PURDUE POLYTECHNIC INSTITUTE
Department of Computer and Information Technology

CNIT 27200: Lab #5

25 pts

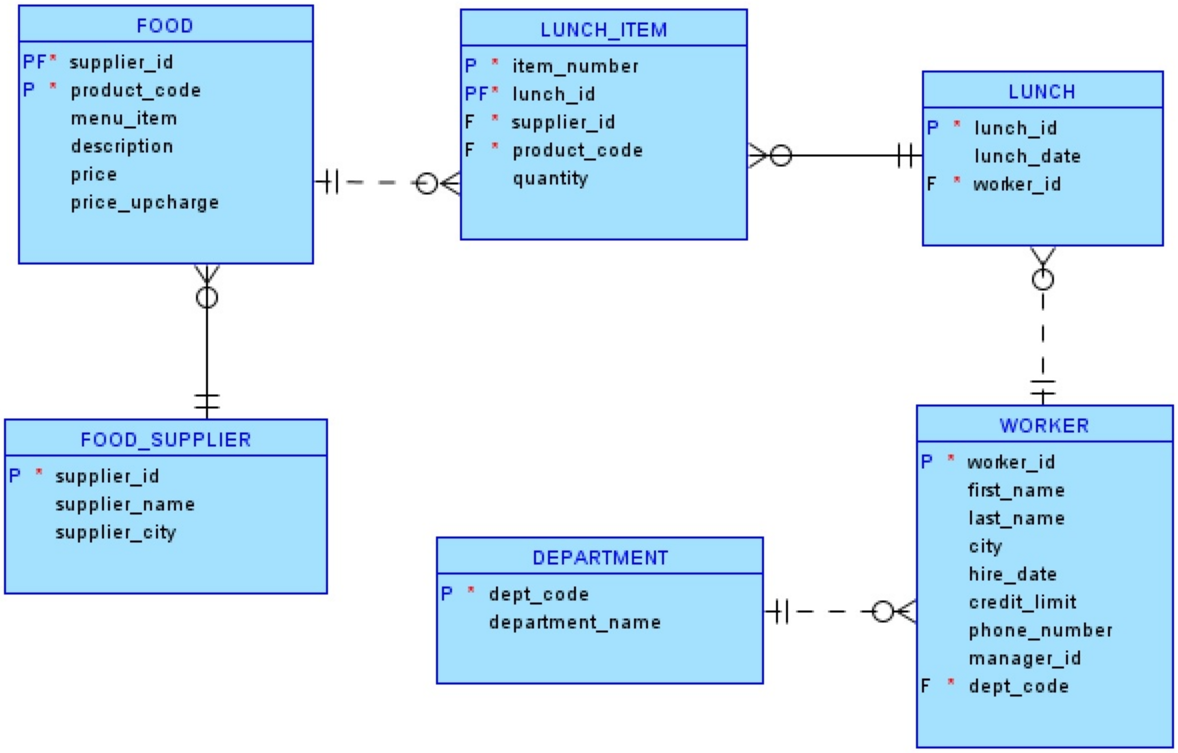
Due Date

- **Part A** is due within the Lab session 10 pts.
- **Part B** is due **the evening before your next lab by 11:59 p.m.** 15 pts. It must be submitted via Blackboard.

Objectives

- Be able to perform multi-table queries
- Be able to perform nested queries

PART A (10 points) – Use the Lunches DB



Question 1. List all columns from the LUNCH_ITEM table, but limit it to only food items purchased on August 15, 2019. Sort by the lunch_id. Use a nested query statement.

- ❒ Use a subquery or also called a nested query
- ❒ LUNCH_ITEM table (and LUNCH table in subquery)
- ❒ In the connecting WHERE clause, compare lunch_id from the LUNCH_ITEM table to the lunch_id in the LUNCH table
- ❒ You can use the Oracle default date format 15-AUG-2019 in the subquery WHERE clause
- ❒ Place the Order by after the subquery. Order by is always at the end of the statement.
- ❒ 20 rows selected

Question 2. List the supplier ID and supplier name of any suppliers who have yet to supply food.

- ❒ Use a subquery with NOT IN
- ❒ FOOD_SUPPLIER table (and FOOD table inside of the subquery)
- ❒ 4 rows selected

Question 3. Find the Worker ID, worker last name, worker department code, lunch ID and lunch date of workers who placed lunch orders during July 2019. Sort by lunch date.

- ❒ Use an inner join to obtain this result.
- ❒ WORKER and LUNCH tables
- ❒ Try using Table Aliases
- ❒ Note that the attribute Worker_ID is used in both tables
- ❒ Use SET LINESIZE 200 to help with column wrapping
- ❒ 13 rows selected.

Question 4. **A)** Find the worker id, last name, city, department code, lunch id, and lunch date for all workers from the city of **Skokie** or **Naperville**.

- ❒ Use an inner join to obtain this result.
- ❒ WORKER and LUNCH tables
- ❒ 13 rows selected.

B) Find the worker id, last name, city, department code, department name, lunch id, and lunch date for all workers from the city of **Skokie** or **Naperville**.

- ❒ Builds on part A… notice that you add department name in the SELECT clause
- ❒ Note that this involves 3 tables and 2 relationships.
- ❒ WORKER, LUNCH, and DEPARTMENT tables
- ❒ 9 rows selected.

C) Find the worker id, last name, city, department code, department name, lunch id, lunch date, item number, supplier id and product code for all workers from the city of **Skokie** or **Naperville**.

- ❒ Builds on part B… notice that you add item number, supplier id and product code in the SELECT clause
- ❒ Note that this involves 4 tables and 3 relationships
- ❒ WORKER, LUNCH, LUNCH_ITEM, and DEPARTMENT tables
- ❒ This query lists all of the workers from Skokie or Naperville along with each lunch item purchased
- ❒ 28 rows selected.

