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 02

Deadline for submission: August 13, 2023
Late submissions will not be accepted.

Student Name	Student ID

Case Study – The following exercise allows you to design a database

In Assignment 1, you created the database design for MovinOn Inc. The database will be used to manage data about the company and its operations. David Bowers, the company's president, and Robert Iko, the company's information systems specialist, reviewed your design and worked to finalize it. The Figure 2.1 shows the database design that David and Robert approved.

David and Robert are satisfied that the design in Figure 2.1 will output the data needed to manage the business. With the design approved, you can begin developing the database.

1. Use your own design from Assignment 1 or compare the database design you developed with the one shown in Figure 2.1. If necessary, change your database and table designs to match the ones shown in the figure. If you determine that you need to add or change fields in your table designs, be certain to carefully consider and then set the properties that will support the data being stored in those fields.

2. Create a new database named **MovinOn_YourInitials**.

3. Use the database design shown in Figure 2.1 as a guide to help you develop the database. Be certain to specify the field names, data types, field descriptions, and field sizes as you create each table. Create validation rules as necessary to ensure that users enter consistent, complete, and accurate data in the tables. During the discovery phase (database analysis and logical design), David and Robert gave you some important information that you must consider in your table designs.
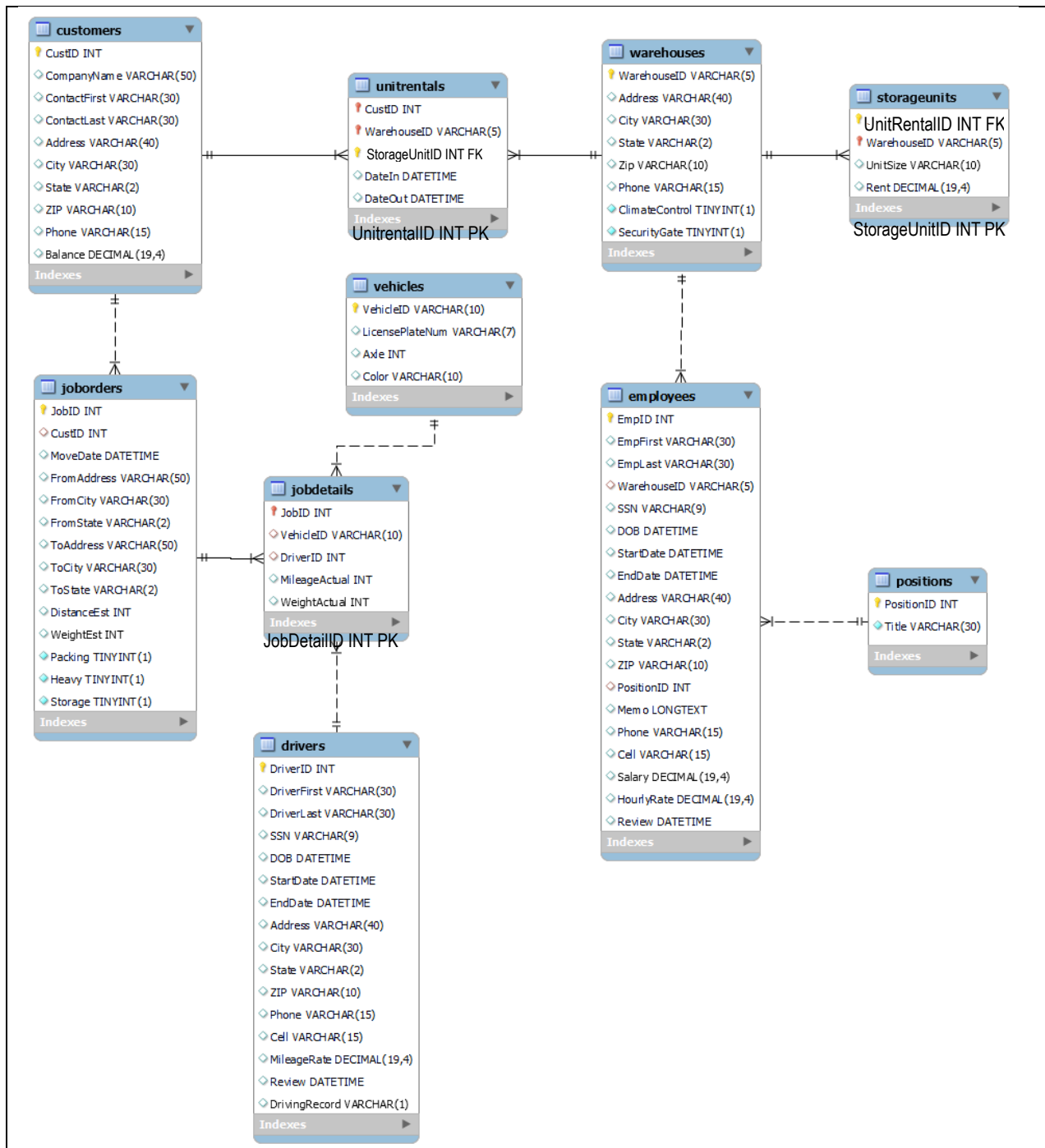

