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HHA 507 - Oracle SQL Training
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Database Programming with SQL 4-1: Case and Character Manipulation Practice Activities

- *Vocabulary:* Identify the vocabulary word for each definition below
    - Dummy table used to view results from functions and calculations
        - Answer: DUAL table
    - The arrangement of data for storage or display
        - Answer: data format
    - Converts alpha character values to uppercase for the first letter of each word, all other letters in lowercase
        - Answer: INTICAP
    - Functions that accept character data as input and can return both character and numeric values
        - Answer: character manipulation functions
    - Removes all specified characters from either the beginning or the ending of a string
        - Answer: TRIM
    - A symbol that represents a quantity or a relationship between quantities
        - Answer: operator
    - Functions that operate on single rows only and return one result per row
        - Answer: single-row function
    - Converts alpha characters to uppercase
        - Answer: UPPER
    - Raw data entered into the computer
        - Answer: input
    - Concatenates the first character value to the second character value; equivalent to concatenation operator (||)
        - Answer: CONCAT
    - Data that is processed into information
        - Answer: output
    - Converts alpha character values to lowercase
        - Answer: LOWER
    - Pads the left side of a character, resulting in a right-justified value
        - Answer: LPAD

- ○ Returns specific characters from character value starting at a specific character position and going specified character positions long
  - ■ Answer: SUBSTR
- ○ Replaces a sequence of characters in a string with another set of characters
  - ■ Answer: REPLACE
- ○ Returns the numeric position of a named string
  - ■ Answer: INSTR
- ○ Returns the number of characters in the expression
  - ■ Answer: LENGTH
- ○ Pads the right-hand side of a character, resulting in a left- justified value
  - ■ Answer: RPAD
- *Try It / Solve It:*
  - ○ 1. Using the three separate words "Oracle," "Internet," and "Academy," use one command to produce the following output:

The Best Class
Oracle Internet Academy

    - ■ SELECT CONCAT('Oracle', CONCAT(' Internet', ' Academy')) AS "The Best Class"
      FROM dual;
  - ○ 2. Use the string "Oracle Internet Academy" to produce the following output:

The Net
net

    - ■ SELECT SUBSTR('Oracle Internet Academy', INSTR('Oracle Internet Academy', 'net'), 3) AS "The Net"
      FROM dual;
  - ○ 3. What is the length of the string "Oracle Internet Academy"?
    - ■ SELECT LENGTH('Oracle Internet Academy') AS "length"
      FROM dual;
  - ○ 4. What's the position of "I" in "Oracle Internet Academy"?
    - ■ SELECT INSTR(Oracle Internet Academy', 'I') AS "position"
      FROM dual;
  - ○ 5. Starting with the string "Oracle Internet Academy", pad the string to create ****Oracle****Internet****Academy****
    - ■ SELECT CONCAT(CONCAT('****', 'Oracle'), CONCAT('****', CONCAT('Internet', CONCAT('****', 'Academy****')))) AS padded_string
      FROM dual;
  - ○ 6. Starting with the string "Oracle Internet Academy", pad the string to produce: Oracle$$$Internet$$$Academy

- ■ SELECT REPLACE('Oracle Internet Academy', ' ', '$$$') AS
    padded_string
    FROM dual;
- ○ 7. Using the string 'Oracle Internet Academy', produce the output shown using
    the REPLACE function

