aug 21, 2015

1 item sold by hotnessfeet215

ORDER TOTAL
US $144.95

See description

View similar items

View seller's other items

More actions ▼

Nike Air Max2 CB '94 Charles Barkley Black Purple OG 305440-006 MEN Size: 7.5-13
(221854085671)

ITEM PRICE:
US $144.95

Design Pattern
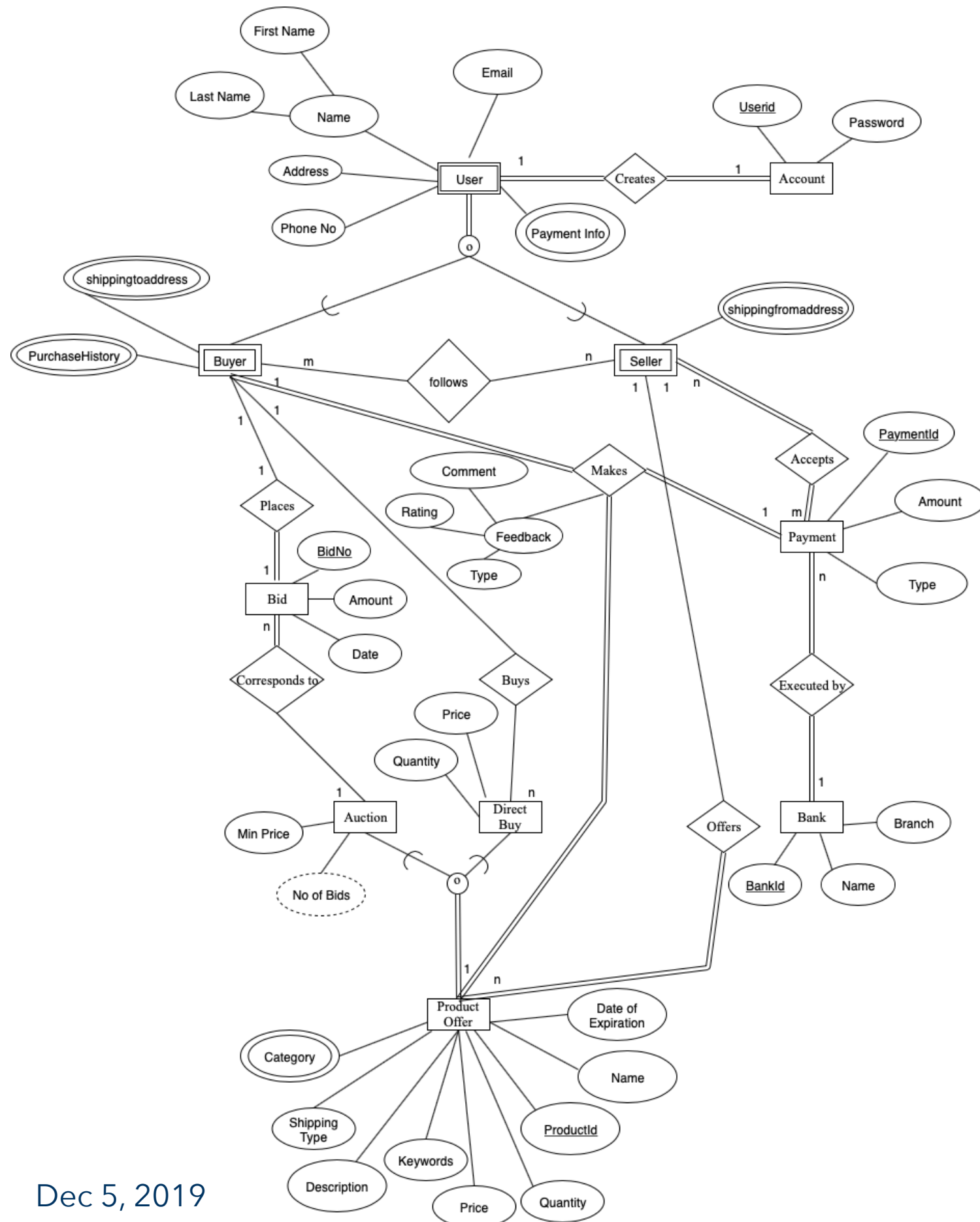
User : Account (1 : 1)

Buyer : Bid (1 : 1)

Bank : Payment (1 : n)

Auction : Bid (1 : n)

Buyer : Seller (m : n)

Seller : Payment (m : n)

Final Relational Schema

ACCOUNT

USERID	PASSWORD

PRIMARY KEY: USERID

EBAY_USER

USER_ID	FNAME	PHONE_NO	LNAME	ADDRESS	PAYMEN_INFO	EMAIL

PRIMARY KEY: USER_ID

FOREIGN KEY: USER_ID ON ACCOUNT(USER_ID)

