DP_1_3_Practice

Join	Display data from two or more related tables.
Operator	A symbol used to perform an operation on some values.
Field	An implementation of an attribute or relationship in a table.
Projection	The capability in SQL to choose columns in a table that you want returned from a query.
Null	A value that is unavailable, unassigned, unknown, or inapplicable.
Alias	Renames a column heading.
Expression	A mathematical equation.
Selection	The capability in SQL to choose the rows in a table returned from a query.
Query	Retrieves information from the database
Select Clause	Specifies the columns to be displayed
From Clause	Specifies the table containing the column listed in the select clause
Statement	An individual SQL command
Clause	Part of a SQL statement

1. Write a SQL statement that demonstrates projection.

```
SELECT student_name, grade, class
FROM students;
```

2. Write a query that displays the last_name and email addresses for all the people in the DJs on Demand d_client table. The column headings should appear as “Client” and “Email Address.”

```
SELECT last_name AS Client, email AS "Email Address"
FROM d_client;
```

3. The manager of Global Fast Foods decided to give all employees at 5%/hour raise + a $.50 bonus/hour. However, when he looked at the results, he couldn't figure out why the new raises were not as he predicted. Ms. Doe should have a new salary of $7.59, Mr. Miller's salary should be $11.00, and Monique Tuttle should be $63.50. He used the following query. What should he have done?

SELECT last_name, salary *1.05 +.50
FROM f_staffs;

4. Which of the following would be the easiest way to see all rows in the d_songs table?
C - Select*

5. If tax = 8.5% * car_cost and license = car_cost * .01%, which value will produce the largest car payment?
A - Payment = (car_cost * 1.25) + 5.00 - (tax) - (license)

6. In the example below, identify the keywords, the clause(s), and the statement(s):
SELECT employee_id, last_name
FROM employees

7. Label each example as SELECTION or PROJECTION.
a. Please give me Mary Adam's email address - Selection
b. I would like only the manager_id column, and none of the other columns - Projection

8. Which of the following statements are true?
C - null * .05 = null

9. How will the column headings be labeled in the following example?
C - BEARS, COLOR, age

10. Which of the following words must be in a SELECT statement in order to return all rows?
B - Select and From

DP_2_1_Practice

Distinct	A command that suppresses duplicates
Concatenation Operator	Links two columns together to form one character data column
Literal Value	A group of character data
Describe	An SQL plus command that displays the structure of a table

1. The manager of Global Fast Foods would like to send out coupons for the upcoming sale. He wants to send one coupon to each household. Create the SELECT statement that returns the customer last name and a mailing address.

```
SELECT last_name,
      CONCAT(address, ', ', city, ', ', state, ' ', zip_code) AS mailing_address
FROM Customers;
```

2. Each statement below has errors. Correct the errors and execute the query in Oracle Application Express.

```
SELECT first_name
FROM f_staffs;
```

```
SELECT first_name ||" " || llast_name AS "DJs on Demand Clients"
FROM d_clients;
```

```
SELECT DISTINCT f_order_lines
FROM quantity;
```

```
SELECT order_number
FROM f_orders;
```

3. Sue, Bob, and Monique were the employees of the month. Using the f_staffs table, create a SELECT statement to display the results as shown in the Super Star chart.
Super Star
*** Sue *** Sue ***
*** Bob *** Bob ***
*** Monique *** Monique ***

```
SELECT '*** ' || first_name || ' *** ' || first_name || ' ***' AS "Super Star"
FROM f_staffs
WHERE first_name IN ('Sue', 'Bob', 'Monique');
```

4. Which of the following is TRUE about the following query?

```
SELECT first_name, DISTINCT birthdate
FROM f_staffs;
```

d. No rows will be returned

5. Global Fast Foods has decided to give all staff members a 5% raise. Prepare a report that presents the output as shown in the chart.
EMPLOYEE LAST NAME CURRENT SALARY SALARY WITH 5% RAISE

```
SELECT last_name AS "EMPLOYEE LAST NAME",
      salary AS "CURRENT SALARY",
      salary * 1.05 AS "SALARY WITH 5% RAISE"
FROM f_staffs;
```

6. Create a query that will return the structure of the Oracle database EMPLOYEES table. Which columns are marked “nullable”? What does this mean?

```
SELECT COLUMN_NAME, DATA_TYPE, NULLABLE
FROM USER_TAB_COLUMNS
WHERE TABLE_NAME = 'EMPLOYEES';
```

7. The owners of DJs on Demand would like a report of all items in their D_CDs table with the following column headings: Inventory Item, CD Title, Music Producer, and Year Purchased. Prepare this report

```
SELECT inventory_item AS "Inventory Item",
      cd_title AS "CD Title",
      music_producer AS "Music Producer",
      year_purchased AS "Year Purchased"
FROM D_CDs;
```

8. True/False -- The following SELECT statement executes successfully:

```
SELECT last_name, job_id, salary AS Sal
FROM employees;
```

TRUE

9. True/False -- The following SELECT statement executes successfully:

```
SELECT *
FROM job_grades;
```

TRUE

10. There are four coding errors in this statement. Can you identify them?

```
SELECT employee_id, last_name,
         sal * 12 AS “ANNUAL SALARY”
FROM employees;
```

(needs tab, no x, comma, quotes)

11. In the arithmetic expression **salary*12** - 400, which operation will be evaluated first?

This is done first, multiplication (exponent?)

