



# Analysis and Design of Databases

## IEOR 215 Fall 2022

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### Lab 1 – ER Diagrams on Draw.io

Friday, September 2nd

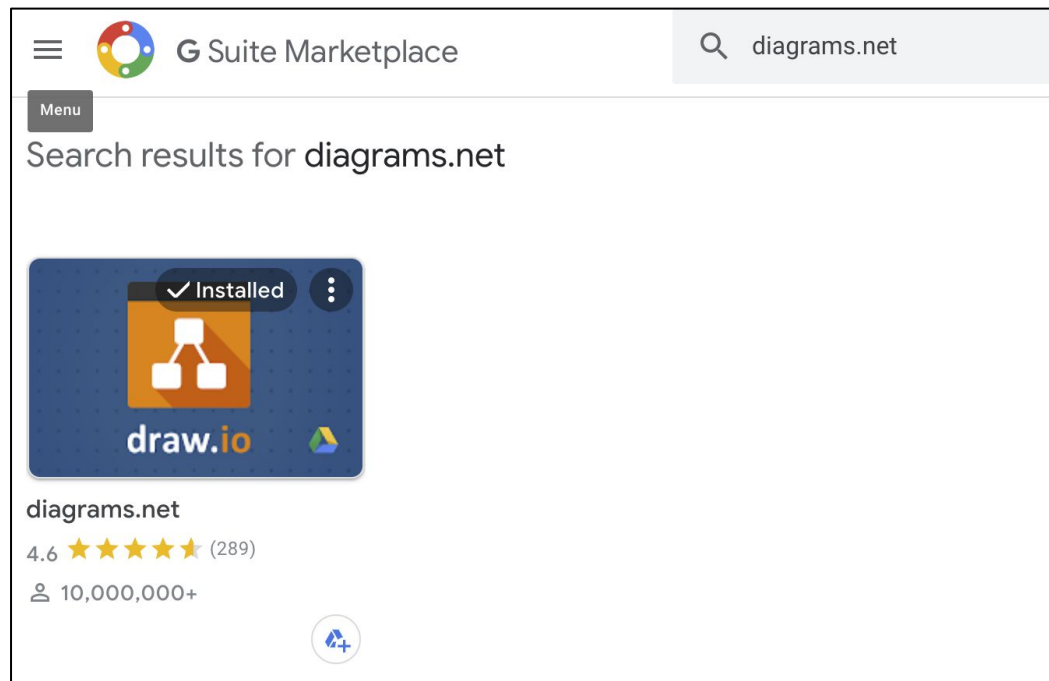


# Creating ER Diagrams Using Google Docs (draw.io)

Using the draw.io tool to collaboratively create ER Diagrams

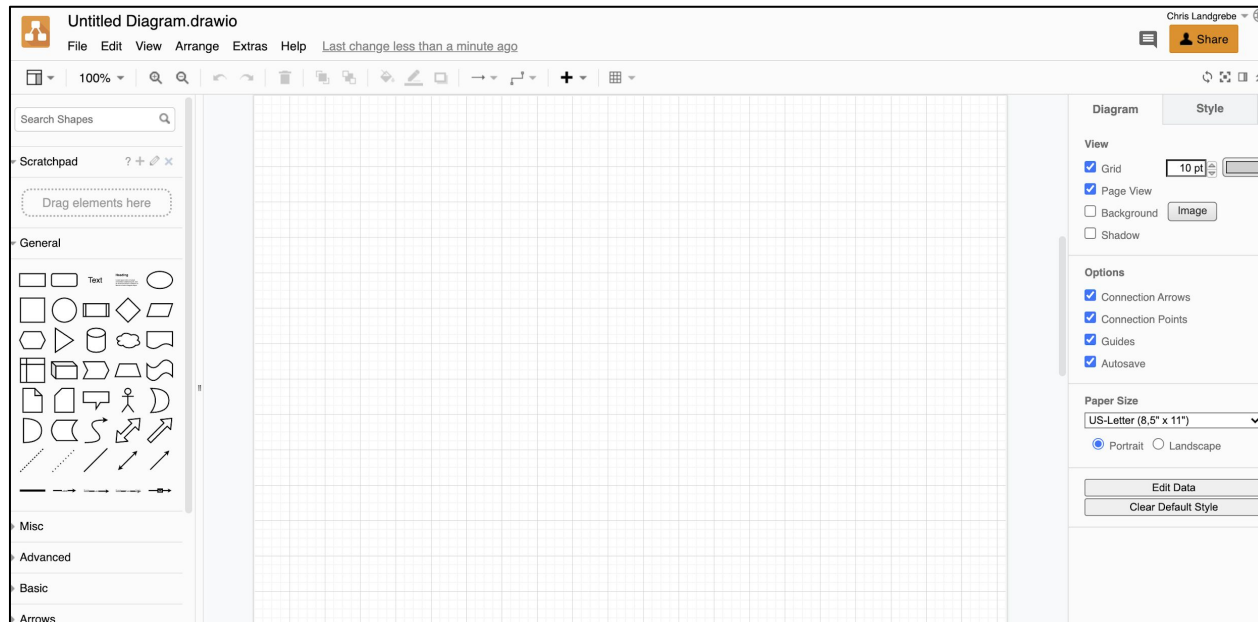
# How to Add Draw.io Extension

- Go to drive and click **+ New → More → Connect More Apps**, then search for **diagrams.net**
- Click on the application then click **Install**



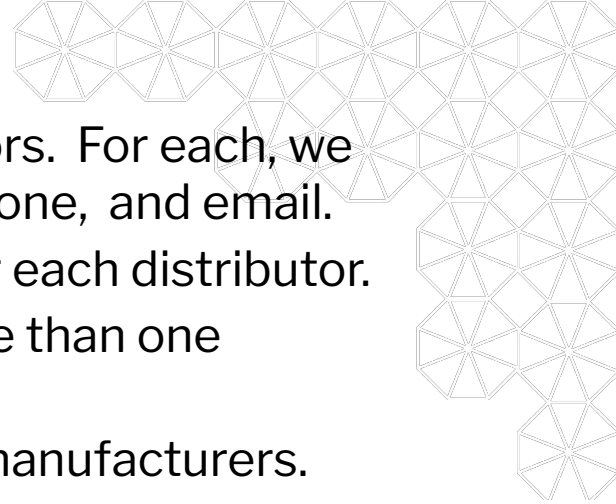
# Create a Blank ER

- To create a blank ER Diagram, go to Google Drive
- Click **+ New → More → diagrams.net**
- Choose **Blank Diagram**, then click **Create**



# Example 1: Odessa Electronics

- For each Manufacturer, we store the MID, name, and a set of plant locations.
- For each product type we carry, we want to store a SKU (Stock-Keeping-Unit) number, pname, textual description, and which Manufacturer makes it. We also note which product-types are components of other product-types, for example SKU “Odessa-Desktop-System-4” might include as a component the “HP-11-Printer”.
- Each item in our inventory is an *instance* of one particular product-type. For example we may have 6 “HP-11-Printer” inventory items. We assign inventory ID numbers 1-6 to these items. For each inventory item, we store its date of manufacture.
- For each employee, we need to record their SSN, Fname, MI, Lname, address, phone, salary, age, and one or more email addresses. We also note the supervisor of each employee.


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- . Our inventory is supplied by a number of distributors. For each, we note their DID, dname, location, representative, phone, and email.
  - . One employee is selected as the primary liason for each distributor.
  - . An employee can be the primary liason for no more than one distributor.
