

## HW-1 Normalization

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### Overview

- This homework is worth 10 points (10%) toward your final grade.
- It is due on 2/6/2020, 11:59 pm.
- Late policy applies (grace period of 2 days with 20% late penalty). After that time, no late work will be accepted.
- Save your Un-normalized, 1<sup>st</sup> NF, 2<sup>nd</sup> NF and 3<sup>rd</sup> NF results in a document using tools such as word, excel, text or similar format and convert into pdf, as shown in the example given below.
- Submit your assignment in PDF format on Canvas.

### Instructions

- Read the attached 'Eden Landscaping' customer forms to become familiar with the business details. There are 2 forms: 'Customer Record' and 'Customer Invoice', extracted from case study workbook.
- Go through all data elements/attributes listed in the forms and organize all attributes to create 3NF design so that it reduces redundancy and dependency of data.
- Your un-normalized, First and Second Normal Forms will NOT be scrutinize for grading purposes. They are the means to the end (3NF). However, you need to display unnormalized, 1<sup>st</sup> NF, 2<sup>nd</sup> NF and 3<sup>rd</sup> NF.
- Identify each **ENTITY** names by highlighting them in **yellow color** and list each attributes.
- Identify the **Primary Keys** and **Foreign Keys**, if any, and show them within a bracket next to the field name, e.g. **Order\_ID (PK)**, **Product\_ID (FK)**, etc. and highlighting them in a different color other than yellow e.g. **grey color**.
- If an entity does not change from first to second normal form, then *simply copy and paste the data into the second normal form* column to show that the data is already in second normal form, and so on.
- Your final 3NF column should contain all the data in all the documents organized by entity, listing all attributes in each entity with primary and foreign keys, if any.
- Ensure that each attribute is functionally dependent on the primary key for that entity. If an attribute appears multiple times, list it only once in your final normalization design, e.g. Customer Name.

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### Example of sample output, from class practice: EZ Chair Company

UNNORMALIZED	FIRST NORMAL FORM	SECOND NORMAL FORM	THIRD NORMAL FORM
<b>Customer Order</b>	<b>Customer Order</b>	<b>Customer Order</b>	<b>Order</b>
Order Number	Order Number	Order Number	<b>Order Number (PK)</b>
Order Date	Order Date	Order Date	Order Date
Delivery Date	Delivery Date	Delivery Date	Delivery Date
Customer Discount	Customer Discount	Customer Discount	discount amount
discount amount	discount amount	discount amount	invoiced amount
invoiced amount	invoiced amount	invoiced amount	<b>customer number (FK)</b>
customer number	customer number	customer number	order total
customer name	customer name	customer name	
Contact	Contact	Contact	<b>Customer</b>
ContactType	ContactType	ContactType	<b>customer number (PK)</b>
bill to address	bill to address	bill to address	customer name
bill to city	bill to city	bill to city	Contact
bill to state	bill to state	bill to state	ContactType
bill to zip	bill to zip	bill to zip	bill to address
ship to address	ship to address	ship to address	bill to city
ship to city	ship to city	ship to city	bill to state
ship to state	ship to state	ship to state	bill to zip
ship to zip	ship to zip	ship to zip	ship to address
** Product Number	order total	order total	ship to city
** Description			ship to state
** quantity ordered	<b>OrderDeail</b>	<b>OrderDeail</b>	ship to zip
** unit price	Order number	Order number	
order total	Product Number	Product Number	<b>OrderDeail</b>
	Product Description	Quantity	<b>Order number (PK) / (FK)</b>
	Quantity	Total	<b>Product Number (PK) / (FK)</b>
	unit price		Quantity
		<b>Product</b>	total
		Product Number	
		Product Description	<b>Product</b>
		unit price	<b>Product Number (PK)</b>
			Product Description
			unit price

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### INPUT

Please use below 2 forms for this Normalization homework assignment:

Your Normalization design should put together info from these 2 forms. DO NOT carried away with normalization, i.e. do not create unnecessary entities.

<i>Eden Landscaping, Inc.</i> 8624 Harrison Rd. Longmont, MO 63030 (314) 842-2561	
<b>Customer Record</b>	
Name _____	<div>Mowing <input type="checkbox"/></div> <div>Landscaping <input type="checkbox"/></div> <div>Other <input type="checkbox"/></div>
Address _____ _____	
City, State, ZIP _____	
Phone _____	
Referred By _____	Customer Since _____
Notes _____ _____ _____ _____	

DATE:

8624 Harrison Rd.  
Longmont, MO 63030  
(314) 842-2561

NAME:
ADDRESS:
CITY, ST, ZIP:
PHONE:

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