Infs1200/7900: Diagrams.net Help Guide (Entity-Relationship Diagrams)

Introduction

Purpose: In this course, one of the online design tools being used to create Entity-Relationship (ER) Diagrams is **Diagrams.net** (formerly draw.io). This help guide will assist you in implementing the various symbols and objects when creating your ER Diagrams.

Quick Help Access Links

The following are the hyperlinked for quick access to parts of the help guide:

Accessing Diagrams.net

There are two methods to access diagrams.net, either through the browser (a) or as a desktop client (b). The **recommendation** is to use the **browser**.

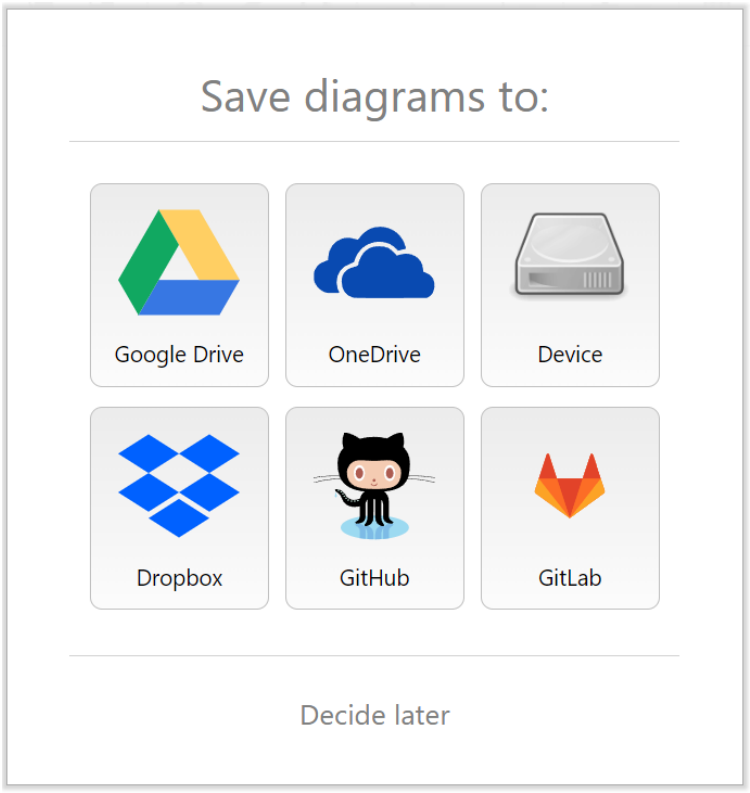
a) Browser: https://www.diagrams.net/

b) Client: http://get.diagrams.net/

Choosing a Save Location

When accessing diagrams.net through the browser, **select a save location** is selected straight away to ensure work can be saved and edited later.

Every time diagrams.net is opened, the following pop-up will be displayed:

