Database environment

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**Art Museum Database Environment**

The director of an Art Museum has decided to get rid of his obsolete information system, and replace it for a from scratch database system to keep track of the information related to artwork, as well as of the artists, and location of these pieces of art.

The database environment for the Art Museum has five elements: “hardware, software, people, procedures, and data.” (Coronel, Morris, Rob, 2013). The hardware is the physical components to use for managing the information related to the museum, like computers of all sizes, and servers, networking devices, printers, and other latest information technology devices. The software components include database management systems (in this case Microsoft Access), the operating system (OS), and the applications that use the information in the database. The people are all who use the applications and database for the museum. Usually SYSADM’s, DBA’s, programming staff, and of course end users are people who use the database system and applications. The procedures are the guidelines for users to follow when they use the database system and applications. Last is the data, which are the raw facts that users need to enter in the database (Coronel, Morris, Rob, 2013).

Dealing with database systems problems can be a headache when DBAs’ cannot find the cause of the problem. A bad database design can lead to long times retrieving the information needed or even worse obtaining the wrong information. One of the reasons for not obtaining the right information is because the database system allows entering more than one description or name for the same item because users enter different names for the same item without checking if it already exists. Some users are reluctant to follow the constraints to enter data into the system and then are when problems come. The constraints of an attribute enforce the data entry for a specific attribute in a table by controlling the range of values that users can enter in that field (<http://en.wikipedia.org/wiki/Database_constraints#Constraints>).

The database designer needs to address most of the problems encountered when the required system is discussed. It is very important to discover the root of the problems found to fix them from the design phase, and to listen well and understand the objectives end users are asking. Some questions the designer needs to know the answers are:

1. What is the objective of the database system needed?
2. Are there any applications or systems to interface with in the Museum?
3. Is there any data sharing with the old system or external users? (Coronel, Morris, Rob, 2013).

Scope and boundaries are part of the database system environment. Knowing if it is necessary to use information from more than one department or functions is in the definition of the database environment scope. The scope will determine the scalability of the database as well as the amount of entities to use.

The limits or boundaries of the database system are determined by the hardware and software. In some cases, the database designer will have the power of choosing what hardware and software will do the job better for that solution. Normally this is not possible because of budget and he/she needs to accommodate according to budget and existing hardware and software (Coronel, Morris, Rob, 2013).

List of data specifications for the Museum database are:

List of entities used in the database system environment:

1. ARTIST – Information about artists.
2. MOVEMENT – Movement an artist belongs to.
3. ARTWORK – Information about artwork in the museum.
4. ARTWORK\_TYPE – Types of art like painting, drawing, sculpture.
5. ARTWORK\_MEDIA – Technique used in the artwork.
6. TYPE\_BASE – In what base the art is performed.
7. LOCATION – Location of artwork in the museum.

List of attributes by entity:

1. ARTIST

* ARTIST\_ID – Id number for the artist.
* ARTIST\_LAST\_NAME – Artist last name.
* ARTIST\_FIRST\_NAME – Artist first name.
* ARTIST\_DOB – Artist date of birth.
* ARTIST\_DOD – Artist date of death.
* ARTIST\_MOVEMENT – Associated movement id.

1. MOVEMENT

* MOVEMENT\_ID – Movement id number.
* MOVEMENT\_NAME – Name of the art movement.
* MOVEMENT\_DESCRIPTION – Information about the movement.

1. ARTWORK

* ARTWORK\_ID – Unique Id number for the artwork.
* ARTWORK\_NAME – Name of the artwork.
* ARTWORK\_TYPE – Id number of the artwork type.
* ARTWORK\_LOCATION – Location Id in the museum.
* ARTWORK\_DESCRIPTION – Artwork description.
* ARTWORK\_DATE\_ACQUIRED – Date it was acquired.
* ARTWORK\_ARTIST\_ID – Author of the artwork.

1. ARTWORK\_TYPE

* TYPE\_ID – Unique Id number for artwork type.
* TYPE\_DESCRIPTION – Description of artwork type.
* TYPE\_BASE – Type base id of the artwork.

1. ARTWORK\_MEDIA

* MEDIA\_ID – Media id number of the artwork.
* MEDIA\_NAME – Media name of the artwork.

1. TYPE\_BASE

* BASE\_ID – Type base id
* BASE\_NAME – Base name like wood, glass, fabric.

1. LOCATION

* LOCATION\_ID – Unique Id number for the location
* LOCATION\_NAME – Name of the location for artwork.
* LOCATION\_FLOOR – In what floor the artwork is located.
* LOCATION\_ROOM – In what room it is displayed or stored.

**References**

[Coronel, C., Morris, S., & Rob, P. (2013). Database systems: Design, implementation, and management (10th ed.). Boston, MA: Course Technology.](javascript:MAUI.WebCMS.materials.materialLinks('46',%20'/secure/resource/vendors/eBook/eBook.asp?assetdataid=ab7bb5f3-baf3-434d-8acd-42312eca957b&assetmetaid=55f90143-2424-4787-98b6-1c4d198aea2d',%20'IC-Materials',%20'DBM380R9',%20'ST',%20'False');" \t "_self)

<http://en.wikipedia.org/wiki/Database_constraints#Constraints>

<http://en.wikipedia.org/wiki/Art_media>