

frevenueCertificate Program in Full Stack Developer
Full-Time Day Training Program
(420-SA5-AB) Database

A. General Information

Parameters	
Course Number	420-SA5-AB
Course Title (Long)	Database
Course Title (Short)	DB
Course Weighting	2-hour lecture + 3-hour laboratory + 3-hour homework
Schedule Date:	Start Date: 31-Jul-23 End Date: 18-Aug-23
Schedule Time:	9:00 am to 2:30 pm
Classroom:	Online via Microsoft Teams
Number of Credits (Units)	2.67
Number of Hours of Instruction	75
Competencies statement(s) and code(s)	00Q7 – Use a database management system
Prerequisite course	N/A
Cohort	FSD-07
Teacher	Khattar Daou, Ph.D.
Teacher's contact info	Khattar.Daou@JohnAbbott.qc.ca

Team Assignment 03

Deadline for submission: August 18, 2023

Late submissions will not be accepted.

Student Name	Student ID

In addition to tasks completed in Assignment 02, Assignment 03 covers the advanced topics of a databased design and implementation (view, function, stored procedure, trigger, and transaction objects).

Enhancing Data Entry and Verifying Data for MovinOn Inc.

David Bowers, general manager of MovinOn, met with his warehouse managers to discuss the progress you have made in developing the MovinOn database. Because MovinOn Inc. recently adopted a pension plan for all employees, the managers want to inform employees when they are fully vested in the plan, which happens after five years of service.

David asks if you can add a message (script) that indicates when an employee is fully vested based on the length of service. He also wants you to calculate an employee's years of service. For active employees, he wants you to hide the **End Date** field; for inactive employees, he wants you to hide the **Review field**. Finally, to help with data entry, the warehouse managers want to verify phone and cell phone area codes entered into Employee Data.

Complete the following:

- Add a new script that uses a calculation to accurately determine the years of service for each active and inactive employee.

A simple algorithm to determine whether an employee is vested: If the employee end date is null (the employee is not terminated yet) and the employee has a started (hired) date, then calculate the employee's years of service. Otherwise, the employee is not vested.

- Verify telephone area codes for employee phone numbers. For employees living in Oregon, the valid area codes are 541, 503, and 971; for employees living in Washington, the valid area codes are 425, 360, 206, 509, and 253; for employees living in Wyoming, the valid area code is 307. Warehouse managers should be able to enter phone area codes for other states not included in the lists.

A Simple algorithm: Check if the employee's years of service are greater than five years, then this employee is eligible, otherwise the employee is not vested yet. To Verify the telephone area codes for Oregon, Washington, and Wyoming, you can check the first three digits.

Orlando area code (OR): 541, 503, or 971. Otherwise print the message "OR phone area codes should be 541, 503, or 971".

Washington area code (WA): 425, 360, 206, 509, or 253. Otherwise print the message "WA phone area codes should be 425, 360, 206, 509, or 253".

Wyoming area code (WY): 307. Otherwise print the message "WY phone area codes should be 307".

For active employees, hide the End Date. For inactive employees, display the End Date.

- Create a script that returns the earnings of each employee. Maria wants to view each employee's annual salary. For salaried employees, the Salary field value represents the annual salary. However, for active, hourly paid employees, the field value displays the hourly rate but not an annual salary. For these employees, Don needs to multiply the hourly rate by 2,080, which is the product of 40 hours per week and 52 weeks per year.
- Don needs to calculate the number of years between an employee's start date and today's date to determine the number of years of service. For the employee age request, Don needs to calculate the number of years between an employee's date of birth and today's date to determine the employee's age.

In this project, you work with Kristina Romano, an accountant in the Washington warehouse of MovinOn Inc. Kristina needs to prepare a series of financial reports to present to David Bowers, owner of MovinOn, the warehouse managers, and the accountants at MovinOn at their annual meeting. They are naturally interested in how much revenue recent jobs have generated, as well as the labor costs that offset this revenue.

Kristina suggests that you use the following guidelines as you design the reports:

- Provide an appropriate title that clearly states the purpose of each report.
- Show all dollar amounts with a dollar sign and two decimal places.
- Before the annual meeting, Kristina plans to mail copies of some reports to the warehouse managers. Because she will send materials to each manager at different times, she needs a way to indicate which warehouse she wants before she prints the mailing label. The label she produces should include the manager's warehouse number next to their name, along with other appropriate mailing information. She wants you to name this report **WarehouseManagerReportLabels**.

The next report that Kristina needs should show the income from recent moving jobs. MovinOn charges \$.70 per mile plus \$.20 per pound for each job. From this total, Kristina deducts the driver's payment to determine the net income for the moving job. Drivers receive \$50 for each job plus their mileage rate (that is, the driver's rate multiplied by the number of miles plus \$50).

- Kristina asks you to create an income report that provides the job ID, the date of the move, the driver's name and rate, the mileage and weight of the job, and the income calculations (The income could be calculated as $\text{Mileage Actual} * 0.7$ plus $\text{Weight Actual} * 0.2$ from table Job Detail.) The Net Income = Income – Driver Payment. Kristina wants to show the total income, the total payments to

drivers, and the total net income. (*Hint: Consider creating a query as the basis for this report.*) Name the report **JobRevenueReport**.

- Kristina also needs a report that shows the income from the storage units. Group the information by warehouse and show the name of the renter so that it's easy to identify the renter by last name. The report should also include the rent per unit, the total rent for each warehouse, and a grand total of rent for all warehouses. Name the report **StorageRevenueReport**.
- Kristina suspects that MovinOn could increase its income from storage units by encouraging more long-term rentals. Add a calculation to StorageRevenueReport that shows how long each renter has rented a storage unit. Show the figure in years with one decimal place.

Additional questions that are frequently asked include the following:

1. How many storage units did the company do last year?
2. What percentage of the customers rented at least one unit?
3. What was the greatest number of rents by any one individual?
4. What is the average length of a rental period?
5. What are the company peak months for rents?

As per team effort, each team member must ask at least one question regarding the moving and create the corresponding script.

The answers to these questions can be created as database objects: views, functions, stored procedures, or triggers. What to design for each question is up to you, but you must cover all objects.