12. Which of the following can be used in the SELECT statement to return all columns of data in the
Global Fast Foods f_staffs table?
a. column names
c. DISTINCT id

13. Using SQL to choose the columns in a table uses which capability?
b. projection

14. SELECT last_name AS "Employee". The column heading in the query result will appear as:
c. Employee
(in quotes will be as appears!)

15. Which expression below will produce the largest value?
b. SELECT salary* (6 + 100)

16. Which statement below will return a list of employees in the following format?
Mr./Ms. Steven King is an employee of our company.
c. SELECT 'Mr./Ms. '||first_name||' '||last_name ||' '||'is an employee of our company.' AS "Employees"
FROM employees ;

17. Which is true about SQL statements?
c. Keywords cannot be abbreviated or split across lines.

18. Which queries will return three columns each with UPPERCASE column headings?
b. SELECT DEPARTMENT_ID, LAST_NAME, FIRST_NAME
FROM employees;

19. Which statement below will likely fail?
a. SELCT * FROM employees;

DP_2_2_Practice

SELECT statement	Restricts the rows returned by a select statemen
Comparison operator	Compares one expression to another value or expression

1. Using the Global Fast Foods database, retrieve the customer's first name, last name, and address for the customer who uses ID 456.

```
SELECT first_name, last_name, address
FROM customers
WHERE customer_id = 456;
```

2. Show the name, start date, and end date for Global Fast Foods' promotional item "ballpen and highlighter" giveaway.

```
SELECT promotion_name, start_date, end_date
FROM promotions
WHERE promotion_name = "ballpen and highlighter";
```

3. Create a SQL statement that produces the following output:

Oldest

The 1997 recording in our database is The Celebrants Live in Concert

```
SELECT 'The ' || year || ' recording in our database is ' || title AS "Oldest"
FROM recordings
WHERE year = (SELECT MIN(year) FROM recordings);
```

(come back to this one)

4. The following query was supposed to return the CD title "Carpe Diem" but no rows were returned.

Correct the mistake in the statement and show the output.

```
SELECT produce, title
FROM d_cds
WHERE title = 'Carpe Diem' ;
```

5. The manager of DJs on Demand would like a report of all the CD titles and years of CDs that were produced before 2000

```
SELECT title, year_produced
FROM d_cds
WHERE year_produced < 2000;
```

6. Which values will be selected in the following query?

```
SELECT salary
FROM employees
WHERE salary < = 5000;
```

Abcd, all of them are less or equal

For the next three questions, use the following table information:
TABLE NAME: students
COLUMNS:
studentno NUMBER(6)
fname VARCHAR2(12)
lname VARCHAR(20)
sex CHAR(1)
major VARCHAR2(24)

7. Write a SQL statement that will display the student number (studentno), first name (fname), and last name (lname) for all students who are female (F) in the table named students.

```
SELECT studentno, fname, lname
FROM students
WHERE sex = 'F';
```

8. Write a SQL statement that will display the student number (studentno) of any student who has a PE major in the table named students. Title the studentno column Student Number.

```
SELECT studentno AS "Student Number"
FROM students
WHERE major = 'PE';
```

9. Write a SQL statement that lists all information about all male students in the table named students.

```
SELECT *
FROM students
WHERE sex = 'M';
```

10. Write a SQL statement that will list the titles and years of all the DJs on Demand CDs that were not produced in 2000.

```
SELECT title, year_produced
FROM d_cds
WHERE year_produced != 2000;
```

DP_2_3_Practice

ESCAPE option	This option identifies that the escape characters should be interpreted literally
IS NULL	Condition tests for null values

BETWEEN	Displays rows based on a range of values
BETWEEN AND	Including the specified limits and the area between them; the numbers 1-10, inclusive
LIKE	Selects rows that match a character pattern
IN	Tests for values in a specified list of values

1. Display the first name, last name, and salary of all Global Fast Foods staff whose salary is between $5.00 and $10.00 per hour.
SELECT first_name, last_name, salary
FROM f_staffs
WHERE salary BETWEEN 5.00 AND 10.00;

2. Display the location type and comments for all DJs on Demand venues that are Private Home.
SELECT location_type, comments
FROM d_venues
WHERE location_type = 'Private Home';

3. Using only the less than, equal, or greater than operators, rewrite the following query:
SELECT first_name, last_name
FROM f_staffs
WHERE salary >= 20.00 AND salary <= 60.00;

