**DATABASE SYSTEMS SS2025**

**ASSIGNMENT 1**

***NOTES***

* *Students should read everything presented below carefully.*
* *This assignment 1 is worth 15% of the overall grade.*
* *This assignment is on relational data modeling.*
* *Appropriate softwares can be used to support your design.*
* *Plagiarism must be avoided. Otherwise, zero mark is given.*
* *You could build your team freely. Each team will have 4 members*
* *Your team choose one of the below topics for your assignment*

***TOPICS***

* Education: student, course, lecturer, assignment,...
* Work: project, leader, member, customer, infrastructure,…
* Social media: user, relationship, post, reaction,...

1. **REQUIREMENTS**
2. Make the business description. (2 points)
3. Design a fully labelled (E)ERD according to your own business description. The diagram has to show appropriate entities (with key attributes underlined), relationships, cardinality ratios, and optional & mandatory memberships classes. (5 points)

*Note: Your (E)ERD must includes:*

* *Entity type, Weak entity type, Superclass, Subclass*
* *Simple attribute, multivalued attribute, derived attribute, composite attribute, complex attribute*
* *Binary relationship type (1:1, 1:N, M:N), ternary relationshiptype*

1. *Mapping your (E)ERD diagram to a relational database schema. (2 points)*
2. *Identify at least 4 semantic constraints not represented in your (E)ERD (1 point)*
3. **SUBMISSION & PRESENTATION**

All teams have to **submit a hard copy report**and **present your work**to me

* **Classes starting at week 38:** Sat 11th Oct 2025 (Week 41).
* **Classes starting at week 39:** Sat 18th Oct 2025 (Week 42).

The team leader **submits your work (soft copy)**to LMS with only one single zip file. The zip file may contain resources as follows:

* Team member list, task assignment & completion percentage of each member
* A single word file containing your (E)ER diagram, relational database schema, and constraints
* Other supporting files (if any)

1. **EVALUATION**

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| **Assignment 1** |
| **Mark: 8-10**   * Describe clearly & practically business * Correctly identify all entities and their relationships * Identify all appropriate attributes including primary keys of each entity * Correctly state the membership class of each entity * (E)ER diagram is correctly drawn with appropriate labels * Mapping (E)ER diagram to a relational database schema correctly   All constraints are correctly identified |
| **Mark: 6-7.5**   * Describe clearly & practically business * Correctly identify all entities and their relationships * Identify all appropriate attributes including primary keys of each entity * Correctly state the membership class of each entity * (E)ER diagram is clearly drawn (may contain small mistakes) * Mapping (E)ER diagram to a relational database schema may have a few mistakes   All constraints are identified but slightly incorrect |
| **Mark: 5-5.5**   * Describe business well but insufficiently * Correctly identify most of the entities and their relationships * Identify most of the appropriate attributes including primary keys of each entity * State most of the membership class correctly * (E)ER diagram is drawn (may contain mistakes) * Mapping (E)ER diagram to a relational database schema may have several mistakes   All constraints are identified but incorrect |
| **Mark: 4-4.5**   * Describe business poorly * Correctly identify most of the entities and their relationships * Identify most of the appropriate attributes including primary keys of each entity * State most of the membership class correctly * (E)ER diagram contains mistakes * Mapping (E)ER diagram to a relational database schema may have significant mistakes   All constraints are slightly neglected |
| **Mark: 0-3.5**   * Describe business poorly * Entities and their relationships are not identified correctly * Attributes or primary keys of each entity are not identified * Membership class are not correctly stated * (E)ER diagram is not completed * Mapping (E)ER diagram to a relational database schema is not done   All constraints are totally neglected |

***------------------------------------------- GOOD LUCK! -----------------------------------------***