

The logo features the text "ZYMURGY ZONE" in a bold, dark brown, sans-serif font, centered within a white, irregular, cloud-like shape. The background is a solid bright yellow, and a dark brown vertical bar is on the left side.

ZYMURGY ZONE

CRAFT ALES

SQL Database Presentation
by Daniel Flynn
CSC-236-WB Summer 2021

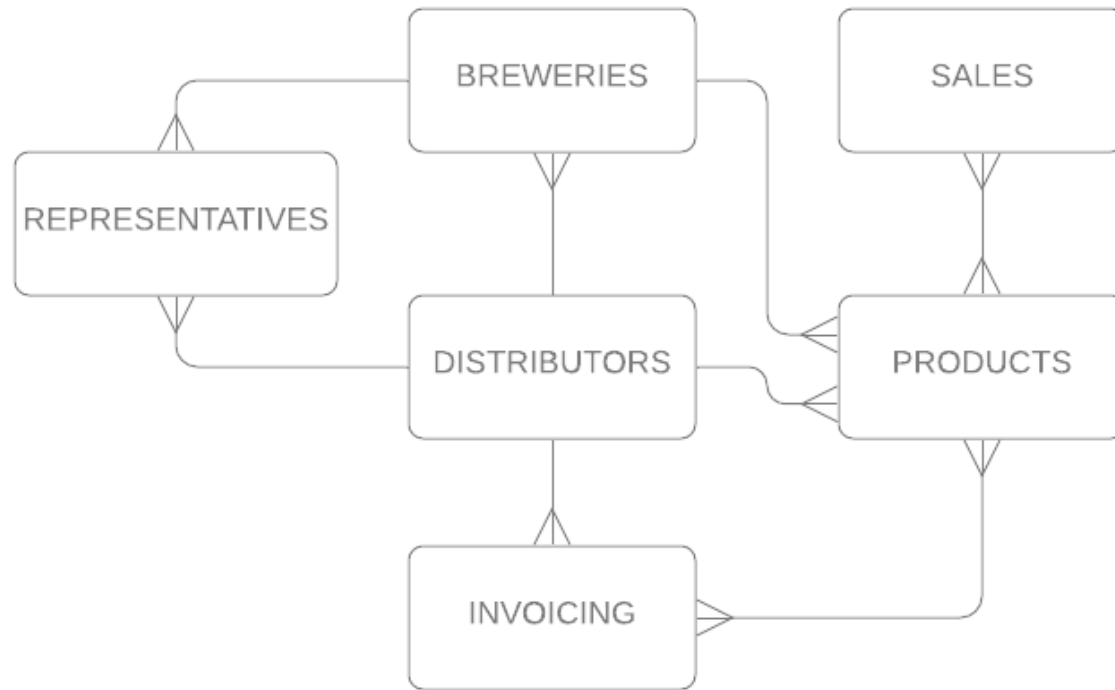
ZYMURGY

/ˈzī,mərjē/ noun:

The study or practice of fermentation in brewing, winemaking, or distilling.



Entity-Relationship Model



BUSINESS NEEDS:

