# *Phase III. Implementation Part 1*

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## 0. Pre-Illumination

For clearly describing the implementation of our database, we separate this report into three sections. In Section 1 we begin our process of building a database in MS Access using Query View, including tables, attributes, Primary Keys, foreign Keys, as well as data type and format. Further, in Section 2 we fill the tables with sample data. The creation of SQL Queries will be represented in Part 2 of Phase III. Implementation.

## 1. Creation of Database with SQL Statements

After normalizing every relational schema into third normal form and modifying some details, it is the time to implement our database using MS Access.

Using SQL statement, we create 20 tables as follows:

- **ATTENDEE_ID:**

-------------------------------------------------------------------------------------------------------

```
CREATE TABLE ATTENDEE_ID
(
Barcode Number NOT NULL,
ID Number,
PRIMARY KEY (Barcode)
);
```

-------------------------------------------------------------------------------------------------------

- **INDIVIDUAL_OCCUPATION:**

-------------------------------------------------------------------------------------------------------

```
CREATE TABLE INDIVIDUAL_OCCUPATION
(
ID Number NOT NULL,
Occupation VarChar(40),
PRIMARY KEY (ID),
FOREIGN KEY (ID) REFERENCES INDIVIDUALS (ID)
ON DELETE CASCADE
ON UPDATE CASCADE
);
```

-------------------------------------------------------------------------------------------------------

- **INDIVIDUAL:**

```
CREATE TABLE INDIVIDUAL
(
Barcode Number NOT NULL,
ID Number unique,
PRIMARY KEY (Barcode)
);
```

-------------------------------------------------------------------------------------------------------

- **DEPARTMENT:**

-------------------------------------------------------------------------------------------------------

```
CREATE TABLE DEPARTMENT
(
DNAME VARCHAR(30),
DPHONE VARCHAR(10),
DHEAD VARCHAR(30),
PRIMARY KEY (DNAME)
);
```

- **EVENT_:**

```
------------------------------------------------------------------------------------------------
CREATE TABLE EVENT_(
EVENT_ID VARCHAR(8),
DATE_OF_EVENT DATE,
MAX_OCCUPANCY INT,
PRIMARY KEY (EVENT_ID)
);
```

- **ADMIN_:**

```
------------------------------------------------------------------------------------------------
CREATE TABLE ADMIN_(
ADMIN_ID VARCHAR(8),
FIRST_NAME VARCHAR(15),
LAST_NAME VARCHAR(15),
PASSWORD_ VARCHAR(20),
PRIMARY KEY (ADMIN_ID)
);
```

- **ATTENDS:**

```
------------------------------------------------------------------------------
------------------------------
CREATE TABLE ATTENDS
(
EVENT_ID VARCHAR(8),
Barcode Number NOT NULL,
PRIMARY KEY (EVENT_ID),
FOREIGN KEY (EVENT_ID) REFERENCES EVENT_ (EVENT_ID),
FOREIGN KEY (Barcode) REFERENCES ATTENDEE_ID (Barcode)
ON DELETE CASCADE
ON UPDATE CASCADE
);
```

- **CAN_SPONSOR:**

```
------------------------------------------------------------------------------
------------------------------
CREATE TABLE CAN_SPONSOR
(
EVENT_ID VARCHAR(8),
BARCODE INT,
PRIMARY KEY (EVENT_ID),
FOREIGN KEY (EVENT_ID) REFERENCES EVENT_ (EVENT_ID),
FOREIGN KEY (BARCODE) REFERENCES SPONSORS_BARCODE (BARCODE)
ON DELETE CASCADE
ON UPDATE CASCADE
);
```

