CECS 323 LAB DRAW.IO TIPS AND TRICKS

OBJECTIVE:

Give you experience in doing a basic UML and relation scheme diagram in diagrams.net. Most your homework in this course will require that you use diagrams.net to do your models.

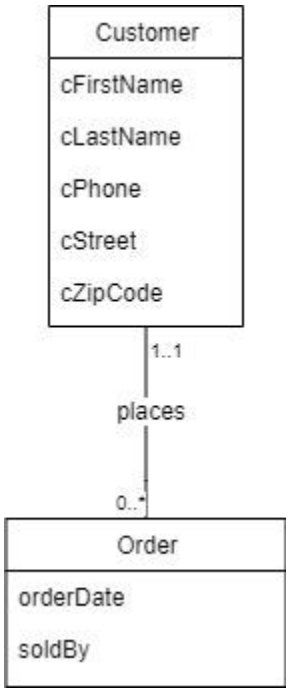
INTRODUCTION:

It will quickly become evident to you that diagrams.net is not enforcing any of the business rules of the UML modeling languages when you build these diagrams. That must be up to you. The relation scheme diagraming that we will do in this course uses a proprietary graphical language that was developed at CSULB. While this language provides a very useful function, there is no direct support for it in standard diagraming tools. We will go over how to make the best use of diagram.net to produce those models, but the tool support for the relation scheme language is even less than it is for UML diagrams.

If you go to BeachBoard | Content | Schedule | Week 1, Session 1 and go to the checklist, you will see links there to two short videos that will walk you through using Diagrams.net for drawing UML diagrams and relation scheme diagrams. Please take the time to view those before coming to lab, it will give you a "leg up" on using this tool.

For a quick tutorial on how to draw **UML** diagrams using diagram.net, please read through the article here.

PROCEDURE:



At this point in the semester, do not get too worried about the concepts behind the diagrams, we will be introducing you to those along the way. But I had to do some samples that were complex enough that you could see all the ingredients to the models that you are likely to be doing in this class. I **will**, however, be going over a few modeling guidelines and standards.

