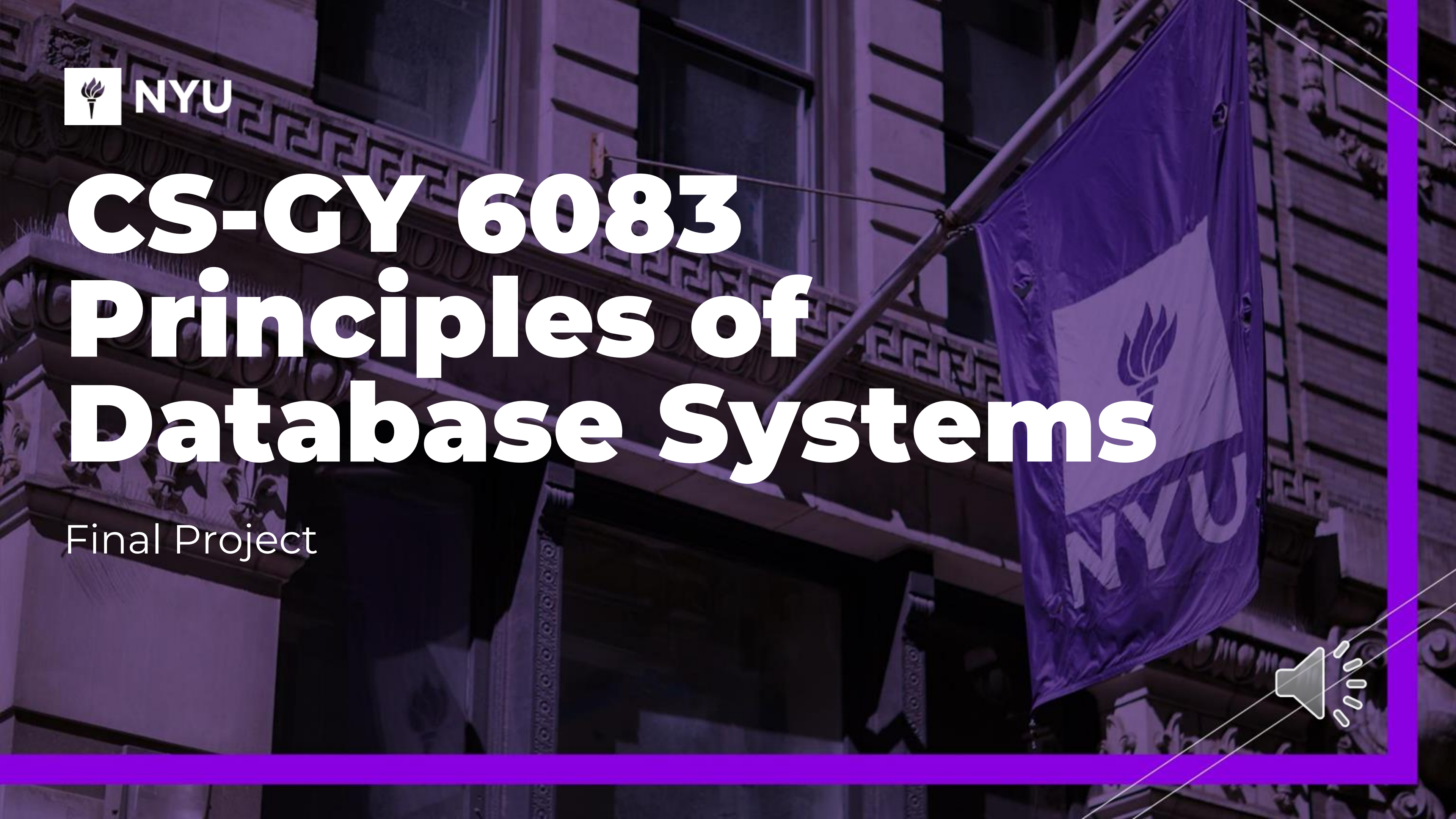
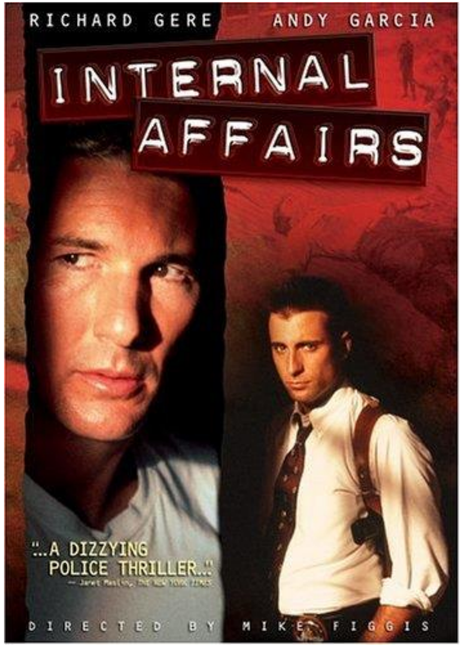