- **ASSOCIATES_WITH:**

-----------------------------------------------------------------------------------------------------

```sql
CREATE TABLE ASSOCIATES_WITH
(
EVENT_ID VARCHAR(8),
ADMIN_ID VARCHAR(8),
PRIMARY KEY (EVENT_ID),
FOREIGN KEY (EVENT_ID) REFERENCES EVENT_ (EVENT_ID),
FOREIGN KEY (ADMIN_ID) REFERENCES ADMIN_ (ADMIN_ID)
ON DELETE CASCADE
ON UPDATE CASCADE
);
```

- **CONDUCTED_BY:**

-----------------------------------------------------------------------------------------------------

```sql
CREATE TABLE CONDUCTED_BY
(
EVENT_ID VARCHAR(8),
DNAME VARCHAR(30),
PRIMARY KEY (EVENT_ID),
FOREIGN KEY (EVENT_ID) REFERENCES EVENT_ (EVENT_ID),
FOREIGN KEY (DNAME) REFERENCES DEPARTMENT (DNAME)
ON DELETE CASCADE
ON UPDATE CASCADE
);
```

  - **Attendee_Name**

-----------------------------------------------------------------------------------------------------

```sql
CREATE TABLE ATTENDEE_NAME(
ID              INT       NOT NULL,
NAME            VARCHAR   NOT NULL,
PRIMARY KEY(ID)
);
```

  - **Faculty**

-----------------------------------------------------------------------------------------------------

```sql
CREATE TABLE FACULTY(
FOFFICE      VARCHAR(30)        NOT NULL,
FPHONE       TEXT               NOT NULL,
BARCODE      TEXT               NOT NULL,
PRIMARY KEY(BARCODE)
);
```

  - **Staff**

---------------------------------------------------------------------------
-----------------------------------
```sql
CREATE TABLE STAFF(
DEPARTMENT      TEXT           NOT NULL,
```

```
BARCODE          TEXT          NOT NULL,
PRIMARY KEY(BARCODE)
);
```

- **Student**

---------------------------------------------------------------------------------------------

```
CREATE TABLE STUDENT(
CLASSIFICATION   VARCHAR(25),
BARCODE          TEXT          NOT NULL,
PRIMARY KEY(BARCODE)
);
```

- **Location**

---------------------------------------------------------------------------------------------

```
CREATE TABLE LOCATION(
EVENT_LOCATION VARCHAR (30),
EVENT_ID VARCHAR (8),
PRIMARY KEY (EVENT_LOCATION, EVENT_ID),
FOREIGN KEY (EVENT_ID) REFERENCES EVENT_(EVENT_ID)
ON DELETE CASCADE
ON UPDATE CASCADE
);
```

- **Genre**

---------------------------------------------------------------------------------------------

```
CREATE TABLE GENRE (
EVENT_GENRE VARCHAR(40),
EVENT_ID VARCHAR (8),
PRIMARY KEY (EVENT_ID, EVENT_GENRE),
FOREIGN KEY (EVENT_ID) REFERENCES EVENT_(EVENT_ID)
ON DELETE CASCADE
ON UPDATE CASCADE
);
```

- **GUEST**

---------------------------------------------------------------------------------------------

```
CREATE TABLE GUEST(
NAME VARCHAR(30),
RELATIONSHIP VARCHAR(30),
ATTENDEE_BARCODE NUMBER,
PRIMARY KEY (NAME, Barcode),
FOREIGN KEY (ATTENDEE_BARCODE) REFERENCES ATTENDEE_ID (Barcode)
ON DELETE CASCADE
```

```
ON UPDATE CASCADE
);
```

- **SPONSORS_BARCODE**

-----------------------------------------------------------------------------------------------------

```
CREATE TABLE SPONSORS_BARCODE (
BARCODE    INT,
STREET_NAME VARCHAR (30),
STREET_NUMBER VARCHAR(30),
APT INT ,
ZIP INT,
NAME VARCHAR (30),
PRIMARY KEY (BARCODE)
);
```