SELLER

SELLER_USER_ID	SHIPPINFROMADDRESS	USER_ID

PRIMARY KEY: SELLER_ID

FOREIGN KEY: SELLER_USER_ID ON ACCOUNT(USER_ID)

BUYER

BUYER_USER_ID	SHIPPINGTOADDRESS	FOLLOWING LIST	USERID

PRIMARY KEY: BUYER_USER_ID

FOREIGN KEY: BUYER_USER_ID ON ACCOUNT (USER_ID)

Final Relational Schema

PRODUCT OFFER

PRODUCT_ID	PNAME	DATE_OF_ EXP	KEYWORD	CATEGORY	DESCRIPTION	SELLER_USER_ID

PRIMARY KEY: PRODUCT_ID, SELLER_USER_ID

FOREIGN_KEY: USER_ID

AUCTION

MIN_PRICE	NO_OF_BIDS	PRODUCT_ID	SELLER_USER_ID

FOREIGN KEY: (PRODUCT_ID,SELLER_USER_ID) ON

PRODUCT_OFFER(PRODUCTID, SELLER_USER_ID)

DIRECT BUY

QUANTITY	PRICE	PRODUCT_ID	SELLER_USER_ID

FOREIGN KEY: (PRODUCT_ID,SELLER_USER_ID) ON

PRODUCT_OFFER(PRODUCTID, SELLER_USER_ID)

Final Relational Schema

BID

BID_NO	AMOUNT	DATE	PRODUCT_ID	SELLER_USER_ID

PRIMARY_KEY: BID_NO,PRODUCT_ID

FOREIGN KEY: (PRODUCT_ID,SELLER_USER_ID) ON

PRODUCT_OFFER(PRODUCTID, SELLER_USER_ID)

PAYMENT

PAYMENT_ID	AMOUNT	PAYMENT_TYPE	USER_ID

PRIMARY_KEY: (PAYMENT_ID, USER_ID)

FOREIGN KEY: USER_ID ON ACCOUNT(USER_ID)

BANK

BANK_ID	B_NAME	BRANCH	PAYMENT_ID	USER_ID

PRIMARY KEY (BANK_ID),

FOREIGN KEY(PAYMENT_ID, USER_ID) REFERENCES PAYMENT(PAYMENT_ID, USER_ID)

Stored Procedures

A stored procedure is created to get the **average rating of seller.**

```
CREATE PROCEDURE Get_avg_rating (seller_id    IN  CHAR,
                                 seller_fname OUT CHAR,
                                 seller_lname OUT CHAR,
                                 avg_rating   OUT INT)
AS
BEGIN
    SELECT E.fname,
           E.lname,
           Avg(F.rating)
    INTO   seller_fname, seller_lname, avg_rating
    FROM   ebay_user E,
           feedback F
    WHERE  E.user_id = seller_id
           AND F.seller_user_id = seller_id;
END;
```

Stored Procedures

A stored procedure is created to get the **purchase history of buyer.**

```
CREATE PROCEDURE Get_purchase_history (buyer_id      IN CHAR,
                                       description   OUT CHAR,
                                       name          OUT VARCHAR,
                                       seller_lname  OUT CHAR,
                                       seller_fname  OUT CHAR,
                                       auction_price OUT INT,
                                       direct_price  OUT INT)
AS
BEGIN
    SELECT P.pname,
           P.p_description,
           E.fname,
           E.lname,
           A.min_price,
           D.price
    INTO   name, description, seller_fname, seller_lname,
    auction_price, direct_price
    FROM   product_offer P,
           seller S,
           auction A,
           direct_buy D,
           ebay_user E
    WHERE  P.buyer_user_id = buyer_id
           AND P.seller_user_id = S.seller_user_id
           AND P.productid = A.productid
           AND P.productid = D.productid
           AND P.seller_user_id = E.user_id;
END;
```