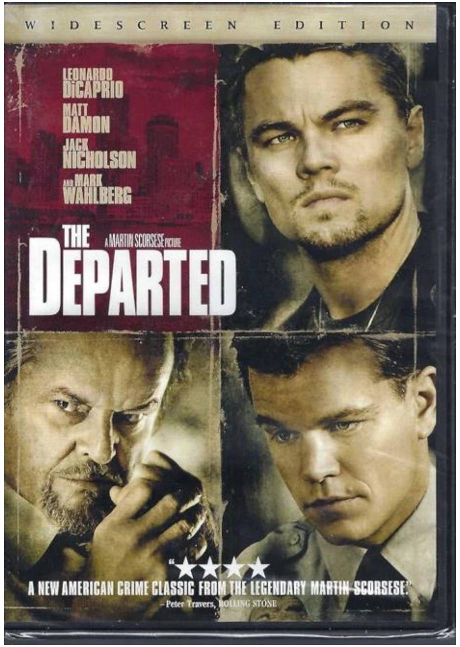
NYU

CS-GY 6083 Principles of Database Systems

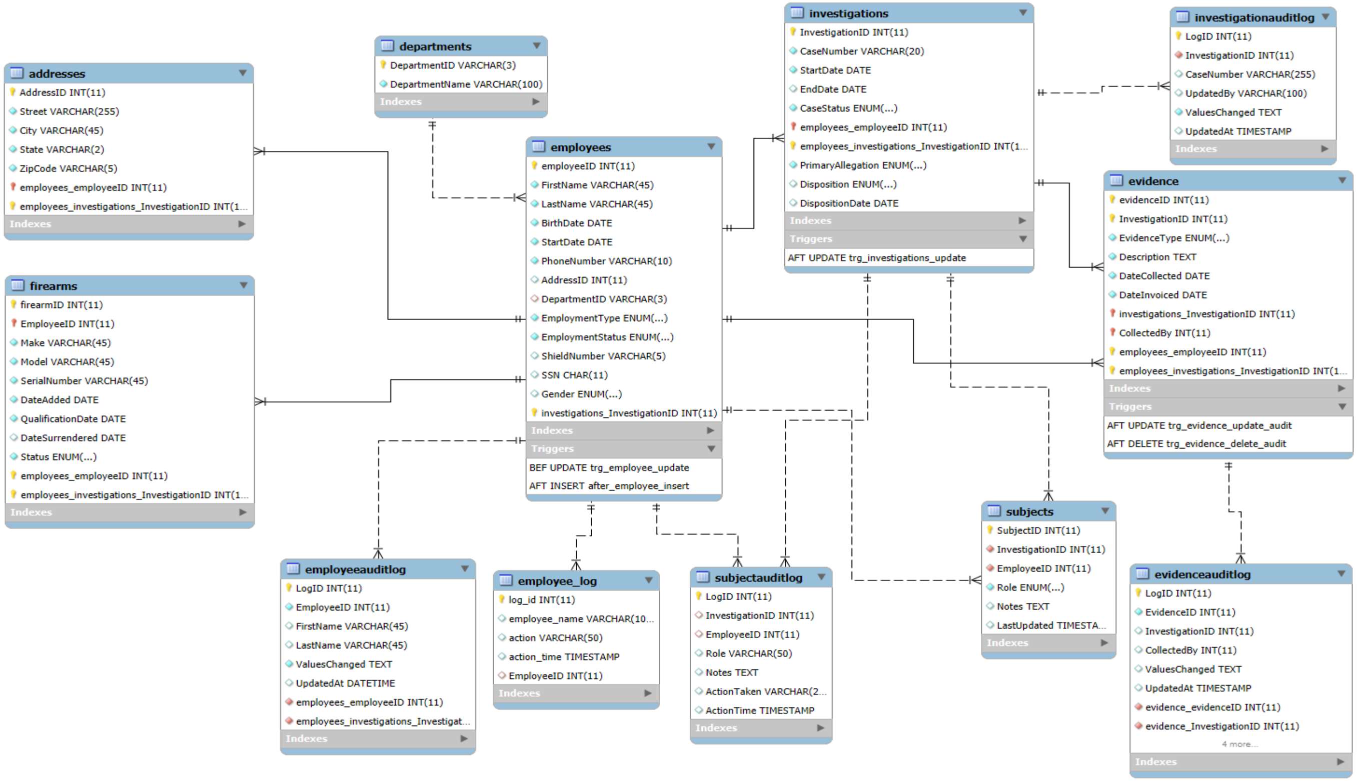
Final Project

Internal Investigations DB


RICHARD GERE
ANDY GARCIA
INTERNAL AFFAIRS
"...A DIZZYING POLICE THRILLER..."
— Janet Maslin, THE NEW YORK TIMES
DIRECTED BY MIKE FIGGIS


WIDESCREEN EDITION
LEONARDO DiCAPRIO
MATT DAMON
JACK NICHOLSON
AND MARK WAHLBERG
THE DEPARTED
A MARTIN SCORSESE PICTURE
"★★★★ A NEW AMERICAN CRIME CLASSIC FROM THE LEGENDARY MARTIN SCORSESE."
– Peter Travers, ROLLING STONE

ER Diagram



addresses
AddressID INT(11)
Street VARCHAR(255)
City VARCHAR(45)
State VARCHAR(2)
ZipCode VARCHAR(5)
employees_employeeID INT(11)
employees_investigations_InvestigationID INT(1...
Indexes

departments
DepartmentID VARCHAR(3)
DepartmentName VARCHAR(100)
Indexes

investigations
InvestigationID INT(11)
CaseNumber VARCHAR(20)
StartDate DATE
EndDate DATE
CaseStatus ENUM(...)
employees_employeeID INT(11)
employees_investigations_InvestigationID INT(1...
PrimaryAllegation ENUM(...)
Disposition ENUM(...)
DispositionDate DATE
Indexes
Triggers
AFT UPDATE trg_investigations_update

investigationauditlog
LogID INT(11)
InvestigationID INT(11)
CaseNumber VARCHAR(255)