  - . We also note which distributors represent which manufacturers.
  - . Every time we place an order with a distributor, we track the employee who places the order, on what date, and which products are requested: how many at what price. When an order is received, we note which employee receives it, the arrival date, and which specific inventory items it includes.

# Example 2: University Database

The university database stores details about university students, courses, the semester a student took a particular course (and his mark and grade if he completed it), and what degree program each student is enrolled in.

Consider the following requirements list:

- The university offers one or more programs.
- A program is made up of one or more courses.
- A student must enroll in a program.
- A student takes the courses that are part of her program.
- A program has a name, a program identifier, the total credit points required to graduate, and the year it commenced.
- A course has a name, a course identifier, a credit point value, and the year it commenced.
- Students have one or more given names, a surname, a student identifier, a date of birth, and the year they first enrolled. We can treat all given names as a single object—for example, “John Paul.”
- When a student takes a course, the year and semester he attempted it are recorded. When he finishes the course, a grade (such as A or B) and a mark (such as 60 percent) are recorded.
- Each course in a program is sequenced into a year (for example, year 1) and a semester (for example, semester 1).

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- Ask questions on bCourses Discussions tab– not emails !
  - Contact Professor, GSI & Grader for any practical question concerning homeworks & assignments

## Come to Office Hours & ask questions !

Zoom: [Mon, Wed 3pm – 4pm](#) (tentative)

In-person: TBD





# Questions ?