

CSU34041 Information Management II

Assignment: MySQL Database

*Federal Bureau of Control RDBMS*

Daniel Whelan, 19335045

March , 2022

Contents

[Section A: Description of Database Application area and ER Model 2](#_Toc97738219)

[A.1 Application Description 2](#_Toc97738220)

[A.2 Entity Relationship Diagram 3](#_Toc97738221)

[A.3 Mapping to Relationship Schema 4](#_Toc97738222)

[A.4 Functional Dependency Diagrams 5](#_Toc97738223)

[Section B: Explanation of Data and SQL Code 6](#_Toc97738224)

[B.1 Table Creation and Constraints 6](#_Toc97738225)

[B.2 Altering Tables 6](#_Toc97738226)

[B.3 Trigger Operations 6](#_Toc97738227)

[B.4 Views 6](#_Toc97738228)

[B.5 Commands to Populate Tables 6](#_Toc97738229)

[B.6 Retrieving Information from Database 6](#_Toc97738230)

[B.7 Security 6](#_Toc97738231)

[B.8 Additional Features 6](#_Toc97738232)

# *Section A: Description of Database Application area and ER Model*

## A.1 Application Description

I created this database based on a fictional secret government department known as the Federal Bureau of Control (FBC). This department responds to Altered World Events (AWEs) in which Altered Items (AIs) are created. The FBC has a series of Agents that respond to these events, each of which designated a hierarchical Role in the agency and working within a specified Department within the agency. These AWEs result in Areas of Interest that are watched by a specified agent and are caused by Known Entities which are kept track of.

I will represent the FBC using tables for Altered World Events, Altered Items, Agents, Roles, Departments, Areas of Interest and Known Entities. The attributes of each table will be as follows.

* **Altered World Events (AWE)**

An AWE has a given ID number (in the form AWE-x), an agent assigned to this AWE, the location in which it occurred, the Altered Item that resulted from the AWE and the current status of the AWE

* **Altered Items (AI)**

An AI also has a given ID number (in the form AI-x), a name, the AWE it is associated with, any properties of the AI and the agent that is assigned to monitor the AI.

* **Agent**

Each Agent has a unique name given by the FBC, a date of birth, the role that they have been assigned in the agency, a Gender and the department in which they work.

* **Role**

Each Role has a unique title that it is associated with, It has a level of clearance, it also has whom it answers to in the hierarchical structure of the FBC and the number of current holders of that specified role.

* **Department**

Each Department has a unique name associated with it, a floor of the FBC headquarters (The Oldest House) that it is located on, a head of department, the number of AIs contained within that department, a specified purpose alongside the current status of that department.

* **Area of Interest**

Each area of interest has a unique name and the physical location in which it is based. It also keeps track of the most recent AWE that resulted in the area being of interest and the agent that has been assigned to monitor the area.

* **Known Entities**

All Entities have a unique name, the AWE that made the FBC aware of the entity (multiple entities can be known from one AWE), the location that the entity currently occupies, the status of the entity and also a brief description of who, or what, the entity is.

## Diagram Description automatically generatedA.2 Entity Relationship Diagram

Note: Underlined Attributes highlight a Primary Key

Note: Arrows are colour coded based on Table they stem from

## Graphical user interface Description automatically generatedA.3 Mapping to Relationship Schema

Note: Underlined Attributes are Primary Keys

Note: Coloured arrows and boxes highlight Primary-Foreign key links

## Graphical user interface, website Description automatically generatedA.4 Functional Dependency Diagrams

Note: Underlined Attributes highlight a Primary Key

Note: Matching Coloured boxes highlight a Primary-Foreign key link (Primary Keys in initial column).

# *Section B: Explanation of Data and SQL Code*

## B.1 Table Creation and Constraints

## B.2 Altering Tables

## B.3 Trigger Operations

## B.4 Views

## B.5 Commands to Populate Tables

## B.6 Retrieving Information from Database

## B.7 Security

## B.8 Additional Features