- **SPONSORS_ZIP**

-----------------------------------------------------------------------------------------------------

```
CREATE TABLE SPONSORS_ZIP (
ZIP DOUBLE,
CITY VARCHAR (20),
STATE VARCHAR (20),
PRIMARY KEY (ZIP)
);
```

- **COMPANY**

-----------------------------------------------------------------------------------------------------

```
CREATE TABLE COMPANY (
BARCODE NUMBER NOT NULL,
C_INDUSTRY VARCHAR (30),
PRIMARY KEY (BARCODE)
);
```

# 2. A Database State

We insert some values into the database in order to test our SQL query statement. The query for one of the insertion statements for each table and the final results are shown as follows:

- **INSERTION OF TABLE ADMIN_**

-----------------------------------------------------------------------------------------------------

```
INSERT INTO ADMIN_
```

```
VALUES
('404', 'Colonel', 'Sanders', 'CS@kfc');
```

----------------------------------------------------------------------------------------------------

| | ADMIN_ID ▾ | FIRST_NAME ▾ | LAST_NAME ▾ | PASSWORD ▾ |
|---|---|---|---|---|
| ⊞ | 101 | Michael | Scott | MScott124 |
| ⊞ | 202 | Dwight | Schrute | Dwight@123 |
| ⊞ | 303 | Pamela | Beesly | P@mmyBee10 |
| ⊞ | 404 | Colonel | Sanders | CS@kfc |
| ⊞ | 505 | Tony | Tiger | FF@ceral |
| ✳ | | | | |

● **INSERTION OF ASSOCIATES_WITH**

----------------------------------------------------------------------------------------------------

```
INSERT INTO ASSOCIATES_WITH
VALUES
(1111, 101);
```

----------------------------------------------------------------------------------------------------

| EVENT_ID ▾ | ADMIN_ID ▾ |
|---|---|
| 1111 | 101 |
| 2222 | 202 |
| 3333 | 303 |
| 4444 | 404 |
| 5555 | 505 |

● **INSERTION OF TABLE ATTENDEE_ID**

----------------------------------------------------------------------------------------------------

```
INSERT INTO ATTENDEE_ID
VALUES
(131516, 505);
```

----------------------------------------------------------------------------------------------------

| Barcode | ID |
|---|---|
| 110394 | 303 |
| 131516 | 505 |
| 222543 | 909 |
| 233568 | 606 |
| 333555 | 707 |
| 338235 | 101 |
| 343536 | 808 |
| 387662 | 202 |
| 912101 | 1010 |

---------------------------------------------------------------------------------------------------------

- **INSERTION OF ATTENDEE_NAME**

```
INSERT INTO ATTENDEE_NAME
VALUES ('303', 'Steve Rogers');
```

---------------------------------------------------------------------------------------------------------

| ID | NAME | Click to Add |
|---|---|---|
| 101 | Carol Denvers | |
| 202 | Tony Stark | |
| 303 | Steve Rogers | |
| 505 | Rachel Green | |
| 606 | Monica Geller | |
| 707 | Janice Hosenst | |
| 808 | Chandler Bing | |
| 1010 | Mike Hannigan | |

INSERTINTO   ATTENDEE_NAME

---------------------------------------------------------------------------------------------------------

- **INSERTION OF ATTENDS**

---------------------------------------------------------------------------------------------------------

```
INSERT INTO ATTENDS
VALUES
(1111, 131516);
```

---------------------------------------------------------------------------------------------------------

| EVENT_ID | Barcode | Click to Add |
|---|---|---|
| 1111 | 131516 | |
| 2222 | 233568 | |
| 3333 | 333555 | |
| 4444 | 343536 | |
| 5555 | 222543 | |

● **INSERTION OF CAN_SPONSOR**

-------------------------------------------------------------------------------------------------------

```
INSERT INTO CAN_SPONSOR
VALUES
(1111, 557480);
```

-------------------------------------------------------------------------------------------------------

| EVENT_ID | BARCODE |
|---|---|
| 1111 | 557480 |
| 2222 | 125589 |
| 3333 | 458779 |
| 4444 | 875641 |
| 5555 | 390024 |

