**Aspect 1: New Product Created by Seller**

1. Create the tables, constraints, and data needed to support new products as described in the use case.

Tables: products, products\_for\_sell, product\_categories, product\_conditions, sellers

1. Develop a parameterized stored procedure that is used when a seller needs to add any new product.

procedure new\_product(

pname in varchar2,

pdescription in varchar2,

pprice in number,

pamount in number,

pcategory in varchar2,

pseller\_email in varchar2,

pcondition in varchar2)

1. A seller adds two new products. The first is a self‐driving video camera which automatically follows a subject that is being recorded. The second is a holographic keyboard that emits a three‐dimensional projection of a keyboard and recognizes virtual key presses from the typist. Invoke the stored procedure twice to add these products, keeping in mind that products have at a minimum a name, description, price, and category.

begin

new\_product(

'self‐driving video camera',

'automatically follows a subject that is being recorded',

25,

1,

'Electronics',

'kasarseller@gmail.com',

'new');

new\_product(

'holographic keyboard',

'that emits a three‐dimensional projection of a keyboard and recognizes virtual key presses from the typist',

16,

1,

'Electronics',

'kasarseller@gmail.com',

'new');

end;

1. A seller is considering developing a new electronic product and requests a list of existing products in the “Computers” or “Electronics” categories that cost $30 or less. Develop and execute a single query that provides this information.

select distinct product\_name, product\_description, category\_name

from products, products\_for\_sell, product\_conditions, product\_categories

where pfs\_condition = condition\_id

and product\_category = category\_id

and pfs\_product = product\_id

and condition\_name = 'new'

and category\_name in ('Computers','Electronics')

and pfs\_price <= 30

**Aspect 2: Amazon Receipt of Product from Seller**

1. Create the tables, constraints, and data needed to support product delivery as described in the use case.

Tables: products, products\_for\_sell, product\_categories, product\_conditions, sellers

1. Develop a parameterized stored procedure that is used when any seller delivers any product to Amazon’s warehouse.

procedure update\_product\_for\_sell(

pname in varchar2,

pprice in number,

pamount in number,

pcategory in varchar2,

pseller\_email in varchar2,

pcondition in varchar2)

1. A seller delivers four each of the two new products added in Aspect 1 (the self‐driving video camera and the holographic keyboard). Invoke the stored procedure twice to update the inventory of these products for a seller of your choosing.

begin

update\_product\_for\_sell('self‐driving video camera',25,4,'Electronics','kasarseller@gmail.com','new');

update\_product\_for\_sell('holographic keyboard',16,4,'Electronics','kasarseller@gmail.com','new');

end;

1. The seller from b above requests a listing of all of its products that have an inventory of 11 or less. Develop and execute a single query that provides this information (the self‐driving video camera and holographic keyboard should be among those listed).

select product\_name, product\_description, category\_name, pfs\_price, pfs\_amount

from products\_for\_sell, products, product\_categories, product\_conditions, sellers

where pfs\_product = product\_id

and product\_category = category\_id

and pfs\_condition = condition\_id

and pfs\_seller = seller\_id

and seller\_email = 'kasarseller@gmail.com'

and pfs\_amount <= 11

**Aspect 3: New Consumer Account**

1. Create the tables, constraints, and data needed to support customer accounts as described in the use case.

Tables: customers, customer\_addresses

1. Develop a parameterized stored procedure that is used when any new customer signs up for a new account on Amazon.

procedure new\_customer(

pusername in varchar2, pfirst\_name in varchar2, plast\_name in varchar2,

pemail in varchar2, pphone in number, ppassword in varchar2,

paddress\_line1 in varchar2, paddress\_line2 in varchar2, pzip\_code in varchar2)

1. You and your facilitator sign up for new accounts on Amazon. Invoke the stored procedure twice to add you and your facilitator as customers.

begin

new\_customer('kasarcustomer', 'Pranjal', 'Kasar', 'kasarcustomer@gmail.com', '5082345678', 'qwerty', '70 Florence Street', 'Worcester, MA', '01610');

new\_customer('facilitator', 'First name', 'Last name', 'facilitator@gmail.com', '5083456789', '123456', '950 Main Street', 'Worcester, MA', '01610');

end;

1. For research purposes, Amazon requests the last names of consumers where there are least 4 accounts associated with the last name. Amazon would like to see the actual number of accounts associated with those last names. Develop and execute a single query that provides this information.

