

# Lab 8

Start Assignment

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**Due** Tuesday by 11:59p.m.    **Points** 20    **Submitting** a file upload    **File Types** docx  
**Available** until Dec 6 at 11:59p.m.

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## Statement of Authorship

- Lab to be done individually
- In order to be graded, the following Statement of Authorship must be present at the beginning of the document
- I, Firstname Lastname, student number 123456789, certify that this material is my original work. No other person's work has been used without due acknowledgment and I have not made my work available to anyone else.
- Replace Firstname Lastname with your name and 123456789 with your student number

## Introduction

This assignment deals with a case study describing a company for which you will create an Entity Relationship Diagram (ERD).

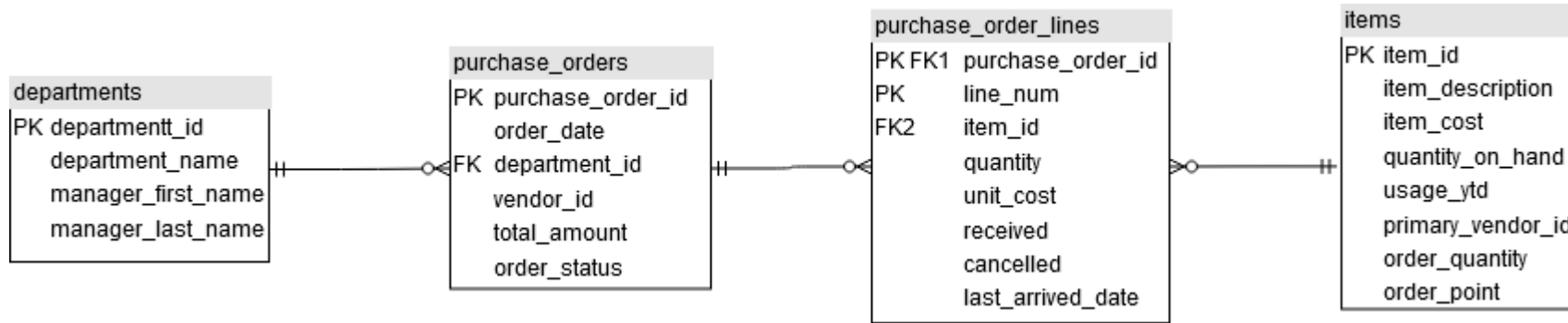
## Overview

- Normalize all the reports that you find in the case
- Use <https://app.diagrams.net>  (<https://app.diagrams.net/>) to produce an ERD for your system, hand-drawn ERDs will not be accepted

## Sample ERD Segment



sample is meant to illustrate what is expected. If a table has more than one foreign-key, label them FK1, FK2, etc.



Start Word and create a file named **lab8.docx**. Do all of your normalization rough work in the document. After all of your rough work has been done, create the ERD in <https://app.diagrams.net> → (<https://app.diagrams.net>). Once the diagram is complete, save it. After saving the file (it will be in XML format), export the file as a PNG. Place this PNG file in the Word document. This is the file you will submit.

## Vintage Console Nation - A Database Design Case

Vintage Console Nation (VCN) is a burgeoning company that grew out a small basement operation that originally imported modchips for game consoles and then resold the modchips. VCN now specializes in buying vintage and clone consoles from offshore suppliers (most of them in Pacific Rim countries) and then distributing the consoles to retailers. The items carried by VCN include vintage and clone consoles for Playstation 1 and 2, Nintendo 64 and SNES, and Dreamcast. In addition, the company also distributes controllers, memory packs, rumble packs, etc.

The company does not sell directly to individuals but as mentioned, sells to established retailers. VCN has sales reps in the field who take orders from electronic stores and department stores. There are also inside sales reps who take orders over the phone or through fax and e-mail. There is also a business-to-business web application set up to accommodate incoming orders.

Whatever the source of the order there is one common order entry application that processes sales orders as follows:

- Sales order header information (Customer Id, Sales Rep ID, etc.) is entered
- Line item information (Product ID, Quantity, etc) is entered
- Inventory is checked for availability and updated
- Customer credit is checked
- The sales order is written to the database as an open sales order
- A shipping order is sent to Distribution (a copy of the sales order)

When distribution ships product, data is entered to update the open order data. The data entered is amount shipped for every line item and date of shipment. The inventory is updated.

Once each day invoices are written for all shipped orders and the open order data is updated and the invoice data is used to update the customer's A/R balance.