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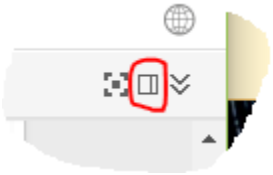
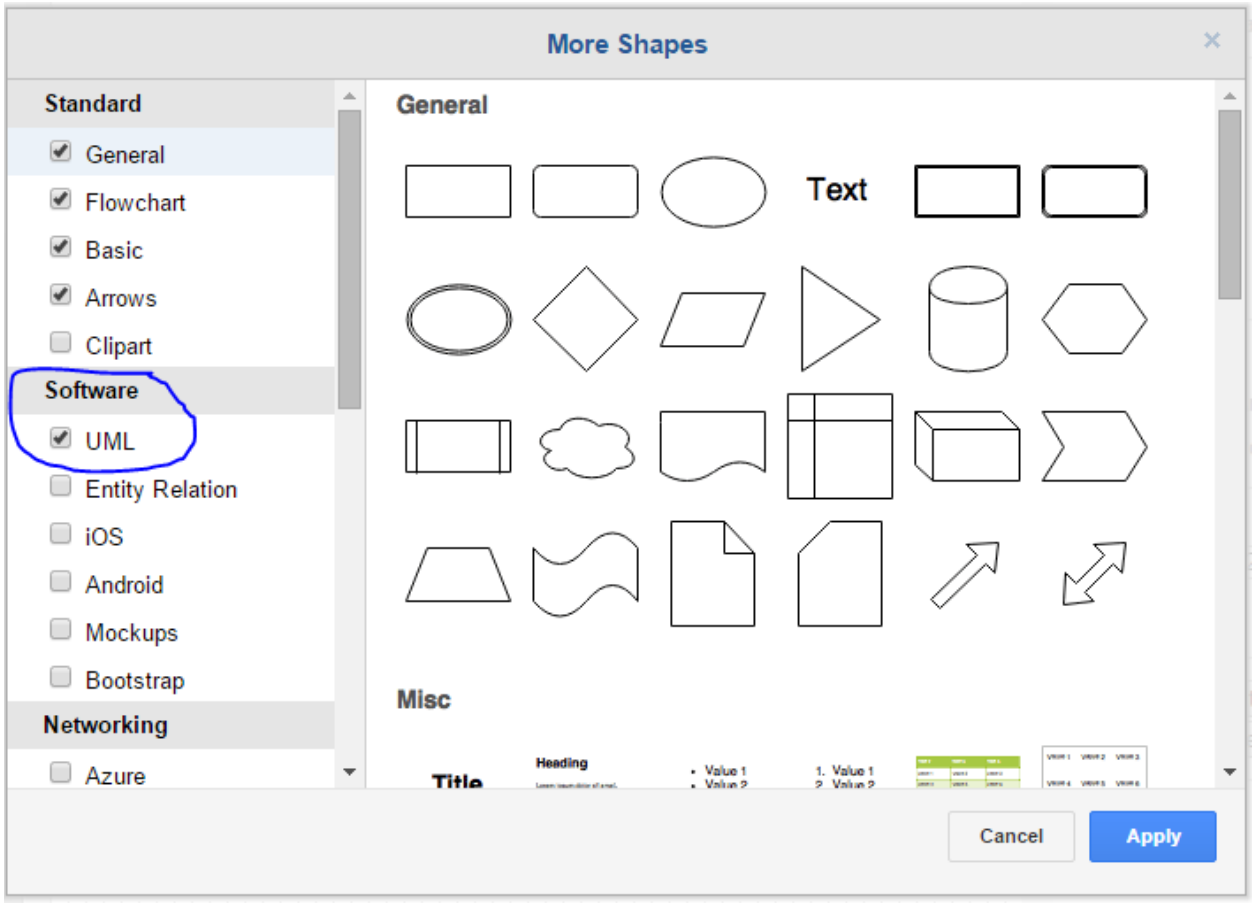
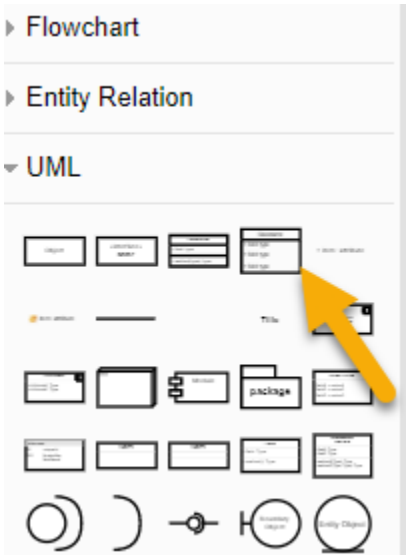
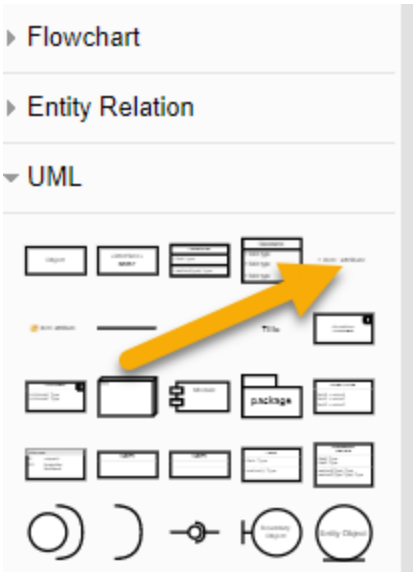
1. The UML class diagram:
    a. For starters, you can access diagrams.net from: https://www.diagrams.net.
        i. You can run diagrams.net strictly as a web application, or you can use the download button at the left of the home page to install it to your computer. It does not really matter how you run it; the functionality is the same.
    b. Diagrams.net has a format panel that you can hide/expose by using a button in the upper right-hand corner of the display:  . Clicking on that toggles the format panel. Often, you will want to hide that because real estate on the screen is going to be precious. In the instructions to follow, I will mention the format panel from time to time as a way for you to get access to configuration changes that you can make to a given object in your model.
    c. For your first UML diagram:
        i. Select the UML stencil from the pulldown
            1. Select the stencil pulldown
            2. "More Shapes" to get the following:



ii. The class object is the top row of this stencil.