UpdatedBy VARCHAR(100)
ValuesChanged TEXT
UpdatedAt TIMESTAMP
Indexes

employees
employeeID INT(11)
FirstName VARCHAR(45)
LastName VARCHAR(45)
BirthDate DATE
StartDate DATE
PhoneNumber VARCHAR(10)
AddressID INT(11)
DepartmentID VARCHAR(3)
EmploymentType ENUM(...)
EmploymentStatus ENUM(...)
ShieldNumber VARCHAR(5)
SSN CHAR(11)
Gender ENUM(...)
investigations_InvestigationID INT(11)
Indexes
Triggers
BEF UPDATE trg_employee_update
AFT INSERT after_employee_insert

evidence
evidenceID INT(11)
InvestigationID INT(11)
EvidenceType ENUM(...)
Description TEXT
DateCollected DATE
DateInvoiced DATE
investigations_InvestigationID INT(11)
CollectedBy INT(11)
employees_employeeID INT(11)
employees_investigations_InvestigationID INT(1...
Indexes
Triggers
AFT UPDATE trg_evidence_update_audit
AFT DELETE trg_evidence_delete_audit

firearms
firearmID INT(11)
EmployeeID INT(11)
Make VARCHAR(45)
Model VARCHAR(45)
SerialNumber VARCHAR(45)
DateAdded DATE
QualificationDate DATE
DateSurrendered DATE
Status ENUM(...)
employees_employeeID INT(11)
employees_investigations_InvestigationID INT(1...
Indexes

subjects
SubjectID INT(11)
InvestigationID INT(11)
EmployeeID INT(11)
Role ENUM(...)
Notes TEXT
LastUpdated TIMESTA...
Indexes