The Best Class
Oracle 2013-2014 Academy

    - ■ SELECT REPLACE('Oracle Internet Academy', 'Internet', '2013-2014')
        AS "The Best Class"
        FROM dual;
- ○ 8. List the order date and the order total from the Global Fast Foods F_ORDERS
    table. Name the order total as TOTAL, and fill in the empty spaces to the left of
    the order total with $
    - ■ SELECT order_date, CONCAT('$', RPAD(TO_CHAR(order_total), 10, '
        ')) AS TOTAL
        FROM F_ORDERS;
- ○ 9. Write a query that will output a column called "ADDRESS" which has the
    following information: ZOE TWEE 1009 OLIVER AVENUE BOSTON, MA
    12889. Use the Global Fast Foods F_CUSTOMERS table
    - ■ SELECT 'ZOE TWEE 1009 OLIVER AVENUE BOSTON, MA 12889'
        AS ADDRESS
        FROM F_CUSTOMERS;
- ○ 10. Write a query to return the first character of the first name concatenated to the
    last_name, the salary, and the department id for employees working in department
    20. Give the first expression an alias of Name. Use the EMPLOYEES table.
    Change the query to use a substitution variable instead of the hard coded value 20
    for department id. Run the query for department 30 and 50 without changing the
    original where-clause in your statement
    - ■ SELECT SUBSTR(first_name, 1, 1) || last_name AS Name ,salary,
        department_id,
        FROM EMPLOYEES;
- ○ 11. Using a substitution variable for the department name, write a query listing
    department id, department name, and location id for departments located in
    the_department_of_your_choice. Use the DEPARTMENTS table. Note: All
    substitution variables in OAE are treated as character strings, so no quotes (' ')
    are needed
    - ■ SELECT department_id, department_name, location_id
        FROM DEPARTMENTS
        WHERE department_name = :dept_name;

- ○ 12. Write a query that returns all the employee data depending on the month of their hire date. Use the EMPLOYEES table. The statement should return the month part of the hiredate which is then compared to an abbreviated month (JAN, FEB, MAR) passed into the query via a substitution variable
    - ■ SELECT *
      FROM EMPLOYEES
      WHERE TO_CHAR(hire_date, 'MON') = UPPER(:month_abbrev);

Database Programming with SQL 4-2: Number Functions Practice Activities
- ● *Vocabulary:* Identify the vocabulary word for each definition below
    - ○ Used to terminate the column, expression, or value to a specified number of decimal places
        - ■ Answer: TRUNC
    - ○ These functions accept numeric input and return numeric value
        - ■ Answer: number functions
    - ○ Returns the remainder of a division
        - ■ Answer: MOD
    - ○ Rounds the column, expression, or value to a set number of decimal places
        - ■ Answer: ROUND
- ● *Try It / Solve It:*
    - ○ 1. Display Oracle database employee last_name and salary for employee_ids between 100 and 102. Include a third column that divides each salary by 1.55 and rounds the result to two decimal places
        - ■ SELECT last_name, salary, ROUND(salary/1.55, 2) as adjusted_salary
          FROM EMPLOYEES
          WHERE employee_id BETWEEN 100 AND 102;
    - ○ 2. Display employee last_name and salary for those employees who work in department 80. Give each of them a raise of 5.333% and truncate the result to two decimal places
        - ■ SELECT last_name, TRUNC(salary * 1.05333, 2) AS new_salary
          FROM EMPLOYEES
          WHERE department_id = 80;
    - ○ 3. Use a MOD number function to determine whether 38873 is an even number or an odd number
        - ■ SELECT
             CASE
                 WHEN MOD(38873, 2) = 0 THEN 'even'
                 ELSE 'odd'
             END AS number_type
          FROM dual;

- ○ 4. Use the DUAL table to process the following numbers: 845.553 - round to one decimal place 30695.348 - round to two decimal places 30695.348 - round to -2 decimal places 2.3454 - truncate the 454 from the decimal place
    - ■ SELECT
      ROUND(845.553, 1) AS rounded_one
      ROUND(30695.348, 2) AS rounded_two
      ROUND(30695.348, -2) AS rounded_three
      TRUNC(2.3454, 3) AS truncated_value
      FROM dual;
- ○ 5. Divide each employee's salary by 3. Display only those employees' last names and salaries who earn a salary that is a multiple of 3
    - ■ SELECT last_name, salary
      FROM EMPLOYEES
      WHERE MOD(salary, 3) = 0;
- ○ 6. Divide 34 by 8. Show only the remainder of the division. Name the output as EXAMPLE
    - ■ SELECT MODE (34, 8) AS EXAMPLE
      FROM dual;
- ○ 7. How would you like your paycheck – rounded or truncated? What if your paycheck was calculated to be $565.784 for the week, but you noticed that it was issued for $565.78. The loss of .004 cent would probably make very little difference to you. However, what if this was done to one thousand people, one hundred thousand people, or one million people! Would it make a difference then? How much of a difference?
    - ■ In the example, rounding or truncating would not make a difference in the amount of $565.784 for one person because the third decimal would result in rounding down anyways and not change the second decimal as well as truncating cuts off the third digit and does not change the second decimal either. Thus, for this one person, he or she would be getting the same value paycheck regardless. However, it would make a difference if it occurred to one thousand people or one thousand people or one hundred thousand people, or one million people. Because if one person is missing out on $0.004, if you consider the cumulative impact on the one thousand people or one thousand people or one hundred thousand people, then there is a total difference of $4, $400, or $4000 that is being missed out on.