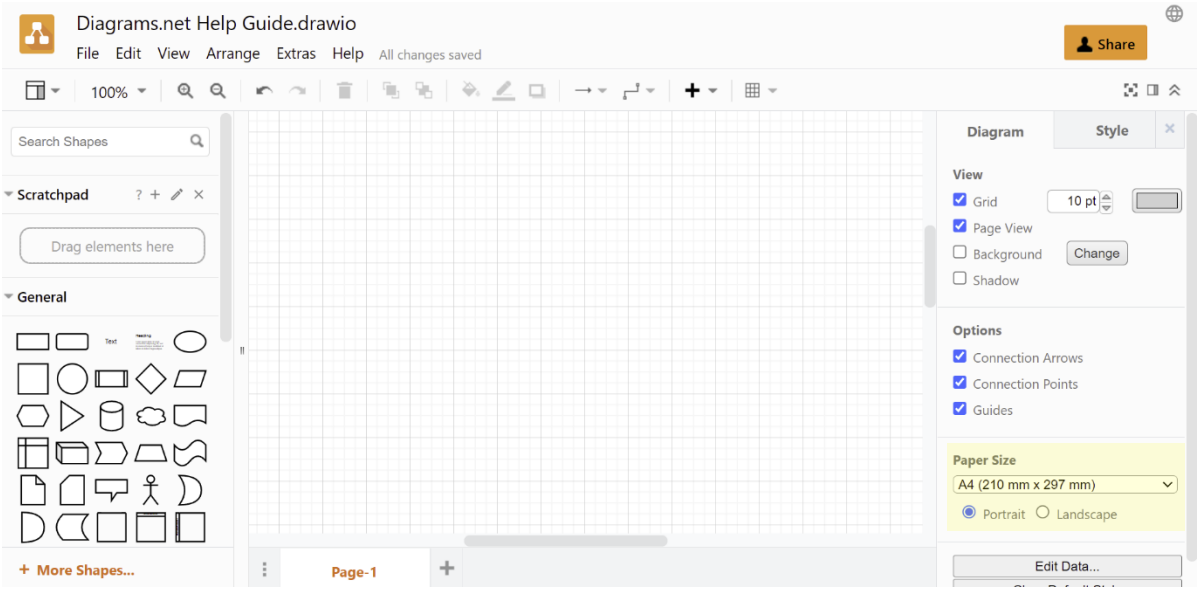


Select either “Google Drive”, or “OneDrive” to **automatically save** to your cloud storage (Google Drive supports collaboration). Otherwise, select “Device” to save to your local computer.

Note: You can still click ‘Decide Later’ and manually specify a save location using “File -> Save (As)” after this pop-up has disappeared.

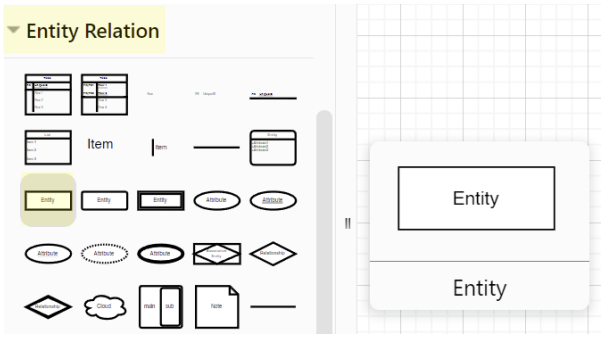
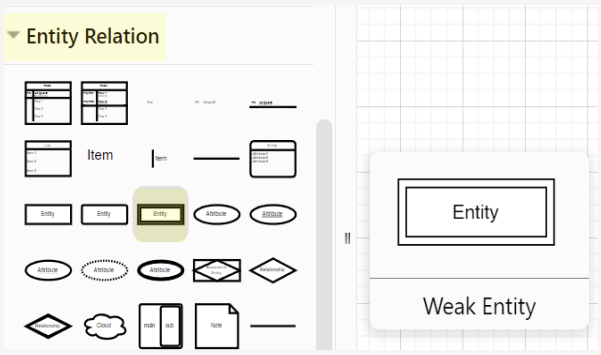
Page Layout and Setup