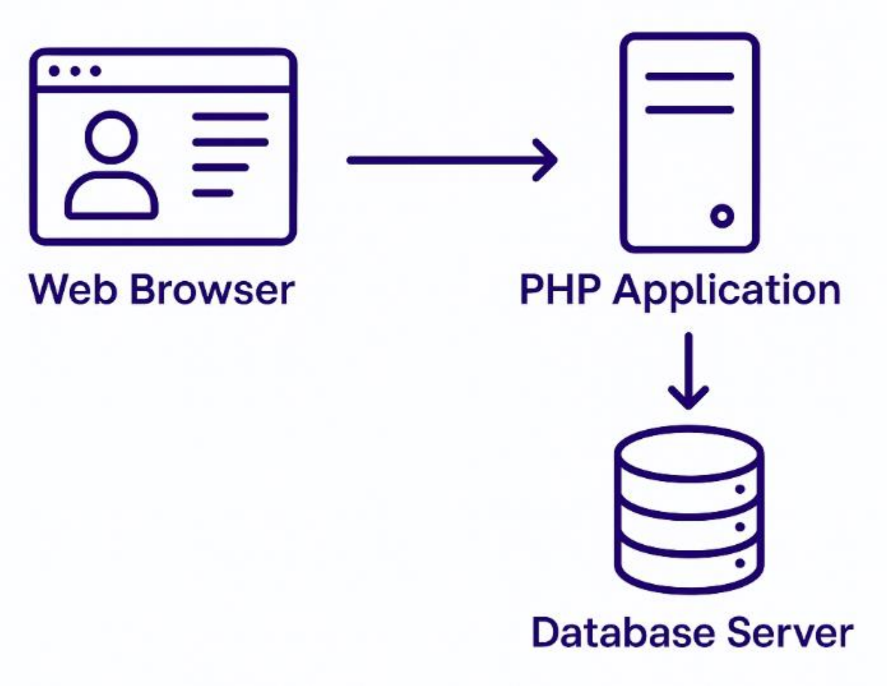
employeeauditlog
LogID INT(11)
EmployeeID INT(11)
FirstName VARCHAR(45)
LastName VARCHAR(45)
ValuesChanged TEXT
UpdatedAt DATETIME
employees_employeeID INT(11)
employees_investigations_Investigat...
Indexes

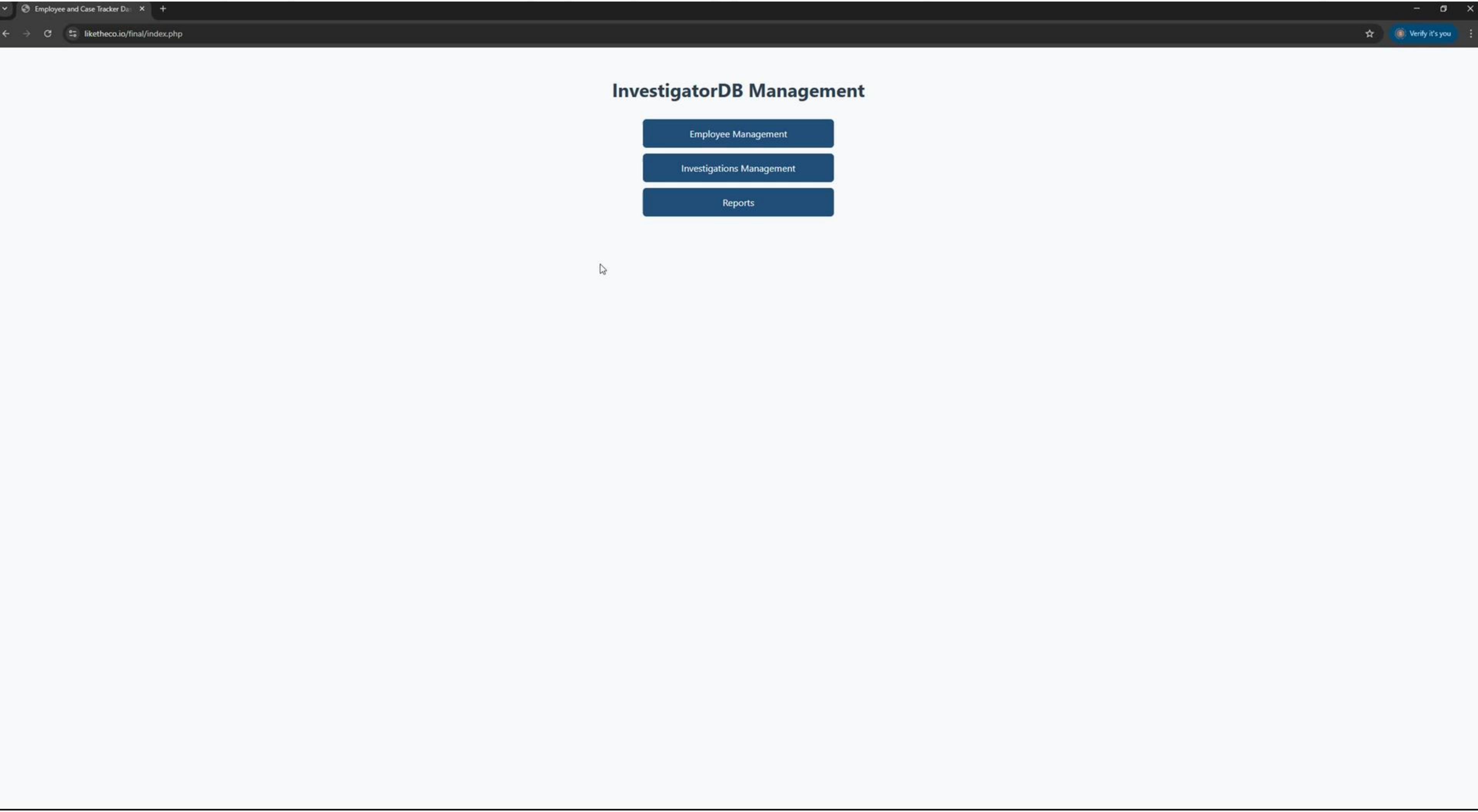
employee_log
log_id INT(11)
employee_name VARCHAR(10...
action VARCHAR(50)
action_time TIMESTAMP
EmployeeID INT(11)
Indexes