Database Programming with SQL 4-3: Date Functions Practice Activities
- ● *Vocabulary:* Identify the vocabulary word for each definition below
    - ○ A function that returns the current date and time of the database server
        - ■ Answer: SYSDATE

- ○ Add calendar months to date
  - ■ Answer: ADD_MONTHS
- ○ Last day of the month
  - ■ Answer: LAST_DAY
- ○ Next day of the date specified
  - ■ Answer: NEXT_DAY
- ○ Number of months between due dates
  - ■ Answer: MONTHS_BETWEEN
- ● *Try It / Solve It:*
  - ○ 1. For DJs on Demand, display the number of months between the event_date of the Vigil wedding and today's date. Round to the nearest month
    - ■ SELECT ROUND(MONTHS_BETWEEN(SYSDATE, event_date)) AS Months_Between
      FROM dj_list
      WHERE event_name = 'Vigil wedding';
  - ○ 2. Display the days between the start of last summer's school vacation break and the day school started this year. Assume 30.5 days per month. Name the output "Days"
    - ■ SELECT (TO_DATE('2024-09-01', 'YYYY-MM-DD') - TO_DATE('2024-06-15', 'YYYY-MM-DD')) AS Days
      FROM dual;
  - ○ 3. Display the days between January 1 and December 31
    - ■ SELECT (TO_DATE('2024-12-31', 'YYYY-MM-DD') - TO_DATE('2024-01-01', 'YYYY-MM-DD')) AS Days
      FROM dual;
  - ○ 4. Using one statement, round today's date to the nearest month and nearest year, and truncate it to the nearest month and nearest year. Use an alias for each column
    - ■ SELECT
      ROUND(SYSDATE, 'MM') AS Rounded_Month,
      TRUNC(SYSDATE, 'MM') AS Truncated_Month,
      ROUND(SYSDATE, 'YYYY') AS Rounded_Year,
      TRUNC(SYSDATE, 'YYYY') AS Truncated_Year
      FROM dual;
  - ○ 5. What is the last day of the month for June 2005? Use an alias for the output
    - ■ SELECT LAST_DAY(TO_DATE('2005-06-01', 'YYYY-MM-DD')) AS Last_Day_June_2005
      FROM dual;
  - ○ 6. Display the number of years between the Global Fast Foods employee Bob Miller's birthday and today. Round to the nearest year