customers
- CustID INT
- CompanyName VARCHAR(50)
- ContactFirst VARCHAR(30)
- ContactLast VARCHAR(30)
- Address VARCHAR(40)
- City VARCHAR(30)
- State VARCHAR(2)
- ZIP VARCHAR(10)
- Phone VARCHAR(15)
- Balance DECIMAL(19,4)
- Indexes

unitrentals
- CustID INT
- WarehouseID VARCHAR(5)
- StorageUnitID INT FK
- DateIn DATETIME
- DateOut DATETIME
- Indexes
UnitrentalID INT PK

warehouses
- WarehouseID VARCHAR(5)
- Address VARCHAR(40)
- City VARCHAR(30)
- State VARCHAR(2)
- Zip VARCHAR(10)
- Phone VARCHAR(15)
- ClimateControl TINYINT(1)
- SecurityGate TINYINT(1)
- Indexes

storageunits
- UnitRentalID INT FK
- WarehouseID VARCHAR(5)
- UnitSize VARCHAR(10)
- Rent DECIMAL(19,4)
- Indexes
StorageUnitID INT PK

vehicles
- VehicleID VARCHAR(10)
- LicensePlateNum VARCHAR(7)
- Axle INT
- Color VARCHAR(10)
- Indexes

joborders
- JobID INT
- CustID INT
- MoveDate DATETIME
- FromAddress VARCHAR(50)
- FromCity VARCHAR(30)
- FromState VARCHAR(2)
- ToAddress VARCHAR(50)
- ToCity VARCHAR(30)
- ToState VARCHAR(2)
- DistanceEst INT
- WeightEst INT
- Packing TINYINT(1)
- Heavy TINYINT(1)
- Storage TINYINT(1)
- Indexes

jobdetails
- JobID INT
- VehicleID VARCHAR(10)
- DriverID INT
- MileageActual INT
- WeightActual INT
- Indexes
JobDetailID INT PK

employees
- EmpID INT
- EmpFirst VARCHAR(30)
- EmpLast VARCHAR(30)
- WarehouseID VARCHAR(5)
- SSN VARCHAR(9)
- DOB DATETIME
- StartDate DATETIME
- EndDate DATETIME
- Address VARCHAR(40)
- City VARCHAR(30)
- State VARCHAR(2)
- ZIP VARCHAR(10)
- PositionID INT
- Memo LONGTEXT
- Phone VARCHAR(15)
- Cell VARCHAR(15)
- Salary DECIMAL(19,4)
- HourlyRate DECIMAL(19,4)
- Review DATETIME
- Indexes

positions
- PositionID INT
- Title VARCHAR(30)
- Indexes

drivers
- DriverID INT
- DriverFirst VARCHAR(30)
- DriverLast VARCHAR(30)
- SSN VARCHAR(9)
- DOB DATETIME
- StartDate DATETIME
- EndDate DATETIME
- Address VARCHAR(40)
- City VARCHAR(30)
- State VARCHAR(2)
- ZIP VARCHAR(10)
- Phone VARCHAR(15)
- Cell VARCHAR(15)
- MileageRate DECIMAL(19,4)
- Review DATETIME
- DrivingRecord VARCHAR(1)
- Indexes

Figure 2.1: MovinOn Inc. Database Design

4. Check your database carefully to ensure that you have created all the tables, that you have created all the fields and set their properties.

5. Check all your tables for accuracy and ensure that all your relationships have been established according to the design shown in Figure 2.1.

6. Add records in each table.
In some cases, you might need to import data stored in an Excel workbook into a table. If you have not created the table in the database, you can import the data and create the table at the same time. Robert received some Excel files from David containing data that he needs to store in the database. One of those files, Employee.xlsx (located in the Assignment 2 Data folder), contains data about the employees. Robert decides to create tblEmployee table by importing the data from the Employee.xlsx Excel file.

