

Part 1 (5 points)

- Enter the normalized entities and attributes from the first part of the Normalization Exercise 6 in your design tool. Do not add any extra entity or attribute. (20% of grade)
- Establish the relationships between entities using the Crow's Foot notation. Please make sure each relationship line is completely visible and don't cross lines. (80% of grade)

Note: Don't add any unnecessary relationship. An unnecessary relationship clutters the design and may degrade the database and application performance.

- Upload the ERD as an image or in the pdf format to here.

Done with Normalization

Address	Applicant	Job	Referral
*AddressID	*ApplicantID	*JobID	*ApplicantID
StreetNumber	ApplicantLName	JobDescription	*JobID
City	ApplicantFName		ApplicationDate
State	Phone		EmployeeID
ZipCode	Email		ApplicationStatus
			ReferralBonus

ApplicantAddress	Employee
*ApplicantID	EmployeeID
*AddressID	EmployeeLName
	EmployeeFName
	EmployeeDepartment

What To Do Next?

- Create entities in Design Tool
- Don't add any additional entity or attribute
- Establish relationships between entities
- Pay attention to Multiplicity
- Pay attention to type of relationship
 - Identifying vs Non-Identifying
- Avoid unnecessary relationships
- Label PKs and FKs

Watch this video for Part 1's instructions.

[Normalization Exercise 6 Video](#)

Part 2 (4 points)

Our data usage pattern is to find the total sold quantity of a product regardless of the customer. Use the referencing design technique and the data provided below to design a MongoDB database. Create the database on MongoDB Atlas that includes document(s) reflecting the provided data. (50% of grade)

Then use the MongoDB Compass, JavaScripts and MongoDB Aggregation Pipeline to calculate the total sold quantity of a product regardless of the customer. (50% of grade)

Submit screenshots of the created document(s) and calculation in the pdf format.

Provided data:

CustomerID	LastName	FirstName	EmailAddress	ProductID	TotalOrderQuantity
30000	McCoy	James	james12@adventure-works.com	867	14
30000	McCoy	James	james12@adventure-works.com	868	11
30000	McCoy	James	james12@adventure-works.com	869	53
30000	McCoy	James	james12@adventure-works.com	894	18
30002	McGuel	Alejandro	alejandro1@adventure-works.com	875	1
30004	McLin	Nkenge	nkenge0@adventure-works.com	868	2
30005	McPhearson	Nancy	nancy3@adventure-works.com	889	1
30005	McPhearson	Nancy	nancy3@adventure-works.com	892	2

The following files were posted on the class website. They will help you prepare for the lab.

[How to Get Started with MongoDB Atlas and MongoDB Compass](#)

[MongoDB-Calculate Total \(Using Referencing\)](#)

[MongoDB-Calculate Average \(Using Embedding\)](#)