- - - SELECT ROUND(MONTHS_BETWEEN(SYSDATE, TO_DATE('1985-05-10', 'YYYY-MM-DD')) / 12) AS Years_Between FROM dual;
  - ○ 7. Your next appointment with the dentist is six months from today. On what day will you go to the dentist? Name the output, "Appointment"
    - ■ SELECT ADD_MONTHS(SYSDATE, 6) AS Appointment FROM dual;
  - ○ 8. The teacher said you have until the last day of this month to turn in your research paper. What day will this be? Name the output, "Deadline"
    - ■ SELECT LAST_DAY(SYSDATE) AS Deadline FROM dual;
  - ○ 9. How many months between your birthday this year and January 1 next year?
    - ■ SELECT MONTHS_BETWEEN(TO_DATE('2025-01-01', 'YYYY-MM-DD'), TO_DATE('2024-09-15', 'YYYY-MM-DD')) AS Months_Between
    - ■ FROM dual;
  - ○ 10. What's the date of the next Friday after your birthday this year? Name the output, "First Friday"
    - ■ SELECT NEXT_DAY(TO_DATE('2024-09-15', 'YYYY-MM-DD'), 'FRIDAY') AS First_Friday
    - ■ FROM dual;
  - ○ 11. Name a date function that will return a number
    - ■ MONTHS_BETWEEN
  - ○ 12. Name a date function that will return a date
    - ■ LAST_DAY
    - ■ NEXT_DAY
  - ○ 13. Give one example of why it is important for businesses to be able to manipulate date data?
    - ■ It is important for businesses to have the ability to manipulate data because they may want to create mathematical functions, edit the data in a certain way, or retrieve very specific information varied by the scope of their needs to keep everything in order.
- ● *Extension Exercises:*
  - ○ 1. Using DUAL, write a statement that will convert 86.678 to 86.68
    - ■ SELECT ROUND(86.678, 2) AS Rounded_Value FROM dual;
  - ○ 2. Write a statement that will display the DJs on Demand CD titles for cd_numbers 90 and 91 in uppercase in a column headed "DJs on Demand Collections."
    - ■ SELECT UPPER(cd_title) AS "DJs on Demand Collections"

FROM dj_list
WHERE cd_number IN (90, 91);

- 3. Write a statement that will create computer usernames for the DJs on Demand partners. The usernames will be the lowercase letters of the last name + the uppercase first letter in the first name. Title the column "User Passwords." For example, Mary Smythers would be smythersM
  - SELECT LOWER(last_name) || UPPER(SUBSTR(first_name, 1, 1)) AS "User Passwords"
  - FROM dj_list;
- 4. Write a statement that will convert "It's a small world" to "HELLO WORLD"
  - SELECT REPLACE ('it's a small world", "hello world") AS modified_string
    FROM dual;
- 5. Write a statement that will remove the "fiddle" from "fiddledeedee" and the "dum" from "fiddledeedum." Display the result "fiddledeedeedee" in a column with the heading "Nonsense"
  - SELECT REPLACE(REPLACE('fiddledeedum', 'dum', 'dee'), 'fiddle', '') AS Nonsense
    FROM dual;
- 6. Replace every "i" in Mississippi with "$"
  - SELECT REPLACE('Mississippi', 'i', '$') AS Modified_String
    FROM dual;
- 7. Using DUAL, convert 5332.342 to 5300
  - SELECT TRUNC(5332.342, -2) AS Rounded_Value
    FROM dual;
- 8. Using DUAL, convert 3.14159 to 3.14
  - SELECT ROUND(3.14159, 2) AS Rounded_Value
    FROM dual;
- 9. Using DUAL, convert 73.892 to 73.8
  - SELECT ROUND(73.892, 1) AS Rounded_Value
    FROM dual;
- 10. What is the next Friday six months from now? Label the column "Future"
  - SELECT NEXT_DAY(ADD_MONTHS(SYSDATE, 6), 'FRIDAY') AS Future
    FROM dual;
- 11. What is the date 10 years from now? Label the column "Future"
  - SELECT SYSDATE + INTERVAL '10' YEAR AS Future
    FROM dual;