7. Now that you have worked with Robert Iko at the MovinOn moving and storage company to develop the design for the MovinOn database, he explains that their most pressing task is to serve the needs of the human resources department. Darnell Colmenero is an administrative assistant responsible for many human resources tasks, and asks for your help extracting information from the MovinOn database. Although an outside company processes payroll for MovinOn, Darnell and others maintain complete employment information and strive to meet management's goal of recruiting and retaining skilled, qualified employees who are well trained in customer service. Having employees working in three warehouses in three states has made it difficult to track employee information, and the potential merger and expansion means that human resources must take advantage of the MovinOn database to maintain and retrieve employee information. Darnell asks for your help in filtering data and creating queries that provide the information that he needs.

Create queries to answer the following questions:
8. The truck drivers for MovinOn are special type of employee, and their data is stored in a table separate from the rest of the employees because of driving certification requirements. Drivers are certified to drive trucks with a specified number of axles, and MovinOn must be sertain that a driver is certified to drive a particular truck.
when Darnell meets with David Bower, the general manager, he learns that only drivers who have a driving record of "A" or "B" are allowed to drive the large trucks (those with four axles or more). He asks you to identify the drivers qualified to drive the four-axle trucks. Because he will use the list you create to call drivers when he needs a substitute, include the phone numbers and driving record for each driver. Save the script as **1_4AxleDrivers**.

9. Darnell also learns that he must immediately review drivers who have a driving record lower that "A" or "B". those drivers who have a record of "C" will be put on notice, and those with a record "D" or "F" can be terminated immediately. List the drivers with these low driving records, and sort the list so that Darnell can easily determine the driving record of each driver. Because he can enroll long-term drivers in a training program, he also needs to know when each driver started working for MovinOn and whether the driver is still employed. Save the script as **2_DriversWithLowRecords**.

10. If drivers are to be terminated because of their driving record, Darnell wants to include them in an additional list. Create this list for Darnell, and include all relevant employment information. Save this script as **3_DriversForTermination**.

Darnell is completing a small business certification form for the U.S. Department of Labor, and needs quick answers to some basic questions about employees. Answer the following questions:

11. In what states or provinces do the employees reside? Save this script as **4_EmployeeStatesProvinces**

12. How many employees in each city? Save this script as **5_EmployeesPerCity**

13. Who makes the highest salary? Select Only one. Save this script as **6_SalariedEmployees**

14. Who is paid the lowest hourly rate? Select Only one. Save this script as **7_EmployeeLowWage**

15. How many types of jobs are offered at MonivOn? Save this script as **8_JobPositions**

16. How many people are employed in each type of job? Save this script as **9_JobsPerPosition**

17. To prepare for a payroll, Darnell must provide a list of list of employees that includes their salary or hourly pay rate. The list must also include Social Security Numbers and employee IDs so that an outside firm can properly process the payroll. Produce an employee list that provides this information, and sort it so that it's easy to find an employee by name. for those employees who are on a salary, the list should show their monthly wage. Save this script as **10_Payroll**.

18. Darnell sometimes needs to contact the warehouse managers, accountants, administrative assistants, and other employees at the warehouse where they work. Create a contact list that he can use to phone employees, and that contains enough information to identity employees, their positions, and their warehouses along with the warehouse phone number. Because Darnell might eventually use this list as the basis for a report, the employee's name should appear as one full name, with the last name first. When you show this query to Darnell, he realizes that it would be more helpful if he could specify a particular warehouse before producing the list, and then see the contact information only for the employees who work in that warehouse. Create a script that meets these needs, saving it as **11_EmployeeContactByWarehouse**.

19. MovinOn knows that having a workforce of long-term employees improves customer service and avoids the high expense of training new employees. Darnell wants to know if one warehouse is more effective at retaining employees than another. Create an employee list that calculates the number of years each employee has worked for MovinOn. Organize the list by job title within each warehouse. Save the script as **12_EmployeeLongevity**.

20. Darnell learns that the manager of the Oregon warehouse has decided to give his hourly employees a 10% raise. He asks you to list all the employees who work in the Oregon warehouse, and show the old rate along the new rate after a 10% increase to their hourly pay rate. The increase applies only to hourly employees. Save the script as **13_OregonRateIncrease**.

Submit the zipped folder to your instructor with using My JAC Portal (OmniVox Services).