Triggers

A trigger is created to validate the **bidding price on product.**
Bid price must be greater than minimum value set by seller.

```sql
CREATE OR REPLACE TRIGGER VALIDATE_BID

AFTER INSERT ON BID
FOR EACH ROW
DECLARE
    PRODUCT_PRICE CHAR(20);
BEGIN
    SELECT MIN_PRICE INTO PRODUCT_PRICE
    FROM AUCTION
    WHERE :NEW.PRODUCTID = AUCTION.PRODUCTID;

    IF :NEW.AMOUNT < PRODUCT_PRICE THEN
        RAISE_APPLICATION_ERROR( -20001,
                        'BID VALUE SHOULD BE GREATER THAN MINIMUM VALUE' );
    END IF;
END;
```
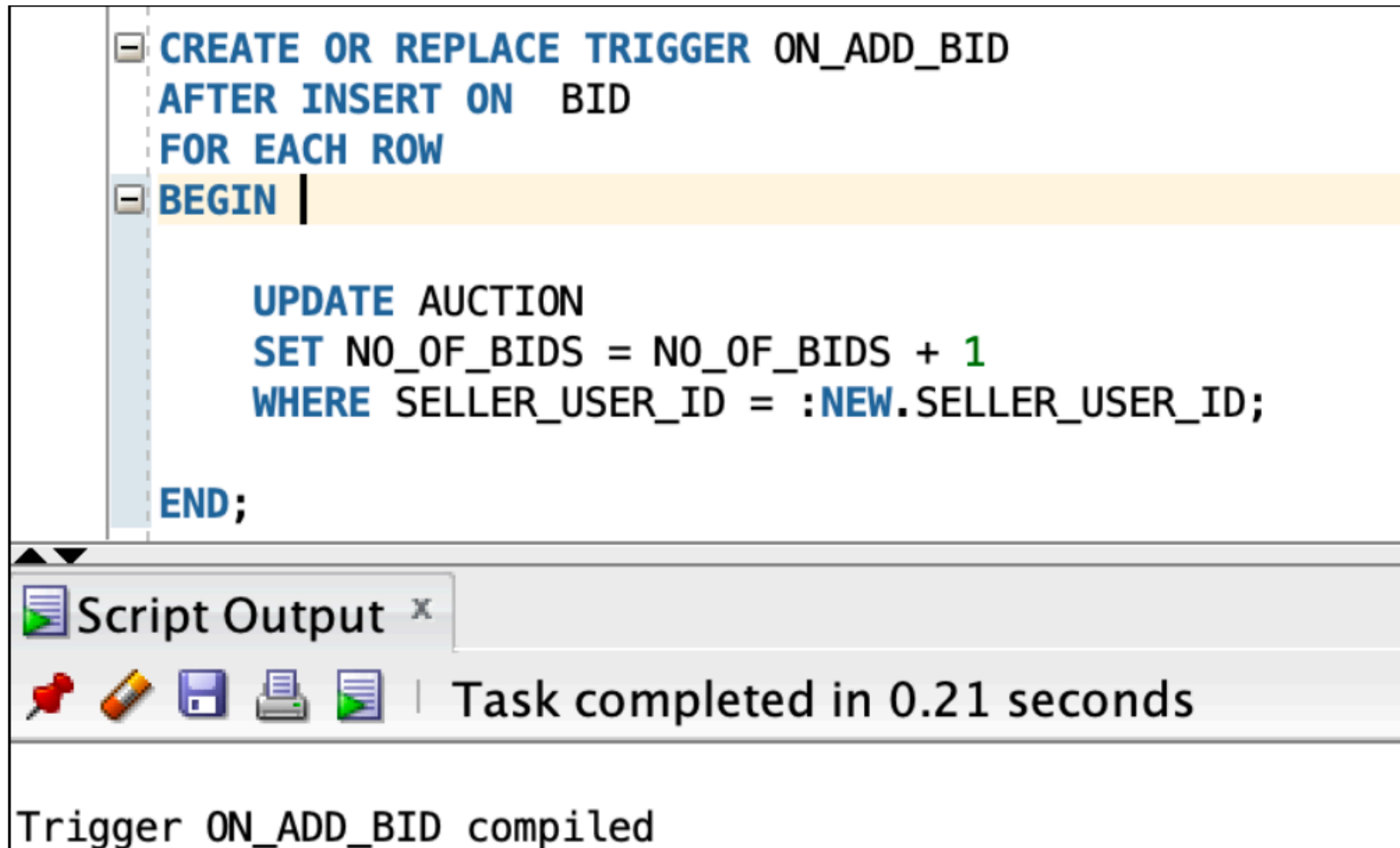
Script Output X

Task completed in 0.228 seconds

Trigger VALIDATE_BID compiled

Triggers

A trigger is created to update number of bids on product when any new buyer places a bid for purchase.

```
CREATE OR REPLACE TRIGGER ON_ADD_BID
AFTER INSERT ON  BID
FOR EACH ROW
BEGIN

    UPDATE AUCTION
    SET NO_OF_BIDS = NO_OF_BIDS + 1
    WHERE SELLER_USER_ID = :NEW.SELLER_USER_ID;

END;
```

Script Output ×

Task completed in 0.21 seconds

Trigger ON_ADD_BID compiled

Thank You!