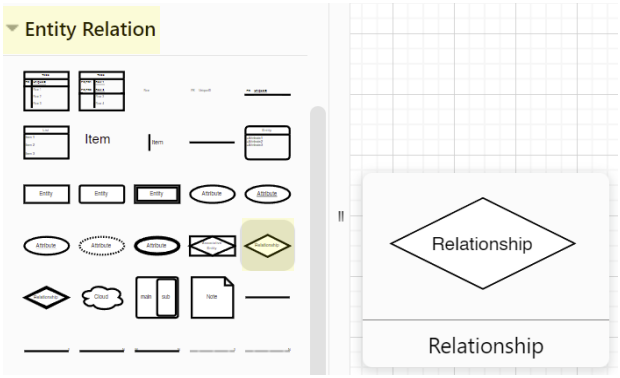
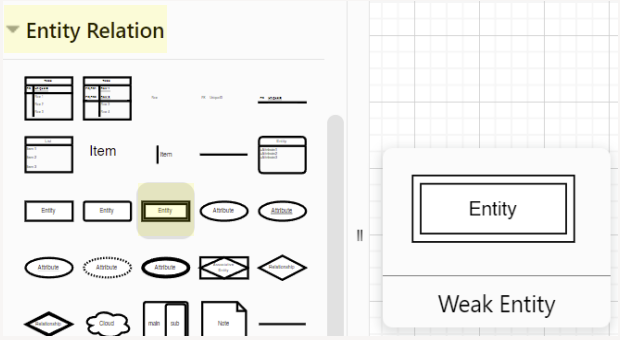
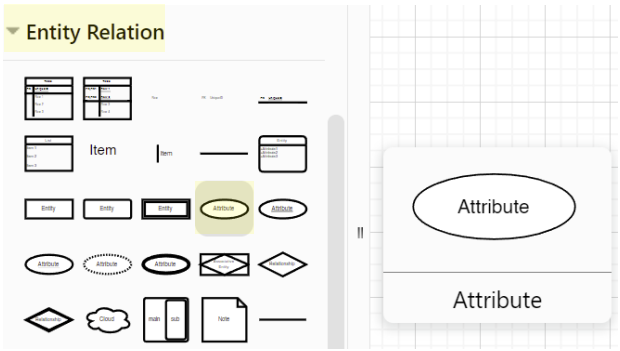
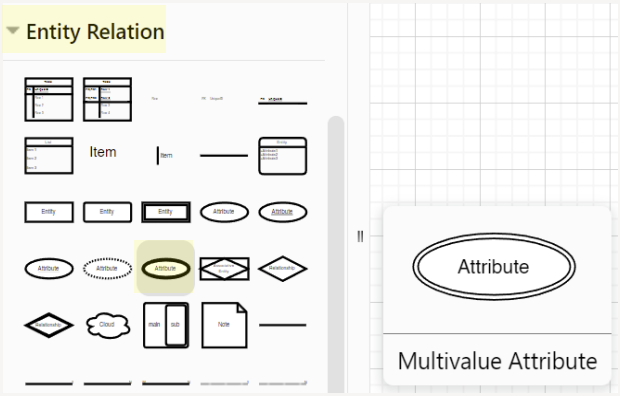
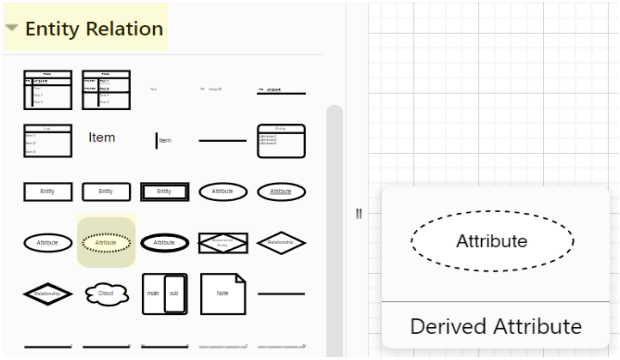
By default, the page is set to US sizing. Change the paper size to **“A4 (210 mm x 297 mm)”** by selecting it from the drop-down menu located on the right-side panel as shown below. Then, select to use Portrait or Landscape depending on your preference.