● **INSERTION OF COMPANY**

-------------------------------------------------------------------------------------------------------

```
INSERT INTO COMPANY

VALUES (875641, 'Technology');
```

----------------------------------------------------------------

| BARCODE | C_INDUSTRY |
|---|---|
| 125589 | Safety |
| 390024 | Sports |
| 458779 | Finance |
| 557480 | Education |
| 875641 | Technology |
| | |

- ## INSERTION OF CONDUCTED_BY

-------------------------------------------------------------------------------------------------------

```
INSERT INTO CONDUCTED_BY
VALUES
(1111, 'Computer Science');
```

-------------------------------------------------------------------------------------------------------

| EVENT_ID | DNAME |
| --- | --- |
| 1111 | Computer Scien |
| 2222 | Nursing |
| 3333 | Business |
| 4444 | Engineering |
| 5555 | Pharmacy |

- ## INSERTION OF TABLE DEPARTMENT

-------------------------------------------------------------------------------------------------------

```
INSERT INTO DEPARTMENT
VALUES
('Computer Science', '1111111111', 'Spongebob Squarepants');
```

-------------------------------------------------------------------------------------------------------

| DNAME | DPHONE | DHEAD | Click to Add |
| --- | --- | --- | --- |
| ⊞ Business | 3333333333 | Santa Claus | |
| ⊞ Computer Scie | 1111111111 | Spongebob Squ | |
| ⊞ Engineering | 7777777777 | Thanos | |
| ⊞ Nursing | 4456342312 | Hillary Clinton | |
| ⊞ Pharmacy | 6769903001 | Captain Cavem | |
| * | | | |

- ## INSERTION OF TABLE EVENT_

-------------------------------------------------------------------------------------

```
INSERT INTO EVENT_
VALUES
('1111', '10/25/1985', 100);
```

-------------------------------------------------------------------------------------

| EVENT_ID | DATE_OF_E\ | MAX_OCCU |
|---|---|---|
| 1111 | 10/25/1985 | 100 |
| 2222 | 12/11/1986 | 420 |
| 3333 | 5/19/1987 | 100 |
| 4444 | 8/26/1988 | 62 |
| 5555 | 1/20/1989 | 3 |

- **INSERTION OF FACULTY**

```
INSERT INTO FACULTY
VALUES
('COSC143','234-322-6589','131519');
```

-----------------------------------------------------------------------------------------------------------

**FACULTY** ✕

| FOFFICE | FPHONE | BARCODE | Click to Add |
|---|---|---|---|
| COSC143 | 234-322-6589 | 131519 | |
| ENG332 | 456-207-1990 | 233568 | |
| HIS493 | 669-459-2241 | 333555 | |

-----------------------------------------------------------------------------------------------------------

- **INSERTION OF GENRE**

-----------------------------------------------------------------------------------------------------------

```
INSERT INTO GENRE
VALUES
(1111, 'Midnight Breakfast');
```

-----------------------------------------------------------------------------------------------------------

| EVENT_GENF | EVENT_ID |
|---|---|
| Midnight Breakf | 1111 |
| Intercollege Bas | 2222 |
| Homecoming M | 3333 |
| SAP Training | 4444 |

- ### INSERTION OF GUEST
------------------------------------------------------------------------------------------

```
INSERT INTO GUEST
VALUES
('Ross Geller', 'Brother',233568);
```
------------------------------------------------------------------------------------------

| NAME | RELATIONSH | ATTENDEE_B |
|------|------------|------------|
| Joey Tribbiani | Friend | 333555 |
| Phoebe Buffay | Friend | 233568 |
| Rose Geller | Brother | 233568 |

