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| Logical Data Model  **Museum** |
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# Business Description

## Business background

Museums need to store data about items, visitors, employees and exhibitions. It is very important to create a convenient database to store all the data.

## Problems. Current Situation

The current problems that many museums have may include is low performance, security concerns (data leaks) and data redundancy.

## the Benefits of implementing a database. Project Vision

The creation of this database will provide a stable, secure and scalable museum database.

# Model description

## Definitions & Acronyms

PK – Primary key

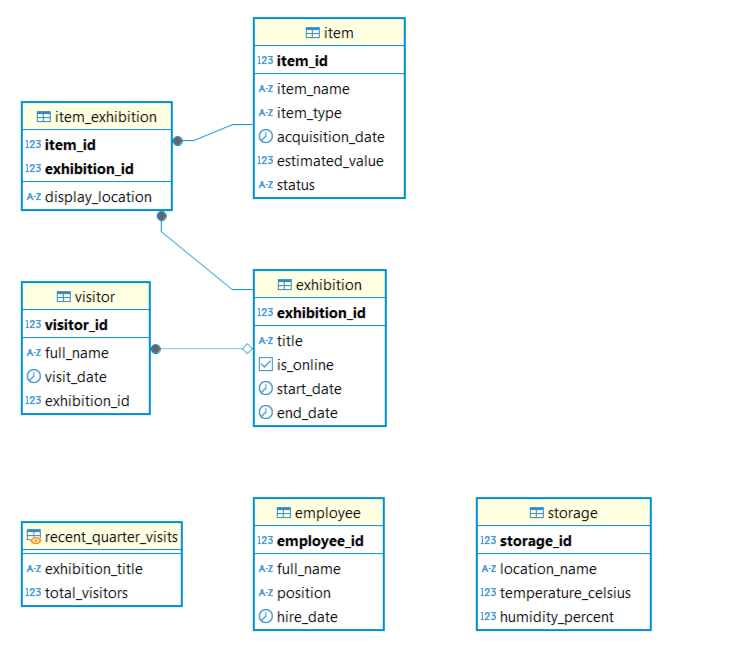
FK – Foreign key

1:M – One-to-Many relationship

M:N - Many-to-Many relationship

3NF - Third Normal Form

## Logical Scheme



## Objects

**Table 1: Item**

Table contains data about item that museum holds.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Data Type** | **Constraints** | **Brief description** |
| Item\_name | VARCHAR(255) | NOT NULL | The name of the item |
| Item\_id | SERIAL | PK | The ID of each item |
| item\_type | VARCHAR(100) | CHECK (item\_type IN ('artwork', 'artifact', 'specimen', 'historical\_object')) | Type of the item |
| acquisition\_date | DATE | NOT NULL, CHECK (acquisition\_date >= '2024-01-01') | Date when the item was acquired |
| estimated\_value | NUMERIC(12,2) | DEFAULT 0, CHECK (estimated\_value >= 0) | Estimated value of the item |
| status | VARCHAR(50) | DEFAULT 'in\_storage', CHECK (status IN ('in\_storage', 'on\_display', 'under\_maintenance')) | Current status of the item |

**Table 2:** exhibition

Table contains data about the exhibition.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Data Type** | **Constraints** | **Brief description** |
| exhibition\_id | SERIAL | PRIMARY KEY | Unique identifier for each exhibition |
| title | VARCHAR(255) | NOT NULL | Title of the exhibition |
| is\_online | BOOLEAN | DEFAULT FALSE | Whether the exhibition is online |
| start\_date | DATE |  | Start date of the exhibition |
| end\_date | DATE | CHECK (start\_date <= end\_date) | End date of the exhibition |

**Table 3:** storage

Table contains data about the storage.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Data Type** | **Constraints** | **Brief description** |
| storage\_id | SERIAL | PRIMARY KEY | Unique identifier for each storage location |
| location\_name | VARCHAR(255) | NOT NULL | Name of the storage location |
| temperature\_celsius | NUMERIC(5,2) | CHECK (temperature\_celsius BETWEEN 5 AND 25) | Temperature in the storage |
| humidity\_percent | NUMERIC(5,2) | CHECK (humidity\_percent BETWEEN 30 AND 70) | Humidity level in the storage |

**Table 4:** employee

Table contains data about the employee.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Data Type** | **Constraints** | **Brief description** |
| employee\_id | SERIAL | PRIMARY KEY | Unique identifier for each employee |
| full\_name | VARCHAR(255) | NOT NULL, CHECK (LENGTH(full\_name) > 0) | Full name of the employee |
| position | VARCHAR(100) |  | Employee's position |
| hire\_date | DATE | NOT NULL, DEFAULT CURRENT\_DATE | Date of hire |

**Table 5:** visitor

Table contains data about the visitor.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Data Type** | **Constraints** | **Brief description** |
| visitor\_id | SERIAL | PRIMARY KEY | Unique identifier for each visitor |
| full\_name | VARCHAR(255) | CHECK (LENGTH(full\_name) > 0) | Full name of the visitor |
| visit\_date | DATE | DEFAULT CURRENT\_DATE, CHECK (visit\_date >= '2024-01-01') | Date of the visit |
| exhibition\_id | INT | REFERENCES exhibition(exhibition\_id) | Linked exhibition for the visit |

**Table 6:** item\_exhibition

Table contains data about the item in exhibition.

|  |  |  |  |
| --- | --- | --- | --- |
| **Column** | **Data Type** | **Constraints** | **Brief description** |
| item\_id | INT | REFERENCES item(item\_id) | ID of the item |
| exhibition\_id | INT | REFERENCES exhibition(exhibition\_id) | ID of the exhibition |
| display\_location | VARCHAR(255) |  | Display location in the exhibition |
| Primary Key |  | PRIMARY KEY (item\_id, exhibition\_id) | Composite key to prevent duplicates |