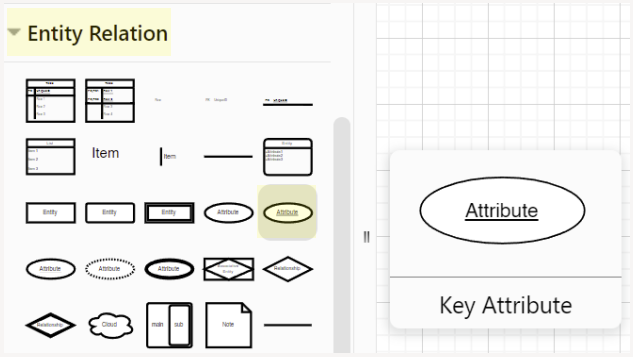
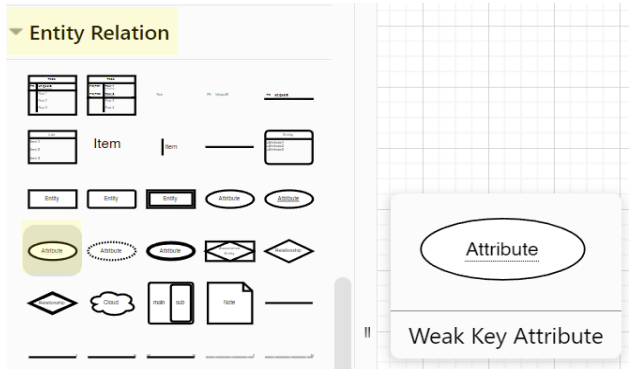


ER Diagram Symbols

The following table shows where to find the commonly used **shapes** and **symbols** used in ER Diagrams, when using Diagrams.net.

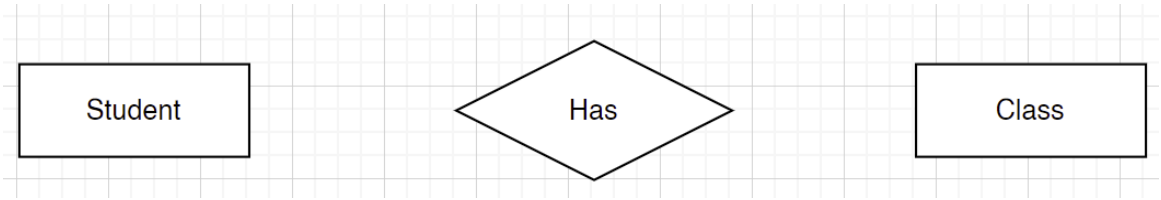
Object	Location
Strong Entity	
Weak Entity	

Relationship	
Identifying Relationship	
Attribute	
Multivalued Attribute	
Derived Attribute	

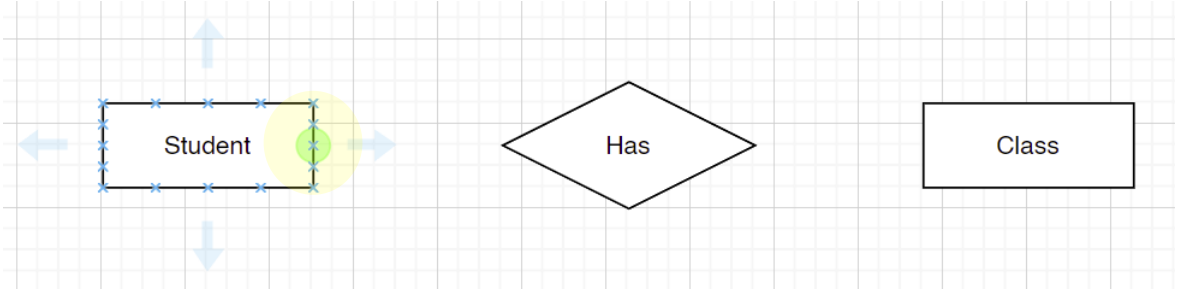
Key	
Partial Key	

Connecting Objects and Symbols

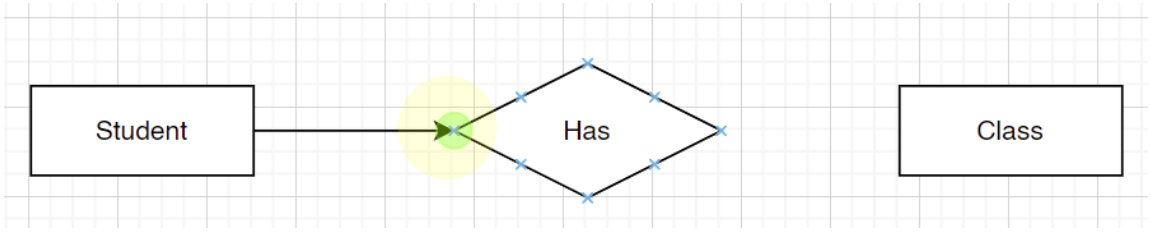
The following steps show an example of connecting two **Entities** (STUDENT and CLASS) to a **Relationship** (HAS).



