**DBAS 1001**

**Introduction to Database Management**

**Assignment # 2**

**Definitions:**

**Microsoft Visio** – an industry standard tool for creation of visual aids in Systems Analysis and Design. Of particular interest in the context of this course are Visio’s Data Model Diagram, UML diagram, and Data Flow Diagram.

**Entity Relationship Diagram (ERD)** – also known as a Data Model Diagram. The ERD depicts, for a given business scenario:

* the entities, their attributes and datatypes;
* constraints upon the entities; and
* relationships between the entities

necessary for the storage of all data and the retrieval of all information required for performance of the scenario’s stated business function(s).

**Entity –** Also known as a thing, a category, a table, a relation. A logical container for a collection of similar things that you need to keep track of.

**Attribute –** A way to describe one of a particular entity. For example, for an entity called person, attributes could include name, address, email.

**Datatype –** The kind of data values that you will be storing in an attribute. Three main datatypes are numeric, string, and date.

**Constraint –** a rule you define on an entity or an attribute that restricts what you can do with that entity or attribute. For example, a **Primary Key (PK)** constraint defined on an attribute of an entity prevents you from entering duplicate values **(UNIQUE)** and requires that you must enter a value for that attribute **(NOT NULL)**. The presence of a PK attribute in an entity ensures **Data Integrity** in the database. A **Foreign Key (FK)** constraint on an attribute of an entity (a) requires you to enter a value in that attribute that must match a pre-existing value in an attribute of another entity, and (b) prevents you from deleting a record in the other entity that contains a value in an attribute that matches existing values in the FK-constrained attribute of an entity.

**Relationship –** On an ERD, a relationship line indicates that the records contained in two entities are tied to each other. The relationship line is the implementation of a referential integrity (FK) constraint. The relationship line has **cardinality** indicators such as a crow’s foot, a one, an arrowhead that indicates for a relationship which end is the **parent** end and which is the **child** end.

**Your Work:**

Using Microsoft Visio, supply an ERD that is capable of storing all the data and retrieving all the information necessary for the Frankie’s Laundry scenario.

Ensure that your work is presented in hard copy in the normal memo format. Have an Existing System section where you give me, or refer me to, all the information you have to work with in order to make an ERD that meets the specifications above. Give an explicit Statement of Requirement. Give me an Analysis section that, in a logically flowing sequence, describes and justifies all of the choices you made as you constructed the ERD. In the recommendation section, give me the ERD. **NOTE THAT IF I SEE SOMETHING IN YOUR ERD SOLUTION THAT CAUSES ME TO ASK A QUESTION, I WILL EXPECT TO FIND THE ANSWER IN YOUR ANALYSIS SECTION.** The marking rubric for this assignment is at the end of this document.

**The Frankie’s Laundry Scenario:**

Frankie is a laundry fanatic. In his bedroom is an extremely large dresser with three drawers. Each drawer has four partitions. In the top drawer he keeps pairs of socks, never single socks – warm socks in the leftmost partition, lighter socks in the next partition. The third partition has only warm underwear, the fourth contains more flimsy underwear – neatly folded and aligned. In the middle drawer Frankie keeps items of clothing he wears above the waist, like shirts, blouses, tank tops, sweaters, body armour. This drawer’s partitions are arranged according to season – the tops he wears only in Spring, Summer, Winter and Autumn. The bottom drawer is likewise arranged by season, but this time the drawer’s contents are items of clothing that Frankie wears below the waist such as yoga pants, shorts, jeans, and tights. Frankie is completely satisfied with this arrangement as it makes it very easy for Frankie to quickly assemble and don complete outfits no matter what the colour scheme, season or climate. However, Frankie’s partner, a professional ball hockey player, complains that the enormous dresser takes up too much valuable bedroom space.

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ASSIGNMENT TWO MARKING RUBRIC

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| --- | --- | --- | --- |
| MARKING POINTS | 0 | 1 | 2 |
| Memo Format | Not used | incomplete | Complete |
| Professionalism | Illegible spelling; poor paragraph structure; poor grammar: affecting user acceptance of the finished work | Errors exist that do not affect user acceptance of finished work | Finished work has a level of professionalism acceptable to standards as negotiated with the client or his/her representative |
| Existing system details | Not present | incomplete | As applicable, enough details regarding existing system to form conclusions regarding requirements |
| Requirements | Not stated | Incomplete or inaccurate | Sufficient and clear requirements regarding outputs needed by client, including stage of development required i.e. design, prototype, implementation, testing |
|  | 0 | 1..5 | 6 |
| Analysis | Not present | Incomplete or inaccurate | Evidence of a logically thought through design process **matching developed solution** |
|  | 0 | 1..5 | 6 |
| Recommendation | Not present | -1 point for each logic error and -5 points for not matching analysis | **Solution** satisfies all stated requirements, and **matches analysis** |
| Totals | 0 | 1..19 | 20 |