Throughout the month payments are received from customers and the customer's balances are updated. At month-end, the customer statements are run and sent to the customers.

At any time during the month:

- It may be necessary to check the status of a customer's order
- At any time during the month, inventory status may be analysed
- At any time during the month A/R balances may be analysed

Throughout the month it is possible that the on-hand quantity for an item may reach the reorder point. When this happens, a purchase order is written and sent to the vendor. An open purchase order entry is inserted in the database to record goods on order and to permit processing later. When the goods are received the open purchase order and inventory are updated. When the vendor's invoice is received, the A/P clerk matches the invoice to the open purchase order and enters the invoice data for A/P processing at month-end. At month-end cheques are written to the vendors and the invoices paid are updated in the database.

## Sales Order

Sales Order ID 20115				
Order Date 12-Apr-2022				
Customer ID 7802				
Name Gray Market Electronics				
Address 1175 Jolly Roger Blvd.				
Ancaster, ON				
L9T 3Y7				
Item ID	Description	Quantity	Price	Amount
304	SONY PS 2 Clone	50	50.00	2,500.00
452	MS Controller Clone	20	10.00	200.00
Total				2,700.00

## Invoice

Invoice ID 25154  
Invoice Date 19-Apr-2022  
Sales Order ID 20115

Customer ID 7802    Name Gray Market Electronics  
Address 1175 Jolly Roger Blvd.  
Ancaster, ON  
L9T 3Y7

Item ID	Description	Quantity	Price	Amount
304	SONY PS 2 Clone	10	50.00	500.00
Total				500.00

## Inventory Status

Item ID	Description	On Hand	Allocated	On Order	Available
281	Memory Pack	48	28	50	70
307	PS 2 Stand	12	5	10	17
		(A)	- (B)	+	(C) = (D)

## Purchase Order

Purchase Order ID 31087    Order Date 11-Apr-2022

Vendor ID 403    Name Knock Off Electronics

Address 318 Greasy Jungle Rd.  
Kuala Lumpur  
Malaysia

Item ID	Description	Quantity	Cost	Amount
215	PS 1 Controller Clone	10	5.00	50.00
219	PS 1 Screen	25	12.00	300.00
304	SONY PS 2 Clone	20	45.00	900.00
307	PS 2 Stand	10	8.00	80.00
Total				1,330.00

## Items On Order

Item ID	Description	Vendor ID	Purchase Order ID	Quantity
215	PS 1 Controller Clone	403	31087	10
215	PS 1 Controller Clone	518	32034	25
219	PS 1 Screen	403	31087	25
275	Rumble Pack	188	30095	20
304	SONY PS 2 Clone	403	31087	20
307	PS 2 Stand	403	31087	10
452	MS Controller Clone	52	32354	25

## A/P Cheque

Date 30-Apr-2022 Cheque Number 55041

Vendor ID 403

Name Knock Off Electronics

Amount \$\*\*\*\*22,000.00

Twenty Two Thousand Dollars and 00 Cents

## A/P Inquiry

Invoice To Be Paid By 15-Apr-2022

Vendor		Vendor Invoice	
ID	Name	ID	Amount
403	Knock Off Electronics	421	10,000.00
518	Midnight Micro	11087	5,000.00
518	Midnight Micro	11342	3,000.00
644	Copy Cat Mfg.	P-904-91	2,000.00
704	Pirate Cove Works	11087	450.00

Note: On purpose, two vendor invoices are shown with the same invoice number. Is this coincidence likely? But, can you guarantee that it would never occur? Many companies use a voucher system where they create their own internal document to reflect the receipt of a vendor's invoice?

## Open Purchase Order Inquiry

Purchase Order ID	Vendor ID	Item ID	Quantity	Purchase Order Date
29932	403	215	25	15-Feb-2022
		291	50	15-Feb-2022
29945	644	275	12	22-Feb-2022
		304	10	22-Feb-2022

Of primary interest here are the Purchase Orders overdue, i.e. the ones where the goods have not been received yet.

Lab 8				
Criteria	Ratings			Pts
ERD (11 entities & 11 relationships)	16 pts Full Marks		0 pts No Marks	16 pts
Rough work Rough normalization work, showing progression of NF. Your rough work will not be scrutinized, it just needs to be present to ensure that you’ve done it.	4 pts Full Marks	2 pts Partial Marks	0 pts No Marks	4 pts
Total Points: 20				