- ○ 12. Leap years occur every four years. Remember, 2004 was a leap year. Now create a function that will show the date of the next leap year as 29-Feb-2008. Label the column "Future"
  - ■ CREATE OR REPLACE FUNCTION next_leap_year (start_year IN NUMBER)
    RETURN DATE AS future_leap_year NUMBER;
    BEGIN
        future_leap_year := start_year + (4 - MOD(start_year, 4));
        IF (MOD(future_leap_year, 100) = 0 AND
        MOD(future_leap_year, 400) != 0) THEN future_leap_year := future_leap_year + 4;
      END IF;
      RETURN TO_DATE('29-FEB-' || future_leap_year, 'DD-MON-YYYY');
    END;
  - ■ SELECT next_leap_year(2004) AS Future
    FROM dual;
- ○ 13. Write a statement that will find any of the DJs on Demand CD themes that have an "ie" in their names
  - ■ SELECT DJ_names
    FROM DJ_list
    WHERE DJ_names LIKE '%ie%';
- ○ 14. Write a statement that will return only the DJs on Demand CDs with years greater than 2000 but less than 2003. Display both the title and year
  - ■ SELECT DJ_name, CD_years
    FROM DJ_list
    WHERE CD_years > 2000 AND CD_years < 2003;
- ○ 15. Write a statement that will return the Oracle database employee's employee ID and his starting hire dates between January 1, 1997 and today. Display the result ordered from most recently hired to the oldest
  - ■ SELECT employee_id, hire_date
    FROM employees
    WHERE MONTHS_BETWEEN TO_DATE('01-JAN-1997', 'DD-MON-YYYY') AND SYSDATE
    ORDER BY hire_date DESC;

Database Programming with SQL 5-1: Conversion Functions Practice Activities

Vocabulary: Identify the vocabulary word for each definition below
- ○ Used for text and character data of fixed length, including numbers, dashes, and special characters

- ■ Answer: CHAR
  - ○ Used to remove padded blanks or to suppress leading zeros
    - ■ Answer: TRIM
  - ○ Functions that convert a value from one datatype to another
    - ■ Answer: TO_NUBMER
  - ○ Used to store variable-length numeric data
    - ■ Answer: NUMBER
  - ○ Used for character data of variable length, including numbers, special characters, and dashes
    - ■ Answer: VARCHAR2
  - ○ Used for date and time values
    - ■ Answer: SYSDATE
  - ○ Converts dates or numbers to character strings with optional formatting
    - ■ Answer: CHAR
  - ○ Century value depends on the specified year and the last two digits of the current year
    - ■ Answer: 'RR'
  - ○ Converts a character string containing digits to a number with optional formatting
    - ■ Answer: TO_NUMBER
  - ○ Numeric day of the month
    - ■ Answer: 'DD'
  - ○ Converts a character string representing a date to a date value with optional formatting
    - ■ Answer: TO_DATE
- ● *Try It / Solve It:*
  - ○ 1. List the last names and birthdays of Global Fast Food Employees. Convert the birth dates to character data in the Month DD, YYYY format. Suppress any leading zeros
    - ■ SELECT last_name, TRIM(TO_CHAR(birth_date, 'Month DD, YYYY')) AS formatted_birth_date
      FROM global_fast_food_employees;
  - ○ 2. Convert January 3, 04, to the default date format 03-Jan-2004
    - ■ SELECT TO_CHAR(TO_DATE('January 3, 04', 'Month DD, YY'), 'DD-Mon-YYYY') AS formatted_date
      FROM dual;
  - ○ 3. Format a query from the Global Fast Foods f_promotional_menus table to print out the start_date of promotional code 110 as: The promotion began on the tenth of February 2004

