Subject:	Database Development 271/281
Assessment:	Assignment 2
Total:	50 Marks
Due Date	2023-03-29

Introduction

The **AdventureWorks** sample database supports standard online transaction processing scenarios for a fictitious bicycle manufacturer named *Adventure Works Cycles*. The company manufactures and sells bicycles to both individuals and stores located globally. *Adventure Works Cycles* also purchases products from different vendors for resale. The company employs 290 employees, with several regional sales teams located throughout their market base. Scenarios that are represented in the sample database include Manufacturing, Sales, Purchasing, Product Management, Contact Management, and Human Resources.

All questions in this assignment relate to the AdventureWorks OLTP database. It is important that you study and understand the structure of the AdventureWorks database before attempting the questions below. For background information regarding the AdventureWorks Sample OLTP Database, visit the following links:

- https://docs.microsoft.com/en-us/previous-versions/sql/sql-server-2008/ms124825(v=sql.100)
- https://www.sqldatadictionary.com/AdventureWorks2014.pdf
- https://dataedo.com/download/AdventureWorks.pdf

Download the AdventureWorks sample database and mount it on your computer. Instructions to download and restore the database are found on this site https://docs.microsoft.com/en-us/sql/samples/adventureworks-install-configure?view=sql-server-ver15&tabs=ssms.

Write all code using Transact SQL (T-SQL). Save all answers in one **.sql** file and upload it on Teams Assignments before the due date. If multiple files are uploaded, only the first file will be marked.

Name your file using the prescribed assignment naming conventions. Separate your answers into batches and use comments to indicate the question number. Additional marks are allocated for using the best practices for database programming including coding standards, comments, object naming conventions, indentation, exception handling and code efficiency.

Outline

Provide the T-SQL code to answer questions 1 to 5. Each question carries 10 marks.

1. Display a list of all Level 1 employees showing the *BusinessEntityID*, national ID number, first name, last name, department name and job title. Ensure that an employee is associated with only the current department (i.e. no duplicates if an employee has moved from one department to another). Below is a sample of expected results:

BusEntID	NationalID	FirstName	LastName	Department	JobTitle
2	245797967	Terri	Duffy	Engineering	Vice President of Engineering
16	24756624	David	Bradley	Marketing	Marketing Manager
25	519899904	James	Hamilton	Production	Vice President of Production
234	184188301	Laura	Norman	Executive	Chief Financial Officer
263	441044382	Jean	Trenary	Information Services	Information Services Manager
273	112432117	Brian	Welcker	Sales	Vice President of Sales

(6 row(s) affected)

2. Use Common Table Expressions (CTE) to write a query that displays the sum of all purchase orders and sum of all sales orders per each shipping method using the *TotalDue* column. All shipping methods must be displayed regardless of whether they have matching sales or purchases. Show the *ShipMethodID*, name, purchase orders total and sales orders total. Round all values to 2 decimal places. Hint: Use mutliple CTEs. Below is a sample of expected results:

ShipMethodID	Name	TotalSales	TotalPurchases
5	CARGO TRANSPORT 5	90775446.99	32305691.40
4	OVERNIGHT J-FAST	NULL	11965191.19
3	OVERSEAS - DELUXE	NULL	8002939.00
1	XRQ - TRUCK GROUND	32441339.12	3330909.29
2	ZY - EXPRESS	NULL	14874601.77

(5 row(s) affected)

3. Adventure Works Cycles has two types of customers: individuals and stores. The **Sales.Store** table maintains data specific to stores while the **Person.Person** table contain details of all people involved with AdventureWorks including employees, individual customers, and vendor contacts. The person type in the **Person.Person** table can take one of the following two-letter codes: SC (Store Contact), IN (Individual Customer), SP (Sales Person), EM (Employee), VC (Vendor Contact) and GC (General contact). Write a query that displays the title, first name, last name, person type description (e.g. 'Sales Person') instead of the person type code. Below is a sample of expected results:

Title	FirstName	LastName	Person Type
	Ken	Sánchez	Employee
	Terri	Duffy	Employee
	Roberto	Tamburello	Employee
	Rob	Walters	Employee
Ms.	Gail	Erickson	Employee
Mr.	Jossef	Goldberg	Employee
	Dylan	Miller	Employee
	Diane	Margheim	Employee

4. Use a cursor to display all instances when the product 707 went on special offer. Show the product number and product name at the top followed by the special offer history as shown below.

```
Product Number: HL-U509-R
```

```
Product Name: Sport-100 Helmet, Red
Special Offers:
2011-05-01 to 2014-11-30  No Discount
2011-05-31 to 2014-05-30  Volume Discount 11 to 14
2011-05-31 to 2014-05-30  Volume Discount 15 to 24
2012-05-30 to 2012-06-29  Sport Helmet Discount-2002
2013-05-30 to 2013-06-29  Sport Helmet Discount-2003
```

5. Create a view called **vwStoreSales** that displays the total sales per year for each customer. Use the sum of total due to calculate the total sales. Include the *CustomerID*, store name, order year and total sales order rounded to 2 decimal places.
   Test the view by creating a query that retrieves total sales above $100 000 sorted by *CustomerID* in ascending order and then by order year in descending order. Below is a sample of expected results:

CustomerID	Store Name	Year	YearSales
29486	Riders Company	2013	170175.52
29486	Riders Company	2012	259873.01
29488	Nationwide Supply	2014	128689.75
29488	Nationwide Supply	2013	121115.11
29489	Area Bike Accessorie	2013	228760.33
29497	Great Bikes	2014	103227.00
29497	Great Bikes	2013	265207.13
29497	Great Bikes	2012	299603.98
29497	Great Bikes	2011	121846.19
29499	Valley Toy Store	2013	145250.68

Mark Allocation

Criteria	Weight
Questions 1-5 [10 marks each]	**50**
Total	**50**

Additional Information

- Submit your assignment electronically in one **.sql** file on Teams before the due date.
- If multiple files are uploaded only the first file will be marked.
- This is an individual assignment. All work must be done on your own.
- Plagiarism is a serious offence. Belgium Campus uses software that can scan for plagiarism and a student caught doing this will get 0 for this assignment.
- No mark will be awarded if the assignment is not uploaded via Teams Assignments.
- Late assignments will not be accepted; missing the deadline is an automatic 0.
- Any form of cheating will be taken seriously and may result in disciplinary action including disqualification from future assessments.
- Auto-generated scripts will not be acceptable under any circumstances.