Track sales and profits

Hold product information

Ordering logistics

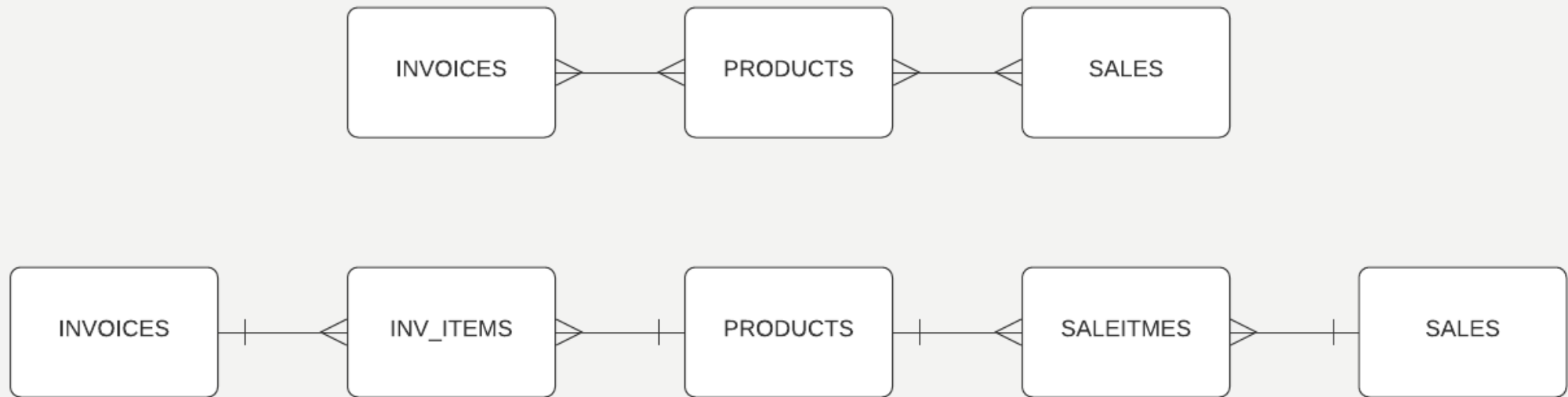
- Track invoices

- Delivery schedules

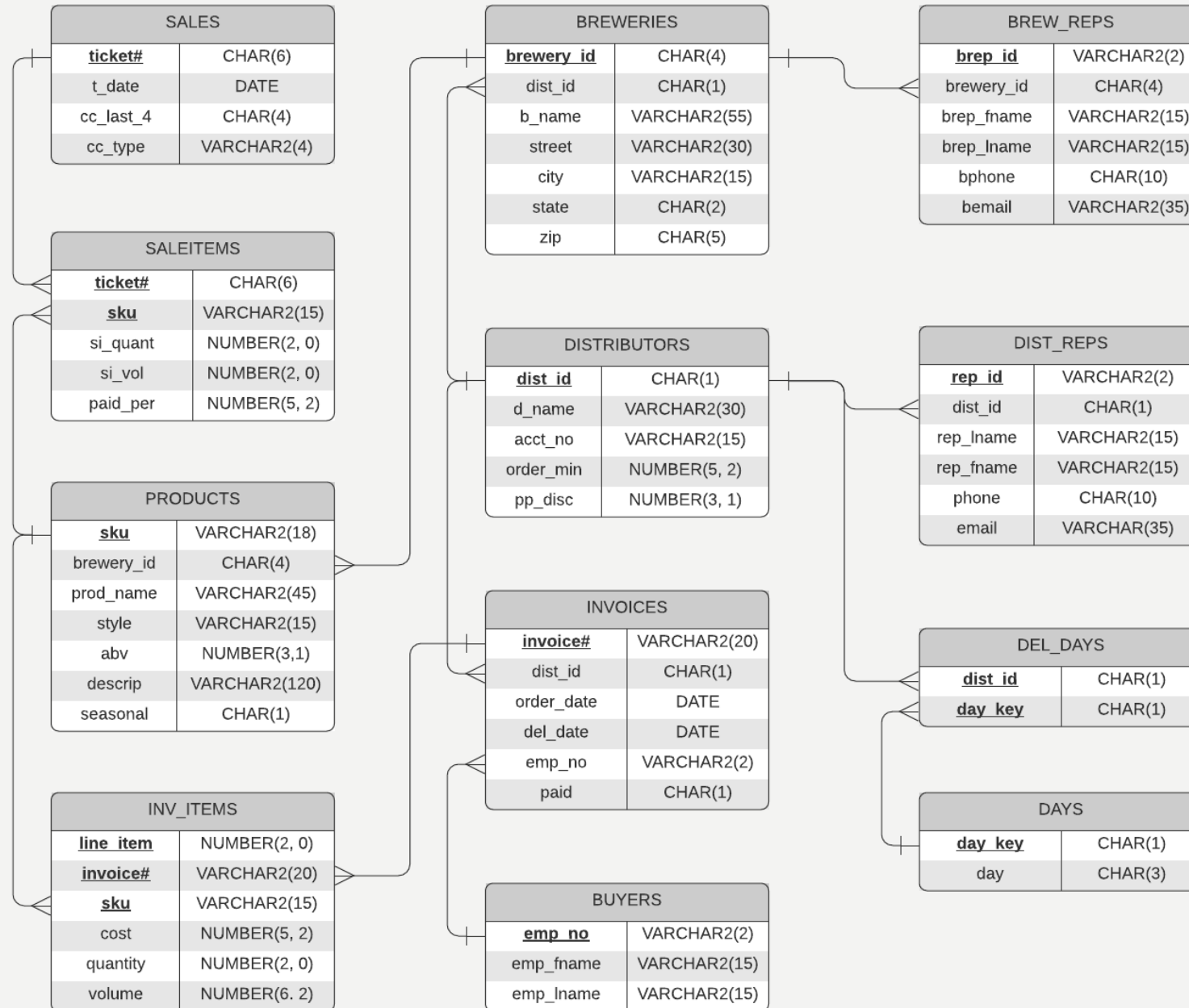
- Account management

DATABASE NORMALIZATION

Splitting many-to-many relationships:



ZYMURGY ZONE DATABASE ERD



DESIGN FEATURES:

- Sequence generated primary keys
- Delivery schedule lookup table
- Detailed product info including descriptions
- Foreign key enforced referential integrity

Delivery schedule report:

```
SELECT d_name distributor, day delivery_days
FROM distributors JOIN del_days USING(dist_id) JOIN days USING(day_key)
ORDER BY dist_id;
```

Results Explain Describe Saved SQL History

DISTRIBUTOR	DELIVERY_DAYS
CRAFT MASSACHUSETTS	MON
CRAFT MASSACHUSETTS	TUE
CRAFT MASSACHUSETTS	WED
CRAFT MASSACHUSETTS	FRI
CRAFT COLLECTIVE	TUE
CRAFT COLLECTIVE	THU
ATLANTIC BEVERAGE DISTRIBUTORS	MON
ATLANTIC BEVERAGE DISTRIBUTORS	WED
ATLANTIC BEVERAGE DISTRIBUTORS	FRI

Sequences:

```
21 CREATE SEQUENCE distreps_repid_seq
22   START WITH 1
23   INCREMENT BY 2
24   MAXVALUE 99
25   CYCLE
26   NOCACHE;
27
28 CREATE SEQUENCE brewreps_brepid_seq
29   START WITH 2
30   INCREMENT BY 2
31   MAXVALUE 98
32   CYCLE
33   NOCACHE;
34
35 CREATE SEQUENCE tickets_ticket#_seq
36   START WITH 100000
37   INCREMENT BY 1
38   MAXVALUE 999999
39   NOCYCLE
40   NOCACHE;
```

```
319 INSERT INTO sales VALUES (tickets_ticket#_seq.NEXTVAL, '15-AUG-2021', '4567', 'VISA');
320 INSERT INTO saleitems VALUES (tickets_ticket#_seq.CURRVAL, '23545', '1', '16', '7');
321 INSERT INTO saleitems VALUES (tickets_ticket#_seq.CURRVAL, '0987987', '3', '16', '6.5');
322
323 INSERT INTO sales VALUES (tickets_ticket#_seq.NEXTVAL, '15-AUG-2021', '4567', 'VISA');
324 INSERT INTO saleitems VALUES (tickets_ticket#_seq.CURRVAL, '23545', '2', '16', '7');
```

CHAPTER 8:

SORTING DATA AND RESTRICTING ROWS

List invoices from Craft Collective that contain an order for two or more of the same keg.

```
SELECT DISTINCT i.invoice#, ii.quantity
FROM invoices i, inv_items ii
WHERE i.invoice# = ii.invoice#
AND (ii.quantity >= 2 AND ii.volume IN (1984, 1690))
AND i.dist_id = 1;
```

Results Explain Describe Saved SQL History

INVOICE#	QUANTITY
57238490523	4
41079278901	4
41079225461	2

3 rows returned in 0.00 seconds [Download](#)

CHAPTER 9:

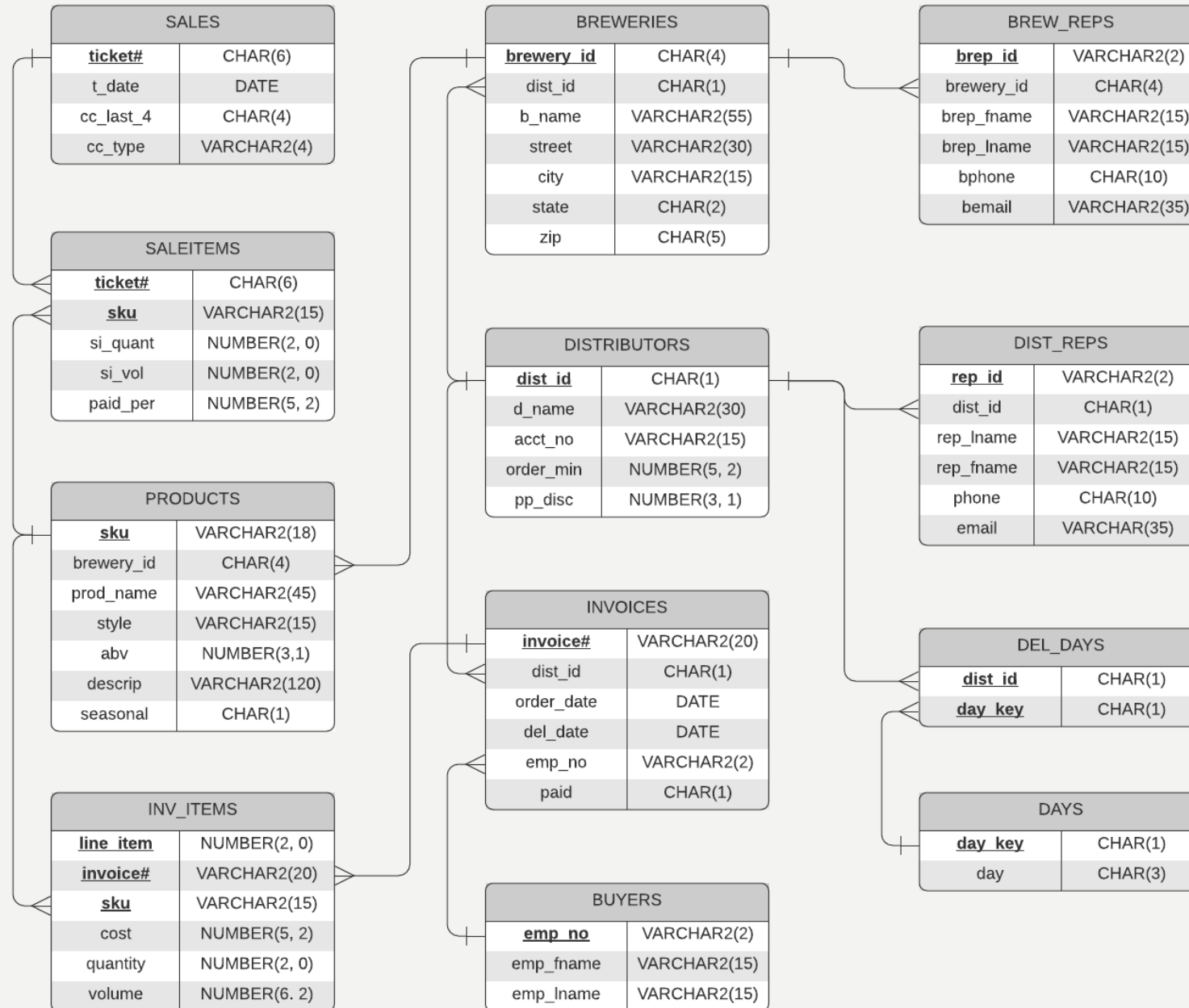
JOINING DATA

List all product names as well as the associated brewery and distributor. Include a sales ticket number if the product has been ordered, but do not omit the product if it has not been ordered. Organize by brewery and distributor.

```
SELECT p.prod_name product, b.b_name brewery, d.d_name distributor, s.ticket# sale_no
FROM sales s RIGHT OUTER JOIN saleitems si ON s.ticket# = si.ticket#
RIGHT OUTER JOIN products p ON si.sku = p.sku
RIGHT OUTER JOIN breweries b ON p.brewery_id = b.brewery_id
RIGHT OUTER JOIN distributors d ON b.dist_id = d.dist_id
ORDER BY b.b_name, d.d_name;
```

Results	Explain	Describe	Saved SQL	History
PRODUCT	BREWERY	DISTRIBUTOR	SALE_NO	
ALLAGASH WHITE	ALLAGASH BREWING CO.	CRAFT MASSACHUSETTS	100004	
CURIEUX	ALLAGASH BREWING CO.	CRAFT MASSACHUSETTS	100007	
CURIEUX	ALLAGASH BREWING CO.	CRAFT MASSACHUSETTS	100009	
FIDDLEHEAD IPA	FIDDLEHEAD BREWING CO.	CRAFT COLLECTIVE	100005	
FIDDLEHEAD IPA	FIDDLEHEAD BREWING CO.	CRAFT COLLECTIVE	100006	
RARIFIED AIR	FIDDLEHEAD BREWING CO.	CRAFT COLLECTIVE	100009	
POST SHIFT PILS	JACK'S ABBY CRAFT LAGERS	ATLANTIC BEVERAGE DISTRIBUTORS	100009	
HOPONIUS UNION	JACK'S ABBY CRAFT LAGERS	ATLANTIC BEVERAGE DISTRIBUTORS	-	
HOUSE LAGER	JACK'S ABBY CRAFT LAGERS	ATLANTIC BEVERAGE DISTRIBUTORS	-	
OH-J	LONE PINE BREWING CO.	HOMEGROWN DISTRIBUTION	-	

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HOPONIUS UNION	JACK'S ABBY CRAFT LAGERS	ATLANTIC BEVERAGE DISTRIBUTORS	-	
HOUSE LAGER	JACK'S ABBY CRAFT LAGERS	ATLANTIC BEVERAGE DISTRIBUTORS	-	
OH-J	LONE PINE BREWING CO.	HOMEGROWN DISTRIBUTION	-	