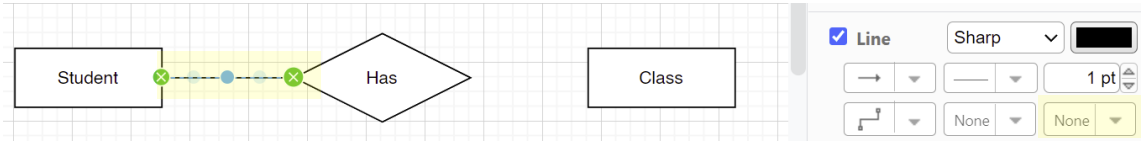
1. Hover your mouse over an object, in this case, **Student**. Four arrows will appear as shown below:



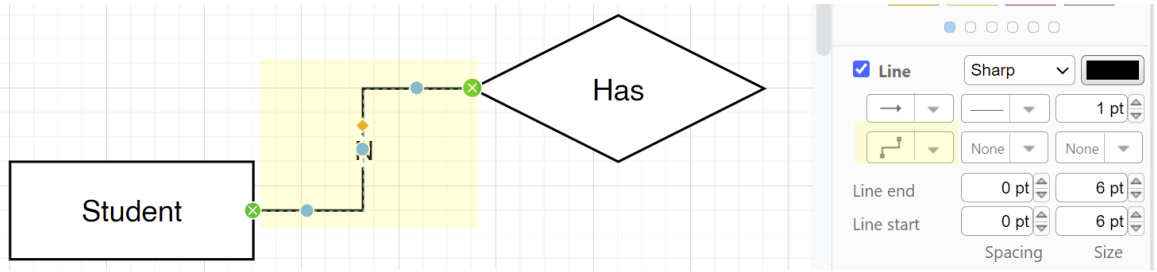
2. Select one of the arrows (the edge which the connection will originate from) and drag it to the destination object, in this case, “has”.



3. By default, the line will have an arrow. As this **is not the notation used** in lectures, remove it. Select the line and change the arrow style to “**None**”.



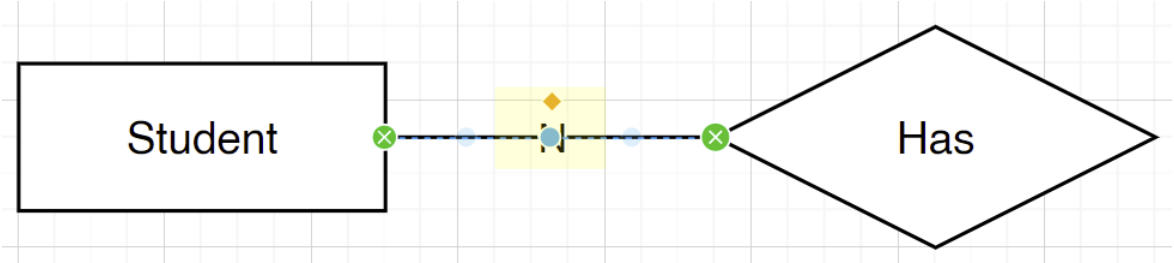
4. Also, by default, the connecting line is **orthogonal**/**perpendicular** (mainly used to connect **Subclasses**). This can be changed to **straight** when connecting **Attributes**.



Setting Cardinality Constraints

The following steps show how to set cardinality constraints when constructing an ER Diagram for the same example above.