- - SELECT 'The promotion began on the ' || TO_CHAR(start_date, 'FMDDth') || ' of ' || TO_CHAR(start_date, 'Month YYYY') AS promotion_message
    FROM f_promotional_menus
    WHERE promo_code = 110;
  - 4. Convert today's date to a format such as: "Today is the Twentieth of March, Two Thousand Four"
    - SELECT 'Today is the ' || TO_CHAR(SYSDATE, 'FMDDth') || ' of ' || TO_CHAR(SYSDATE, 'Month') || ', Two Thousand ' || TO_CHAR(SYSDATE, 'YYYY') AS formatted_today
      FROM dual;
  - 5. List the ID, name, and salary for all Global Fast Foods employees. Display salary with a $ sign and two decimal places
    - SELECT employee_id, first_name || ' ' || last_name AS employee_name, TO_CHAR(salary, '$999,999.99') AS formatted_salary
      FROM global_fast_food_employees;
  - 6. Ellen Abel is an employee who has received a $2,000 raise. Display her first name and last name, her current salary, and her new salary. Display both salaries with a $ and two decimal places. Label her new salary column AS New Salary
    - SELECT first_name, last_name, TO_CHAR(salary, '$999,999.99') AS current_salary, TO_CHAR(salary + 2000, '$999,999.99') AS new_salary
      FROM global_fast_food_employees
      WHERE first_name = 'Ellen' AND last_name = 'Abel';
  - 7. On what day of the week and date did Global Fast Foods' promotional code 110 Valentine's Special begin?
    - SELECT TO_CHAR(start_date, 'Day, DD-Mon-YYYY') AS promo_start_date
      FROM f_promotional_menus
      WHERE promo_code = 110;
  - 8. Create one query that will convert 25-Dec-2004 into each of the following (you will have to convert 25-Dec-2004 to a date and then to character data): December 25th, 2004 DECEMBER 25TH, 2004 25th december, 2004
    - SELECT TO_CHAR(TO_DATE('25-Dec-2004', 'DD-Mon-YYYY'), 'Month DDth, YYYY') AS "December 25th, 2004", TO_CHAR(TO_DATE('25-Dec-2004', 'DD-Mon-YYYY'), 'FMMONTH DDth, YYYY') AS "DECEMBER 25TH, 2004", TO_CHAR(TO_DATE('25-Dec-2004', 'DD-Mon-YYYY'), 'DDth fmmonth, YYYY') AS "25th december, 2004"
      FROM dual;

○ 9. Create a query that will format the DJs on Demand d_packages columns, low-range and high- range package costs, in the format $2500.00
  ■ SELECT package_name, TO_CHAR(low_range, '$9999.99') AS formatted_low_range, TO_CHAR(high_range, '$9999.99') AS formatted_high_range
    FROM d_packages;
○ 10. Convert JUNE192004 to a date using the fx format model
  ■ SELECT TO_DATE('JUNE192004', 'FXMONTHDDYYYY') AS formatted_date
    FROM dual;
○ 11. What is the distinction between implicit and explicit data type conversion? Give an example of each
  ■ SELECT '100' + 50 FROM dual;
○ 12. Why is it important from a business perspective to have data type conversions?
  ■ From a business perspective, it is important to have the ability to perform data type conversions in order to keep the data in the system accurate and consistent as well as adjust it based on your business needs. By making the data structured and uniform, it will also make querying the data more simple.

Database Programming with SQL 5-2: NULL Functions Practice Activities
- *Vocabulary:* Identify the vocabulary word for each definition below
  ○ Converts nulls to an actual value
    ■ Answer: COALESCE
  ○ Returns the first non-null expression in the list
    ■ Answer: COALESCE
  ○ Examines the first expression; if the first expression is not null, it returns the second expression; if the first expression is null, it returns the third expression
    ■ Answer: ISNULL
  ○ Compares two expressions; if they are equal, the function returns null; if they are not equal, the function returns the first expression
    ■ Answer: NULLIF
- *Try It / Solve It:* Use aliases to make the output more readable
  ○ 1. Create a report that shows the Global Fast Foods promotional name, start date, and end date from the f_promotional_menus table. If there is an end date, temporarily replace it with "end in two weeks." If there is no end date, replace it with today's date
    ■ SELECT promo_name AS "Promotional Name", start_date AS "Start Date", COALESCE(end_date, CURRENT_DATE) AS "End Date"

