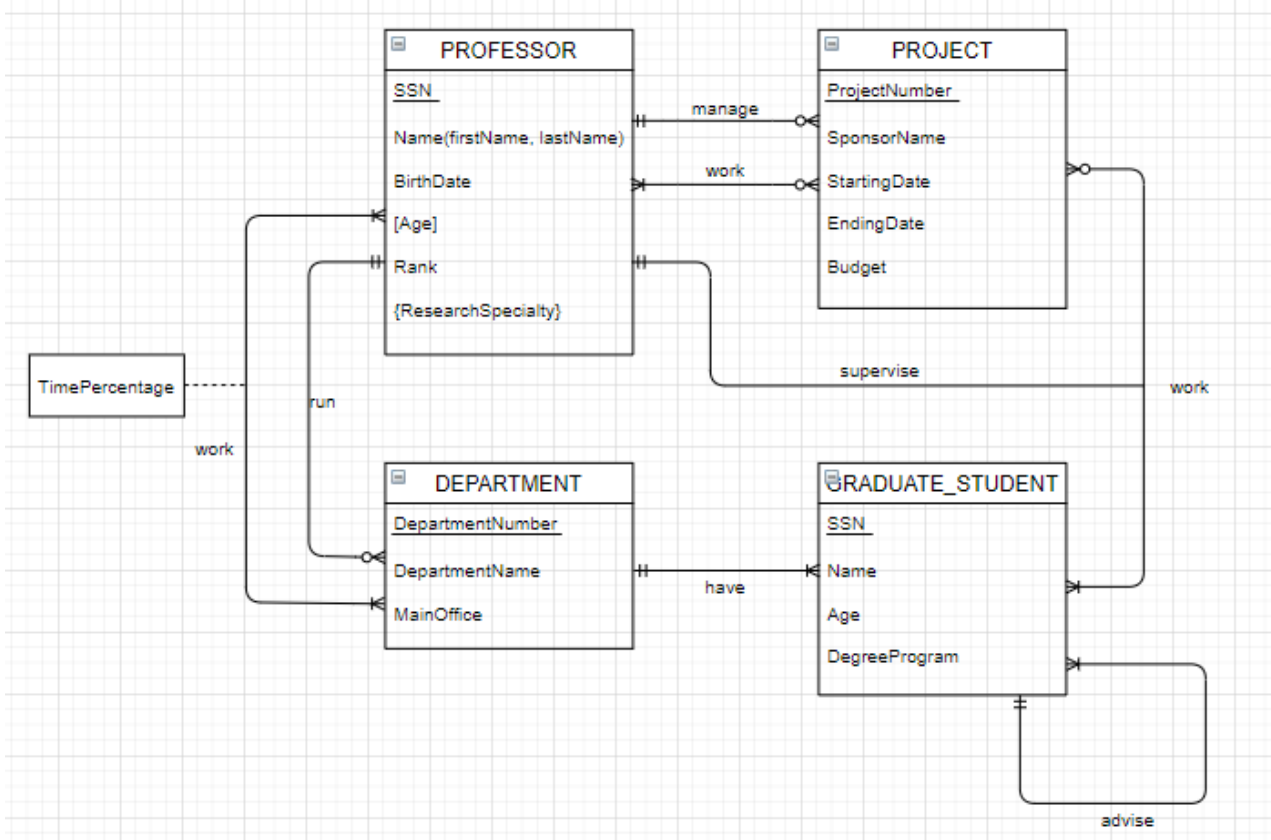# CSE3055 Database Systems – Homework 2
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I hereby swear that the work done on this homework is totally my own; and on my honor, I have neither given nor received any unauthorized and/or inappropriate assistance for this homework. I understand that by the school code, violation of these principles will lead to a zero grade and is subject to harsh discipline issues.

1)

My assumptions about ER diagram are listed below:

- Even though a department is run by a professor, a professor does not have to run a department. But, in case he/she is capable that I though he/she can run many departments.
- Since there is a professor that runs the department, department worked by at least a professor and there can be many more.

- Even though there has to be one or many professors that manages a project, a professor does not have to manage a project. But in case he/she wants they can manage many projects.
- Even though there are many professors who can work in a project, a professor might not have the time for it (maybe because of departmental responsibilities etc.) and does not have to work on project. But in case he/she wants they can work in many projects.