subjectauditlog
LogID INT(11)
InvestigationID INT(11)
EmployeeID INT(11)
Role VARCHAR(50)
Notes TEXT
ActionTaken VARCHAR(2...
ActionTime TIMESTAMP
Indexes

evidenceauditlog
LogID INT(11)
EvidenceID INT(11)
InvestigationID INT(11)
CollectedBy INT(11)
ValuesChanged TEXT
UpdatedAt TIMESTAMP
evidence_evidenceID INT(11)
evidence_InvestigationID INT(11)
4 more...
Indexes

Architecture





InvestigatorDB Management

Employee and Case Tracker Da
liketheco.io/final/index.php
Verify it's you
Employee Management
Investigations Management
Reports

Breakdown

- 12 Tables
- 11 Views
- 5 triggers
- 1 Stored Procedure
- 1 Function
- 3 reports, 5 Audit logs
- Normalization: BCNF
- Integrity Enforcement: PKs, ENUMS, constraints
- Isolation Level: READ-COMMITTED
- All tables have CRUD operations

Tables

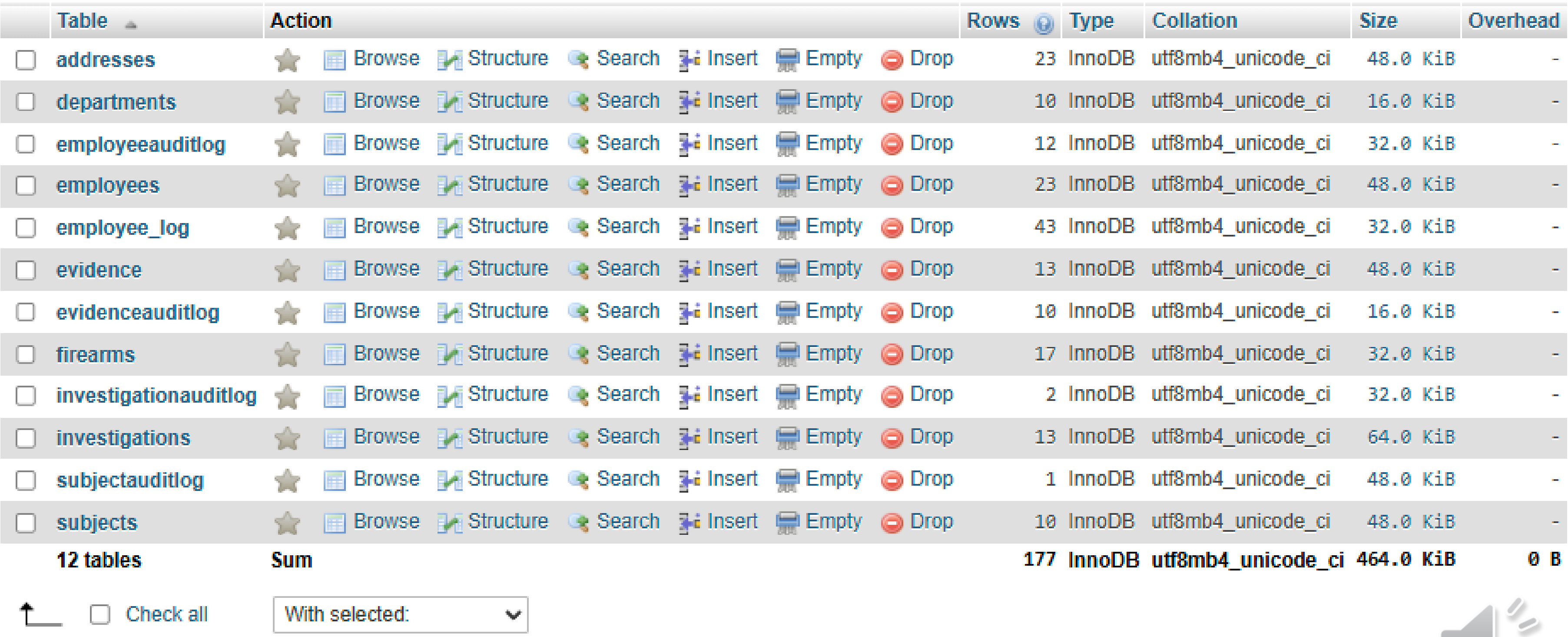


	Table ▲	Action							Rows	Type	Collation	Size	Overhead
□	addresses	★	Browse	Structure	Search	Insert	Empty	Drop	23	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
□	departments	★	Browse	Structure	Search	Insert	Empty	Drop	10	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