- ### INSERTION OF TABLE INDIVIDUAL
------------------------------------------------------------------------------------------

```
INSERT INTO INDIVIDUAL(ID, BARCODE)
VALUES
(356, 937456);
```
------------------------------------------------------------------------------------------

| Barcode | ID |
|---------|-----|
| 267252 | 560 |
| 334689 | 673 |
| 626352 | 325 |
| 937456 | 356 |

- ### INSERTION OF TABLE INDIVIDUAL_OCCUPATION
------------------------------------------------------------------------------------------

```
INSERT INTO INDIVIDUAL_OCCUPATION(OCCUPATION, ID)
VALUES
('Doctor', 356);
```
------------------------------------------------------------------------------------------

| ID | Occupation |
|-----|------------|
| 325 | Fire Fighter |
| 356 | Doctor |
| 560 | Software Developer |
| 673 | Teacher |

- **INSERTION OF LOCATION**

---

```
INSERT INTO LOCATION
VALUES
(1111, 'Cafeteria');
```

---

| EVENT_ID | EVENT_LOCA |
|----------|------------|
| 1111 | Cafeteria |
| 2222 | Stadium |
| 3333 | Theater Hall |
| 4444 | Classroom |

- **INSERTION OF SPONSORS_BARCODE**

---

```
INSERT INTO SPONSORS_BARCODE
VALUES (026352, 'Alumni Dr.', 360, 2005, 95666, 'James Nguyen');
```

---

| BARCODE | STREET_NAME | STREET_NUMBER | APT | ZIP | NAME |
|---------|-------------|---------------|-----|-----|------|
| 26352 | Alumni Dr. | 360 | 2005 | 95666 | James Nguyen |
| 125589 | S Whaley | 300 | 2330 | 53884 | Longview Fire Department #55 |
| 267252 | High Dr. | 348 | 1030 | 14998 | Marc Garcia |
| 334689 | My Rd. | 123 | 1332 | 55829 | Belami Jones |
| 390024 | Old Omen Rd. | 3088 | 4112 | 44331 | Nil Sporting Goods |
| 458779 | N. Dream St. | 2200 | 1222 | 69756 | Weston Bank Server |
| 557480 | University Blvd | 3900 | 1130 | 75701 | University of Texas at Tyler |
| 875641 | Preston Rd. | 2601 | 3221 | 87759 | Microsoft Stores |
| 937456 | McDonald Rd. | 3700 | 3311 | 77905 | Helena Scott |

- **INSERTION OF SPONSORS_ZIP**

---

```
INSERT INTO SPONSORS_ZIP
VALUES (95666, 'Las Vegas', 'Nevada');
```

--------------------------------------------------------------------------------

| ZIP | CITY | STATE |
|---|---|---|
| 14998 | Eureka | California |
| 44331 | Cleveland | Ohio |
| 53884 | Tupelo | Mississippi |
| 55829 | Monroe | Louisiana |
| 69756 | Orlando | Florida |
| 75701 | Tyler | Texas |
| 77905 | Knoxville | Tennessee |
| 87759 | Dothan | Alabama |
| 95666 | Las Vegas | Nevada |

- **INSERTION OF STAFF**

```
INSERT INTO STAFF
VALUES ('Computer Science', '110394');
```

--------------------------------------------------------------------------------

| STAFF | | |
|---|---|---|
| DEPARTMENT | BARCODE | Click to Add |
| Computer Science | 110394 | |
| English | 338235 | |
| Art | 387662 | |
| History | 912101 | |

--------------------------------------------------------------------------------

- **INSERTION OF STUDENT**

```
INSERT INTO STUDENT
VALUES
('Junior', '222543');
```

--------------------------------------------------------------------------------

| STUDENT | × | |
|---|---|---|
| CLASSIFICAT ▽ | BARCODE ▽ | Click to Add ▽ |
| Junior | 222543 | |
| SENIOR | 343536 | |
| Sophomore | 912101 | |
| * | | |

---

Till now we have finished the process of creating tables and inserting some values into the tables.