4. Create a list of all the DJs on Demand CD titles that have “a” as the second letter in the title.
SELECT title
FROM d_cds
WHERE title LIKE 'a';
(come back to this question)(% depends what you want)

5. Who are the partners of DJs on Demand who do not get an authorized expense amount?
(unsure)

6. Select all the Oracle database employees whose last names end with “s”. Change the heading of the column to read Possible Candidates.
SELECT last_name AS "Possible Candidates"
FROM employees
WHERE last_name LIKE '%s';

8. Write a SQL statement that lists the songs in the DJs on Demand inventory that are type code 77, 12, or 1.

```
SELECT song_title
FROM d_songs
WHERE type_code IN (77, 12, 1);
```

(or the =)

DP_3_1_Practice

NOT	Inverts the value of the condition
AND	Both conditions must be true for a record to be selected
precedence	Rules that determine the order in which expressions are evaluated and calculated
OR	Either condition can be true for a record to be selected

1. Execute the two queries below. Why do these nearly identical statements produce two different results? Name the difference and explain why.

```
SELECT code, description
FROM d_themes
WHERE code >200 AND description IN('Tropical', 'Football', 'Carnival');
```

```
SELECT code, description
FROM d_themes
WHERE code >200 OR description IN('Tropical', 'Football', 'Carnival');
```

Because of the or statement

2. Display the last names of all Global Fast Foods employees who have “e” and “i” in their last names.

```
SELECT last_name
FROM f_staffs
WHERE last_name LIKE '%e%'
AND last_name LIKE '%i%';
```

3. I need to know who the Global Fast Foods employees are that make more than $6.50/hour and their position is not order taker.

```
SELECT first_name, last_name, position, salary
FROM f_staffs
WHERE salary > 6.50
```

AND position != 'Order Taker';

4. Using the employees table, write a query to display all employees whose last names start with “D”and have “a” and “e” anywhere in their last name
SELECT first_name, last_name
FROM employees
WHERE last_name LIKE 'D%'
AND last_name LIKE '%a%'
AND last_name LIKE '%e%';
(look back at question 2)

5. In which venues did DJs on Demand have events that were not in private homes?
SELECT venue_name, location_type
FROM d_venues
WHERE location_type != 'Private Home';

Which list of operators is in the correct order from highest precedence to lowest precedence?
c. NOT, AND, OR

DP_3_2_Practice

Ascending	Orders the rows in ascending order (the default order); A-Z
Descending	Orders the rows in descending order: Z-A
Sort	To arrange according to class, kind, or size

1. In the example below, assign the employee_id column the alias of “Number.” Complete the SQL statement to order the result set by the column alias.

SELECT employee_id AS "Number", first_name, last_name
FROM employees
ORDER BY "Number";

2. Create a query that will return all the DJs on Demand CD titles ordered by year with titles in alphabetical order by year.
SELECT title, year_produced
FROM d_cds
ORDER BY year_produced ASC, title ASC;

3. Order the DJs on Demand songs by descending title. Use the alias “Our Collection” for the song title.

```
SELECT song_title AS "Our Collection"
FROM d_songs
ORDER BY song_title DESC;
```

4. Write a SQL statement using the ORDER BY clause that could retrieve the information needed. Do not run the query.

```
SELECT employee_id, first_name, last_name, hire_date
FROM employees
ORDER BY hire_date DESC, last_name ASC;
```

Create a list of students who are in their first year of school. Include the first name, last name, student ID number, and parking place number. Sort the results alphabetically by student last name and then by first name. If more than one student has the same last name, sort each first name in Z to A order. All other results should be in alphabetical order (A to Z).

5. Write a SQL statement using the employees table and the ORDER BY clause that could retrieve the information in the following table. Return only those employees with employee_id<125.

```
SELECT employee_id, first_name, last_name, salary
FROM employees
WHERE employee_id < 125
ORDER BY last_name ASC, first_name ASC;
```

Extension

1.E
2.C
3. Select/From
4.ABC
5.C
6.D
7.B
8.B
9.B
10.A
11.

```
SELECT last_name
FROM employees
```

WHERE last_name LIKE 'St%';
12.Salary between 1900 and 2100
13.
WHERE department_id NOT IN (101, 102, 103);
WHERE last_name = 'King';
WHERE start_date LIKE '05-May-1998';
WHERE salary BETWEEN 5000 AND 7000;
WHERE id != 10;

DP_3_3_Practice
1a. Single row
1b. Multiple row
1c. Single row
1d. Multiple
1e. Single row

2. The most common multiple-row functions are: AVG, COUNT, MAX, MIN, and SUM. Give your own definition for each of these functions.
AVG - average of the rows
COUNT - number of specified rows
MAX - maximum value
MIN - minimum value
SUM - total values

3. SELECT AVG(salary)
FROM employees;

SELECT COUNT(salary)
FROM employees;

SELECT MAX(salary)
FROM employees;

SELECT MIN(salary)
FROM employees;

SELECT SUM(salary)
FROM employees;