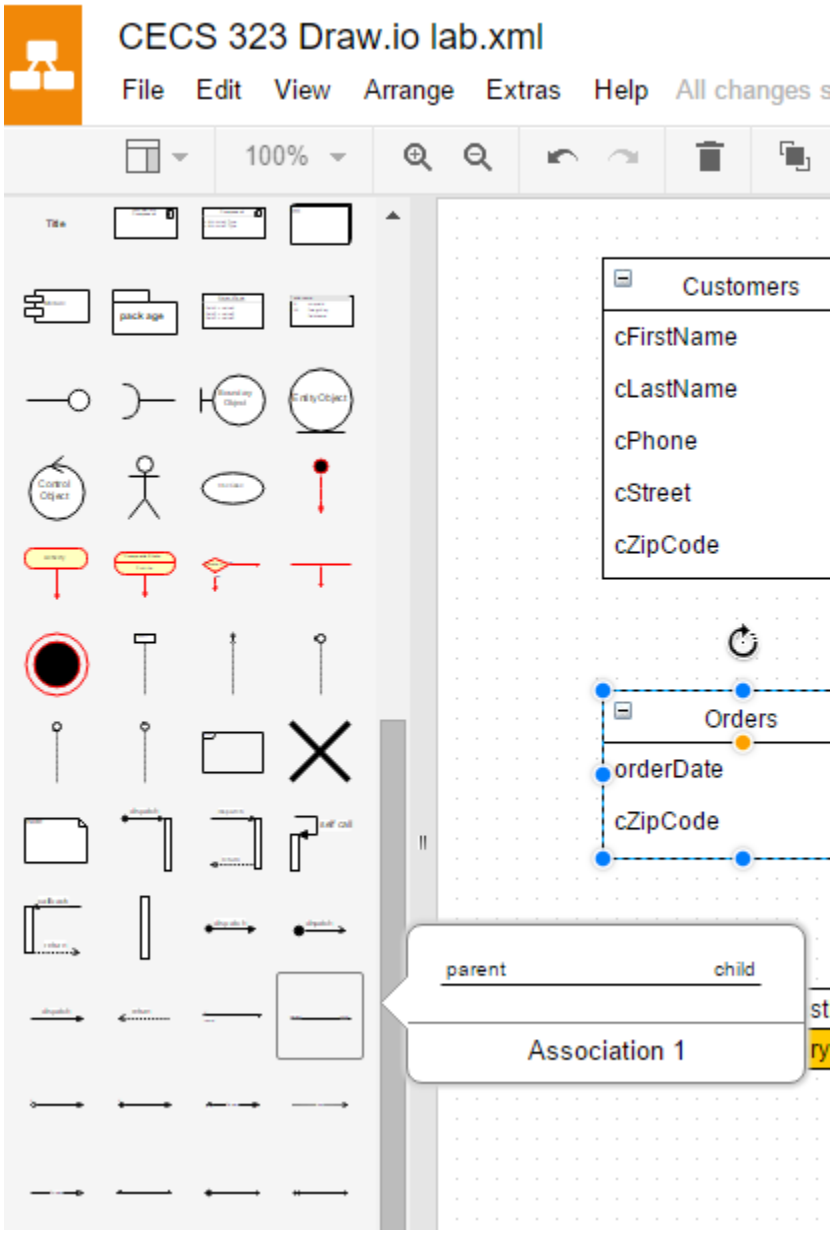
1. Diagram.net will put the class in center of the canvas, so you'll have to drag it over to where you want it. Or, you can click and drag that object to wherever you want to place it on the canvass.
2. This gives you three attributes by default. To get more attributes:
    a. Select attribute from the stencil. It is called Item 1, and it is located:



    b. Then drag it over to your class where you want to add an attribute and position it in the right spot among the attributes already in the class. The perimeter of the class box will light up with a purple color to indicate that your new attribute will go in the class.

c. If you accidentally drop the attribute in the wrong place, just drag and drop it where you need for it to go.

iii. The association between two classes is:



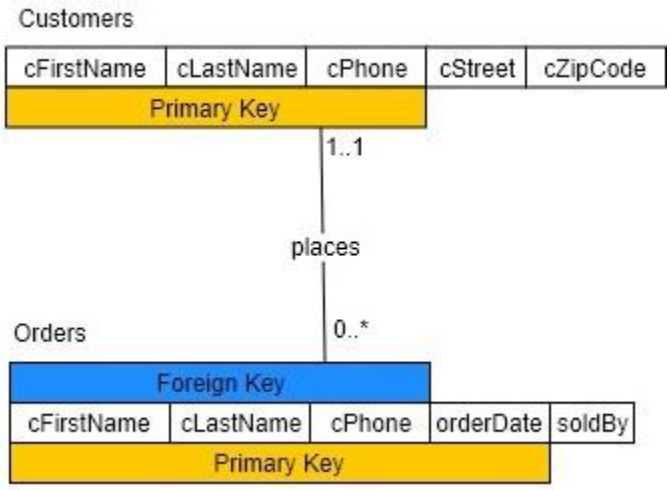
1. Just like the class, this will create an association object in the upper left-hand corner of your diagram. Drag the parent end of that over to one of the attachment points on the parent class. That will yield an association that points to nowhere.
    a. Drag that child end of the association over to the child class and attach it at an attachment point.
    b. If the association is not attached, when you move the class, the association terminus will not follow. Rather irritating at best.

2. Then add the verb phrase. You do this by clicking near (but not too close or it will be attached to the association line) the association. A little visual menu will pop up. Select the text entry from that, and then type in the verb phrase for the association.

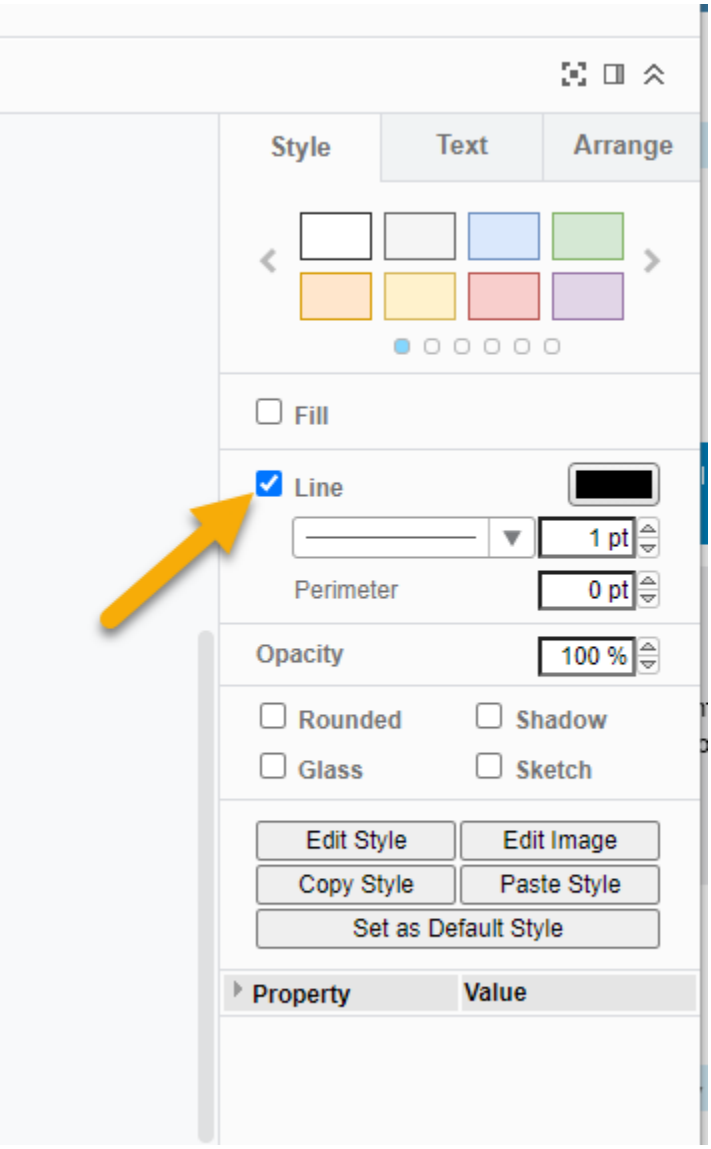
iv. At either end of the association will be a text string: “parent” or “child”. Change those text entries to be the multiplicity of your association.

d. General quality checks on your UML diagrams:
   i. Never forget the multiplicity of the associations between your classes.
   ii. Never leave the associations unlabeled.
   iii. Class names are singular, relation names are plural.
   iv. Remember, UML diagrams are conceptual:
      1. Never put migrated foreign keys into your UML diagrams.
      2. Never put surrogate keys into your UML diagrams.