- I assumed that, a project that is worked on by a graduate student has to be supervised by a professor, that needs to be exact one. Therefore, minimum and maximum amount for that is exact one. And that is explained with a ternary relation among professor, project and graduate student entities.
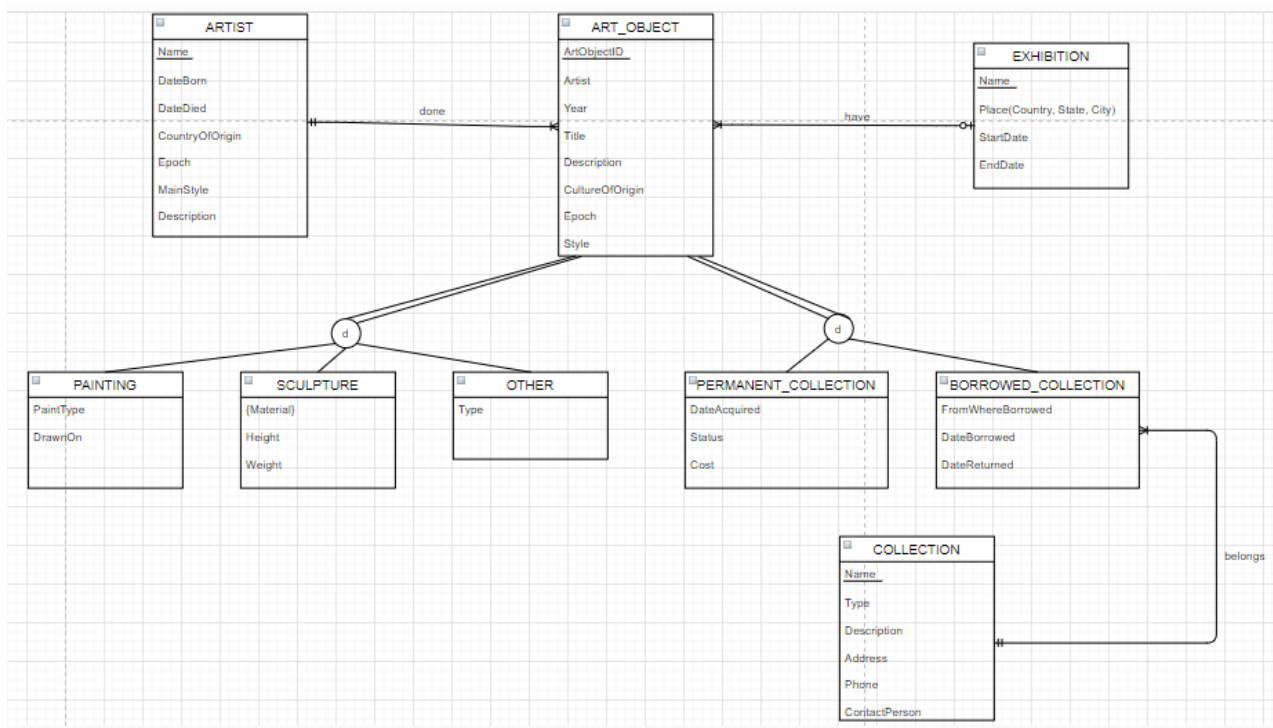
- Assuming from the real life perspective, to be running a department and running also the lectures, there has to be at least one graduate student who is helping the main teacher responsible from the lecture. Also, there can be many more graduate students.

- Graduate student might be taking a degree that does not require him/her to be writing a thesis, therefore not working on a project. That is why there is optional many sign in project entity.

- Each graduate student has another, more senior graduate student. That is explained with a unary relation in graduate student entity and that is why there is an exact one sign.
On the other hand, a more senior graduate student can have more than one graduate student below him/her. That is why there one to many relation declared.

2)

My assumptions about the EER diagram are listed below:

About the relations:
- Assuming that, to be called an artist, that artist should have done one or many art objects. And that art object done by exactly one artist.

- To open an exhibition, there has to be one or many art objects. And that art object might not be belonging to an exhibition. But, if so it belongs to exactly one exhibition.

- Borrowed collection is assumed to be belonging to exactly one collection. And collection entity may have one or many borrowed collection.

Some little notes about EER diagram:
- Culture of origin and Epoch attributes are only declared for the super type "ART_OBJECT" entity. Because these attributes are common for all the art objects.

- Style is only declared for the super type "ART_OBJECT" entity. It is already common for PAINTING, SCULPTURE and OTHER entities. Also, it is assumed for my structure that permanent and borrowed collection has a style depending on which type of collection it is.

- They are 2 disjoint constraints, since it is assumed that art object either belonging to one of the type in sub types. And it has to be separated with two disjoint relations since it may be both painting and permanent at the same time.