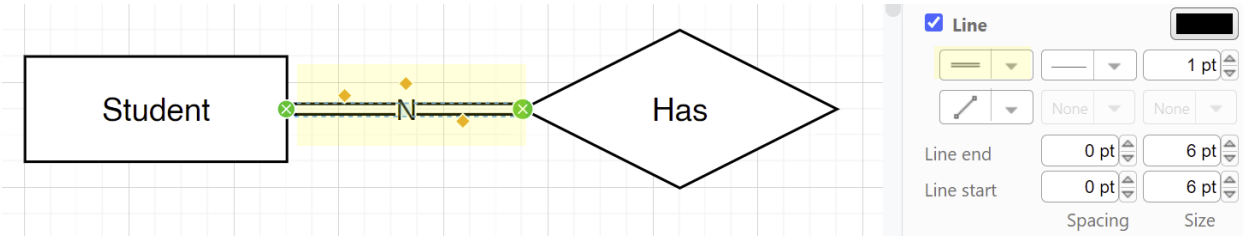
1. Select the connecting line you wish to set the cardinality on.
2. Enter either **“1”, “N”**, or **“M”** depending on which cardinality you wish to use.
3. The golden diamond can be used to **relocate** the text on the line. It will always stay with the line regardless of where any object is moved.



Setting Participation Constraints

The following steps show how to set participation constraints when constructing an ER Diagram for the same example above.

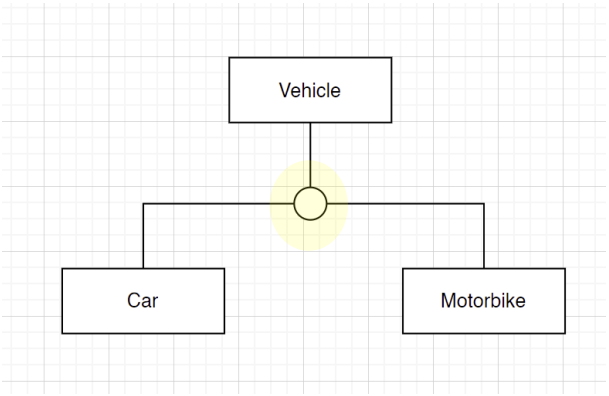
1. Select the connecting line you wish to set the participation on; by default, they are all **partial** participation.
2. Set the line style to "**Link**" (double line) if you wish to make it **total** participation.



Creating Super/Subclasses

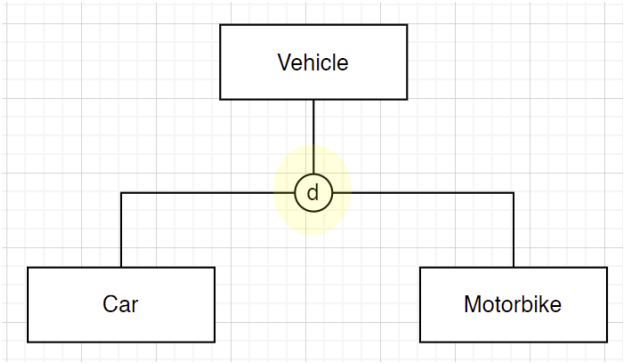
The following steps show how to create an Extended Entity Relationship Diagram including **Subclasses**, with an example consisting of **VEHICLE** (Superclass) and **CAR** and **MOTORBIKE** (Subclasses).

1. Create the skeleton of the super/subclass using the objects discussed above.
2. Use the "**Circle**" tool under "**General**" tab (on the left) to place a circle as shown below (resize to a smaller circle).