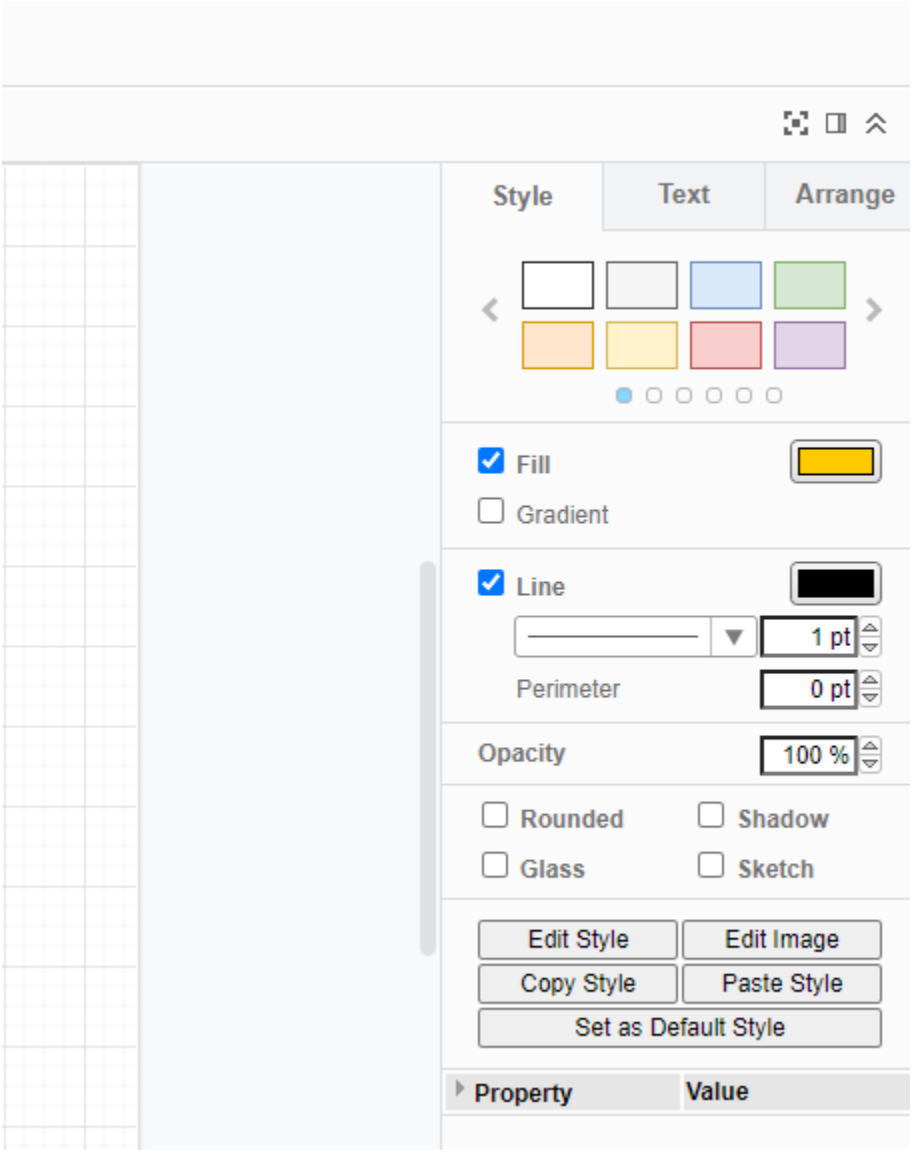
2. The corresponding **relation scheme** diagram looks like:



a. Each block in the diagram is formed by starting with a text field. The text tool is in the first row of the General stencil. Once you position the text where you want, just enter the name, and then select the text and put a line around the perimeter:



b. To color the rectangle, select the text that you just put the box around and be sure that the properties page on the right has the Style tab open:



i. Select the khaki color for the primary key and blue for the migrated foreign key.

c. Use the same UML association line for the relationship line in the relation scheme diagram.
   i. Remember to

WHAT TO TURN IN:

- Your diagram.net file (which will be a .drawio file) for the Customers/Orders tables. It should look as much like the examples up above as possible.
  - You can give me one file for your UML diagram and another for the relation scheme diagram, or you can do both in one file, just two different diagrams.
    - There is a "+" sign down at the bottom of the diagrams.net window that you use to create an additional diagram in the file.
    - You can double click on the tab name at the bottom of the window to rename it.