 *DEPARTMENT OF COMPUTER ENGINEERING* Experiment No: 1

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| Semester | S.E. Semester IV – Computer Engineering |
| Subject | Database Management Systems Laboratory. |
| Lectures Professor In-charge | Prof. Suja Jayachandran |
| Practicals Professor In-Charge | Prof. Suja Jayachandran |
| Laboratory number | M312 |

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| Grade |  | Teacher’s Signature |  |

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| Experiment No: | 1 | |
| Experiment Title | To draw an ER diagram for a selected case study | |
| Resources / Apparatus Required | Hardware:  PC | Software:  Draw.io |
| Objectives  (Skill Set / Knowledge Tested / Imparted) | 1)To Study Entity Relationship Model | |
| Historical Profile | Data modeling came into vogue in the 1970s driven by the need to properly model databases or even real-world business processes. Peter Chen, an attendee at this year’s [Enterprise Data World](http://www.dataversity.net/enterprise-data-world-2012-conference-overview/) conference, popularized the Entity-Relationship model in a [paper published](http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.123.1085) in 1976. | |
| Theory | **ER Diagram:** ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.  **Components of the ER Diagram**  model is based on three basic concepts:   * Entities * Attributes * Relationships   **There are two types of entities:**   |  |  | | --- | --- | | **Strong Entity Set** | **Weak Entity Set** | | Strong entity set always has a primary key. | It does not have enough attributes to build a primary key. | | It is represented by a rectangle symbol. | It is represented by a double rectangle symbol. | | It contains a Primary key represented by the  underline symbol. | It contains a Partial Key which is represented by a dashed underline symbol. | | The member of a strong entity set is called as  dominant entity set. | The member of a weak entity set called as a subordinate entity set. | | Primary Key is one of its attributes which helps  to identify its member. | In a weak entity set, it is a combination of primary key and partial key of the strong entity set. | | In the ER diagram the relationship between two  strong entity set shown by using a diamond  symbol. | The relationship between one strong and a weak entity set shown by using the double diamond symbol. | | The connecting line of the strong entity set with  the relationship is single. | The line connecting the weak entity set for identifying relationship is double. |   **Attribute:**  It is a single-valued property of either an entity-type or a relationship-type.For example, a lecture might have attributes: time, date, duration, place, etc.An attribute in ER Diagram examples, is represented by an Ellipse. | |
| ER Diagram |  | |
| Conclusion | By ER Diagram, we get the idea about overall database. It helps us in solving the queries . | |
| Real Life Application | * ER Diagram of Hotel Management System * ER Diagram of Database - University Database * ER Diagram of Database - University Database * ER Diagram of Online Shopping System | |