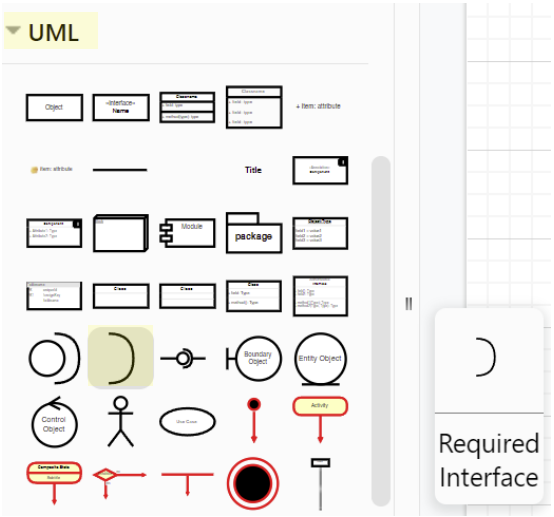


Note: The line from the Vehicle entity is of **straight** line, and from the circle to each of the subclasses it is **orthogonal**.

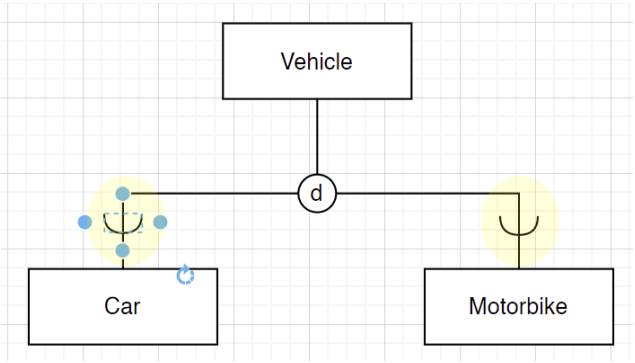
3. Select the circle (left click) and type either **“d”** or **“o”** to specify **disjoint** and **overlapping** respectively.



4. The direction of specialisation (subset symbol) must be included in the EER Diagram. Use the **Required Interface** symbol from the **UML** tab (or **search it up** of the left pane).



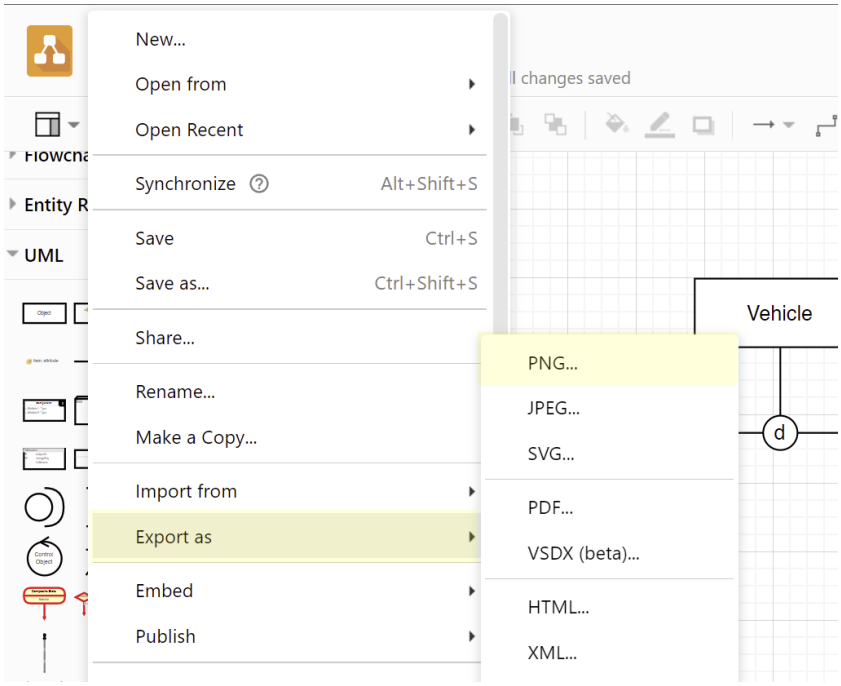
5. Depending on the direction of your subclasses, you may need to **rotate** the **‘U’** (Required interface) **symbol**.