select customer\_first\_name, customer\_last\_name, customer\_email, customer\_phone

from customers

where customer\_last\_name in

(select customer\_last\_name

from customers

group by customer\_last\_name

having count(1)>=4)

Aspect 4: Product Purchase by Consumer

1. Create the tables, constraints, and data needed to support product purchases as described in the use case.

Tables: orders, customers, orders\_purchases, shipping\_speeds, order\_statuses, products, products\_for\_sell, product\_conditions, sellers

1. Develop a parameterized stored procedure that is used when any customer purchases any product.

procedure new\_purchase(

pname in varchar2, pcategory in varchar2, pcondition in varchar2, pamount in number, pspeed in varchar2,

pcustomer\_email in varchar2, pseller\_email in varchar2,

paddress\_line1 in varchar2, paddress\_line2 in varchar2, pzip\_code in varchar2)

1. You purchase a self‐driving video camera (from Aspect 1), and your facilitator purchases three holographic keyboards. Invoke the stored procedure twice, once for each purchase.

begin

new\_purchase('self‐driving video camera', 'Electronics', 'new', 1, 'standard shipping', 'kasarcustomer@gmail.com', 'kasarseller@gmail.com', '70 Florence Street', 'Worcester, MA', '01610');

-- add the second purchase to test

new\_purchase('holographic keyboard', 'Electronics', 'new', 1, 'standard shipping', 'kasarcustomer@gmail.com', 'kasarseller@gmail.com', '70 Florence Street', 'Worcester, MA', '01610');

new\_purchase('holographic keyboard', 'Electronics', 'new', 3, 'standard shipping', 'facilitator@gmail.com', 'kasarseller@gmail.com', '950 Main Street', 'Worcester, MA', '01610');

end;

1. The marketing department at Amazon wants to reach out to consumers who buy popular products. The department requests the names and addresses of all consumers who bought any product that was purchased by at least three different people. Develop and execute a single query that provides this information.

select customer\_first\_name, customer\_last\_name, customer\_email,

listagg(address, '; ') within group (order by address) customer\_addresses

from (

select customer\_first\_name, customer\_last\_name, customer\_email,

order\_address\_line1||' '||order\_address\_line2||' '||order\_zipcode address

from customers, orders, order\_purchases

where customer\_id = order\_customer

and order\_id = purchase\_order

and purchase\_pfs in (select pfs\_product

from order\_purchases, orders, order\_statuses, products\_for\_sell, product\_conditions

where order\_status = status\_id

and status\_name = 'shipped'

and purchase\_order = order\_id

and purchase\_pfs = pfs\_id

and pfs\_condition = condition\_id

and condition\_name = 'new'

group by pfs\_product

having count(distinct order\_customer) >= 3)

group by customer\_first\_name, customer\_last\_name, customer\_email,

order\_address\_line1||' '||order\_address\_line2||' '||order\_zipcode)

group by customer\_first\_name, customer\_last\_name, customer\_email

**Aspect 5: Product Shipment by Amazon**

1. Create the tables, constraints, and data needed to support product shipments as described in the use case.

Tables: orders, order\_statuses

1. Develop a parameterized stored procedure that is used when Amazon ships any order.

procedure order\_shipping(porder\_id in number, ptracking\_id in number)

1. Amazon ships the orders listed in Aspect 4, one to you and the other to your facilitator. Invoke the stored procedure twice, once for each order.

Begin

-- there is no any columns combination that can exactly identify order\_id

-- the table possibly could have several orders for the particular customer that are paid and ready to be shipped

order\_shipping(1, 'ZVA2943758393');

order\_shipping(21,'ZVA2943758394');

end;

1. Here you define you own query. Define a request for information for this aspect that is implemented with either aggregation or with a subquery. Then develop and execute a single query that provides this information.

The customers that have received the maximum amount of shipments.

select customer\_first\_name, customer\_last\_name, customer\_email

from orders, order\_statuses, customers

where order\_status = status\_id

and order\_customer = customer\_id

and status\_name = 'shipped'

group by order\_customer, customer\_last\_name, customer\_first\_name, customer\_email

having count(1) = (select max(count(1))

from orders, order\_statuses

where order\_status = status\_id

and status\_name = 'shipped'

group by order\_customer)