CHAPTER 10:

SINGLE-ROW FUNCTIONS

Management wants to see the order minimums and prompt pay discounts for all distributors.They plan to contact the distributor rep to verify,so include first and last names.Make sure the format of the report conforms to expectation.

```
SELECT INITCAP(d_name) "Distributor",
       TO_CHAR(order_min, '$999.99') "Minimum",
       NVL2(pp_disc, CONCAT(pp_disc, '%'), 'No Discount') "Discount",
       CONCAT(INITCAP(rep_fname), CONCAT(' ',
       INITCAP(rep_lname))) "Representative"
FROM distributors d LEFT OUTER JOIN dist_reps dr ON d.dist_id = dr.dist_id;
```

Results

Explain

Describe

Saved SQL

History

Distributor	Minimum	Discount	Representative
Craft Massachusetts	\$200.00	No Discount	Jean Marc Aubuchon
Craft Collective	\$350.00	1.5%	Adam Meuse
Atlantic Beverage Distributors	\$250.00	2%	Drew Shalihan
Atlantic Beverage Distributors	\$250.00	2%	Seth Cohen
Burke Distributing	\$400.00	1%	Chris Currier
Homegrown Distribution	\$150.00	No Discount	

6 rows returned in 0.01 seconds

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CHAPTER 11:

GROUP FUNCTIONS

Display the total amount due for each invoice as well as the distributor.
Include an aggregate sum of invoices for each distributor.

```
SELECT NVL2(invoice#, invoice#, 'Sum of invoices') invoice,
       NVL2(d_name, d_name, 'Repeat record') distributor,
       TO_CHAR(SUM(quantity * cost), '$99999.99') total
FROM inv_items JOIN invoices USING(invoice#) JOIN distributors USING(dist_id)
GROUP BY GROUPING SETS (invoice#, d_name, (invoice#, d_name), ())
ORDER BY d_name, total;
```

Results

Explain

Describe

Saved SQL

History

INVOICE	DISTRIBUTOR	TOTAL
0752490023458	ATLANTIC BEVERAGE DISTRIBUTORS	\$420.00
0275983402207	ATLANTIC BEVERAGE DISTRIBUTORS	\$552.00
Sum of invoices	ATLANTIC BEVERAGE DISTRIBUTORS	\$972.00
753240-0234	BURKE DISTRIBUTING	\$485.00
Sum of invoices	BURKE DISTRIBUTING	\$485.00
41079278901	CRAFT COLLECTIVE	\$560.00
41079225461	CRAFT COLLECTIVE	\$560.00
57238490523	CRAFT COLLECTIVE	\$560.00
Sum of invoices	CRAFT COLLECTIVE	\$1680.00
45310705-4237	CRAFT MASSACHUSETTS	\$510.00
51078140-3578	CRAFT MASSACHUSETTS	\$510.00
Sum of invoices	CRAFT MASSACHUSETTS	\$1020.00

CHAPTER 12:

SUBQUERIES

List all products that share a style with the most purchased style.

```
SELECT prod_name, style
FROM products
WHERE style = (
    SELECT style
    FROM saleitems JOIN products USING(sku)
    GROUP BY style HAVING SUM(si_quant) = (
        SELECT MAX(SUM(si_quant))
        FROM saleitems JOIN products USING(sku)
        GROUP BY style
    )
);
```

Results	Explain	Describe	Saved SQL	History
PROD_NAME				STYLE
FIDDLEHEAD IPA				IPA
FINESTKIND IPA				IPA
OH-J				IPA
3 rows returned in 0.01 seconds Download				

CHAPTER 12:

SUBQUERIES

Management wants to analyze sales trends by looking at days and purchases with higher-than-average profitability. Generate a report showing the ticket number and date of sales with a higher average profit-per-ounce than the overall average.

```
SELECT ticket#, t_date AS sale_date
FROM sales JOIN saleitems USING(ticket#)
      JOIN products USING(sku)
      JOIN inv_items USING(sku)
      JOIN invoices USING(invoice#)
GROUP BY ticket#, t_date
HAVING AVG((paid_per / si_vol) - (cost / volume)) > (

      SELECT AVG((paid_per / si_vol) - (cost / volume))
      FROM saleitems JOIN products USING(sku)
      JOIN inv_items USING(sku)
      JOIN invoices USING(invoice#)

);
```

Results Explain Describe Saved SQL History

TICKET#	SALE_DATE
100009	21-Aug-2021
100005	15-Aug-2021
100006	15-Aug-2021

3 rows returned in 0.01 seconds [Download](#)

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**Thank you
and
Cheers!**