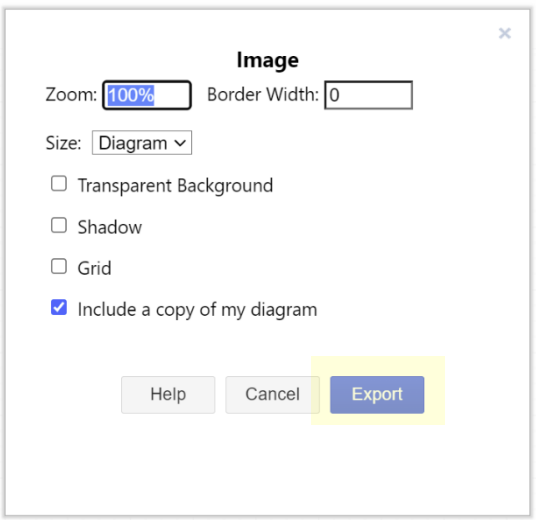
Note: Do not drag the 'U' symbol on top of the line as it might **not** place it correctly. Instead **place it outside** of the line and **use your arrow keys to place it correctly** on top of the line as shown above.

Exporting your Diagram

1. Once your ER Diagram has been completed on Diagrams.net, you can **export** it by selecting "*File* > *Export as* > *PNG*…".



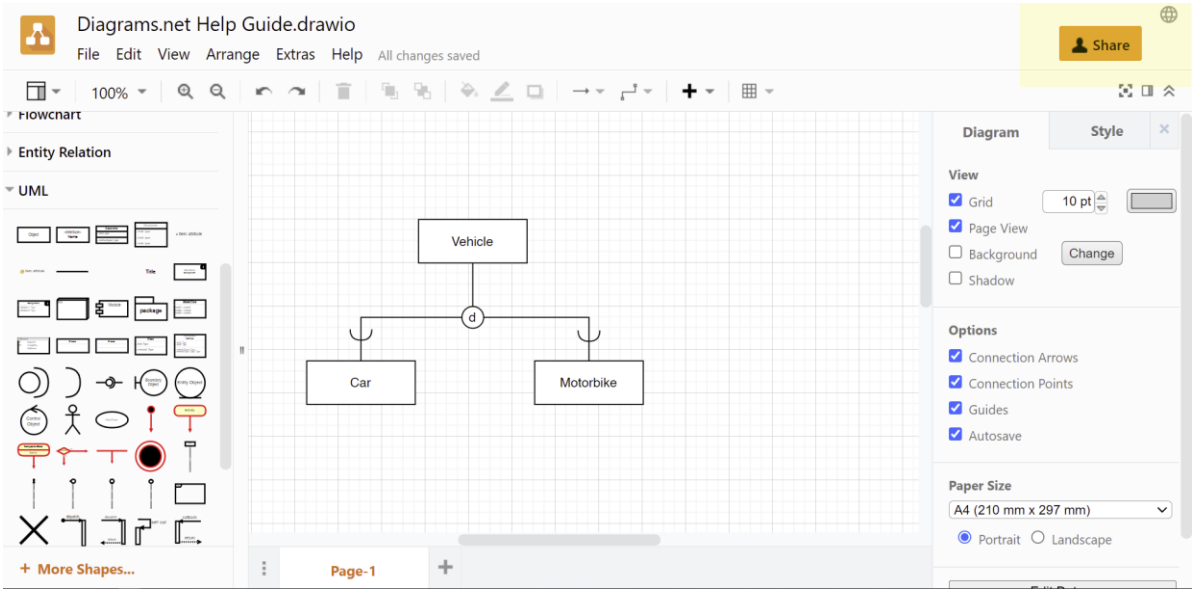
2. Select **Export** and then **Download** to export the Diagram.



Collaboration

If you save your document using “**Google Drive**” or “**One Drive**” then you can have multiple users edit the same ER diagram at once when you click ‘**Share’**. This is very handy if you’re doing **group work**.

Read more about it here: https://www.diagrams.net/doc/faq/share-diagrams



Save often! (CTRL+S). Web browsers will crash and it will not automatically save your work.