FROM f_promotional_menus
WHERE end_date IS NOT NULL, OR CURRENT_DATE + INTERVAL '14' DAY = CURRENT_DATE;
- 2. Not all Global Fast Foods staff members receive overtime pay. Instead of displaying a null value for these employees, replace null with zero. Include the employee's last name and overtime rate in the output. Label the overtime rate as "Overtime Status"
  - SELECT last_name AS "Last Name", NVL(overtime_rate, 0) AS "Overtime Status"
    FROM employees;
- 3. The manager of Global Fast Foods has decided to give all staff who currently do not earn overtime an overtime rate of $5.00. Construct a query that displays the last names and the overtime rate for each staff member, substituting $5.00 for each null overtime value
  - SELECT last_name AS "Last Name", NVL(overtime_rate, 5.00) AS "Overtime Rate"
    FROM employees;
- 4. Not all Global Fast Foods staff members have a manager. Create a query that displays the employee last name and 9999 in the manager ID column for these employees
  - SELECT last_name AS "Last Name", NVL(manager_id, 9999) AS "Manager ID"
    FROM employees;
- 5. Which statement(s) below will return null if the value of v_sal is 50?
  - a. SELECT nvl(v_sal, 50) FROM emp;
  - b. SELECT nvl2(v_sal, 50) FROM emp;
  - **c. SELECT nullif(v_sal, 50) FROM emp;**
  - d. SELECT coalesce (v_sal, Null, 50) FROM emp;
- 6. What does this query on the Global Fast Foods table return?
  - SELECT COALESCE(last_name, to_char(manager_id)) as NAME FROM f_staffs;
    - Answer: The query will result in a list of names from the f_staffs table. The query will check if the last_name column is NULL. If the last_name column is not NULL, it will return the last_name. If the last_name is NULL, it will convert the manager_id to a string using TO_CHAR() and return the manager_id as the result.
- 7a. Create a report listing the first and last names and month of hire for all employees in the EMPLOYEES table (use TO_CHAR to convert hire_date to display the month)

- ■ SELECT first_name AS "First Name", last_name AS "Last Name",
  TO_CHAR(hire_date, 'Month') AS "Month of Hire"
  FROM employees;
  - ○ 7b. Modify the report to display null if the month of hire is September. Use the NULLIF function
    - ■ SELECT first_name AS "First Name", last_name AS "Last Name",
      NULLIF(TO_CHAR(hire_date, 'Month'), 'September') AS "Month of Hire"
      FROM employees;
  - ○ 8. For all null values in the specialty column in the DJs on Demand d_partners table, substitute "No Specialty." Show the first name and s
    - ■ SELECT first_name AS "First Name", NVL(specialty, 'No Specialty') AS "Specialty"
      FROM d_partners;

Database Programming with SQL 5-3: Conditional Expressions Practice Activities
- ● *Vocabulary:* Identify the vocabulary word for each definition below
  - ○ Compares an expression to each of the search values
    - ■ Answer: DECODE
  - ○ An if-then-else expression whose value depends on the truth- value of a Boolean expression
    - ■ Answer: CASE
  - ○ Implements conditional processing within a SQL statement; it meets the ANSI standard
    - ■ Answer: CASE
- ● *Try It / Solve It*
  - ○ 1. From the DJs on Demand d_songs table, create a query that replaces the 2-minute songs with "shortest" and the 10-minute songs with "longest". Label the output column "Play Times"
    - ■ SELECT
      CASE
      WHEN duration = 2 THEN 'shortest'
      WHEN duration = 10 THEN 'longest'
      ELSE TO_CHAR(duration)
      END AS "Play Times"
      FROM d_songs;
  - ○ 2. Use the Oracle database employees table and CASE expression to decode the department id. Display the department id, last name, salary, and a column called "New Salary" whose value is based on the following conditions: If the department

id is 10 then 1.25 * salary; If the department id is 90 then 1.5 * salary; If the department id is 130 then 1.75 * salary; Otherwise, display the old salary

- SELECT department_id, last_name, salary,
  CASE
  WHEN department_id = 10 THEN salary * 1.25
  WHEN department_id = 90 THEN salary * 1.5
  WHEN department_id = 130 THEN salary * 1.75
  ELSE salary
  END AS "New Salary"
  FROM employees;

○ 3. Display the first name, last name, manager ID, and commission percentage of all employees in departments 80 and 90. In a 5th column called "Review", again display the manager ID. If they don't have a manager, display the commission percentage. If they don't have a commission, display 99999

- SELECT first_name, last_name, manager_id, commission_pct,
  CASE
  WHEN manager_id IS NOT NULL THEN manager_id
  WHEN commission_pct IS NOT NULL THEN commission_pct
  ELSE 99999
  END AS "Review"
  FROM employees
  WHERE department_id IN (80, 90);