Question 5. A) Count the number of lunches per month-year purchased by workers. Format the lunch date in the MON-YYYY format. Sort by the month-year.

- ❒ Use an inner join to obtain this result
- ❒ WORKER and LUNCH tables
- ❒ Label the lunch date as MONTH and the count as LUNCH_COUNT
- ❒ Group by the non-aggregated column in the SELECT clause
- ❒ 2 rows selected.

B) Expand on 5A. Add the department code to find the count of month-year purchased lunches by workers per department code.

- ❒ Group by the non-aggregated columns in the SELECT clause
- ❒ 19 rows selected.

Question 6. A) List the supplier ID, supplier name, supplier city, the total price (use a column alias of TOTAL), and the count of food items supplied (use a column alias of SUPPLYCOUNT). Format the SUPPLYCOUNT with a width of a15. Format the total price as currency.

- ❒ Use an inner join to obtain this result
- ❒ FOOD_SUPPLIER, FOOD, and LUNCH_ITEM tables
- ❒ There is a composite PK to join in this query
- ❒ Group by the non-aggregated columns from the SELECT clause
- ❒ Use *col total format $999.99* to set the format as currency
- ❒ 11 rows selected.

B) Expand on 6A. Filter the suppliers with a total price greater than 50.

- ❒ Use a HAVING clause to filter the total price greater than 50
- ❒ 4 rows selected.

PART B (15 points)

Questions 1 - 10 are worth 1.5 pts. = 15 pts.

For each question:

- **report the SQL statement used**
- **the resulting output from the sql statement**
- **address the explanation required in each question.**

SPECIFIC LEARNING OBJECTIVES:

- Understand how to link tables to one another with a primary key and foreign key.
- Be able to access complex data requirements from related multiple tables using a SQL query.
- Understand and use natural joins
- Understand and use table aliases
- Understand and use IN and NOT IN

Question 1. List the Employee ID, last name, and first name of all employees who have never packed a shipment (no record of employee on a packing slip). Concatenate the employee name as "lastname, first" and labeled as CONTACT.

a. 28 rows selected
b. Explain how nested queries operate

Question 2. List the Employee ID, last name, email address, date ordered, and date delivered for all purchase orders paid in full (**Y**) with a **September 2019** ordered date.

a. EMPLOYEE and PURCHASEORDER tables
b. 14 rows selected.
c. Explain the inner join syntax for two tables

Question 3. **A)** Per each category ID, list the name of the category, the count the number of parts, the average stock price, the minimum stock price, and the maximum stock price. Use column aliases of PARTS, AVG_PRICE, MIN_PRICE, and MAX_PRICE. Round the average stock price to two decimals. Sort by category ID. 10 rows selected.

B) Use the same criteria for Question 3A, except limit the result set to only include the categories where the average stock price is greater than 75. 6 rows selected

a. How is the syntax for inner joins different when you add a 3rd table? Explain how to do it as if you were explaining it verbally to someone else learning it for the first time.

Question 4. List the Order ID, Order Date, Shipment ID, customer last name, and state of each customer who has placed an order, but the order has yet to be assigned a packing slip (no record in the packing slip table). (Hint: Includes an inner join along with a subquery). 19 rows selected.

a. Explain the differences and similarities between an inner join and a nested query.

Question 5. List the Supplier ID, Supplier Company name, and supplier cell phone and count of supplied parts stored in the database (label as SUPPLIER_COUNT). 29 rows selected.

a. Explain how the join works in this question. How are the counts divided up? What are you grouping in this question?

Question 6. Report the customer orders that have a shipped item record for orders made on **16-DEC-2018** with parts that have a unit price less than **10**. List the Customer ID, Order ID, part number, unit price, package number, shipment id, and quantity shipped. (Hint: joining 4 tables) 21 rows selected

a. Explain how to join two tables with a composite PK. How is it different than a single attribute PK? How is it similar?

Question 7. Report only customer orders placed in 2019 from New York (**NY**). List the Customer ID, the customer's cell phone, Order Date, Shipper Name (the shipping company), order id, the total price of the order (by totaling the unit price * orderquantity of each line in the order), and count of items per order for all of the selected customers (both corporate and individual). Only include customers who have a total amount per order less than **$2000**. Sort by order date.

a. Use the column alias TOTAL_PRICE for the total price
b. Format TOTAL_PRICE as currency
c. Use the column alias ORDERS for the count of items per order
d. 13 rows selected
e. Check your work. Use customerID **C-200038** as an example. Run the query for this customer without the grouping. Manually add the total unit price. Does it match? Explain how the grouping works, and how it compares to your findings when manually evaluating this one customer's orders in the database.

Question 8. List the Order ID, Order Date, customer ID, email address and count of items per customer order from customers living in the state of Wyoming (**WY**) with either a **comcast.net** email address or no email address at all (email address field is **null**). Format the email address to a25. 12 rows selected.

a. Explain the difference between a table alias and a column alias

Question 9. List the supplier company name, supplier ID, catalog number, partnumber, unitcost, purchase order ID, and ordered unit cost for the company called **DealsPC**. 7 rows selected.

a. Explain what happens if you do not join all of the composite PK attributes. Test it. Detail the result and interpret it.

Question 10. List the Order ID, order date, company name, cell phone and state of all customer orders with a **307** area code in their stored cell phone number (Hint: use SUBSTR to find the first 3 digits). 11 rows selected.

a. Explain why there are multiple listings of the same company in the result set. What makes each row different and how did the join produce this result?