□	employeeauditlog	★	Browse	Structure	Search	Insert	Empty	Drop	12	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
□	employees	★	Browse	Structure	Search	Insert	Empty	Drop	23	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
□	employee_log	★	Browse	Structure	Search	Insert	Empty	Drop	43	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
□	evidence	★	Browse	Structure	Search	Insert	Empty	Drop	13	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
□	evidenceauditlog	★	Browse	Structure	Search	Insert	Empty	Drop	10	InnoDB	utf8mb4_unicode_ci	16.0 KiB	-
□	firearms	★	Browse	Structure	Search	Insert	Empty	Drop	17	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
□	investigationauditlog	★	Browse	Structure	Search	Insert	Empty	Drop	2	InnoDB	utf8mb4_unicode_ci	32.0 KiB	-
□	investigations	★	Browse	Structure	Search	Insert	Empty	Drop	13	InnoDB	utf8mb4_unicode_ci	64.0 KiB	-
□	subjectauditlog	★	Browse	Structure	Search	Insert	Empty	Drop	1	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
□	subjects	★	Browse	Structure	Search	Insert	Empty	Drop	10	InnoDB	utf8mb4_unicode_ci	48.0 KiB	-
	12 tables	Sum							177	InnoDB	utf8mb4_unicode_ci	464.0 KiB	0 B

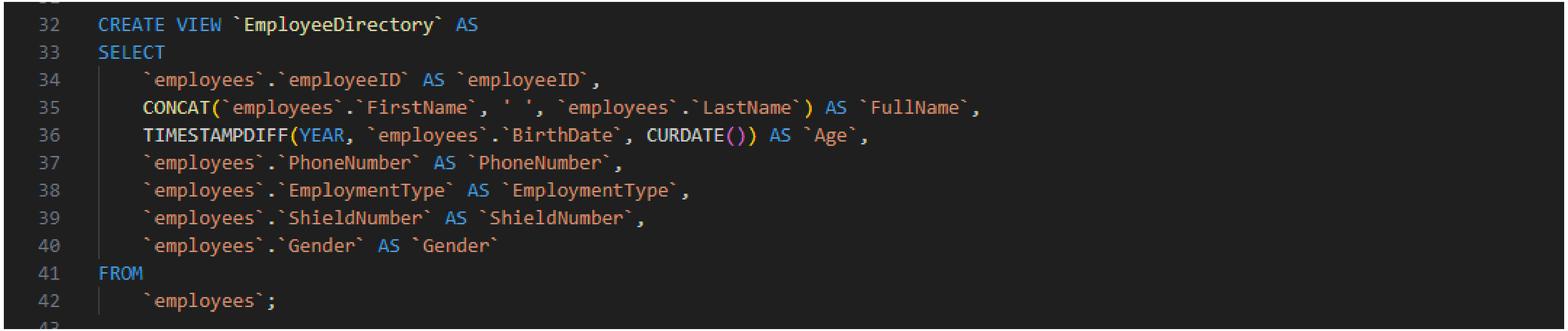
□ Check all

With selected:

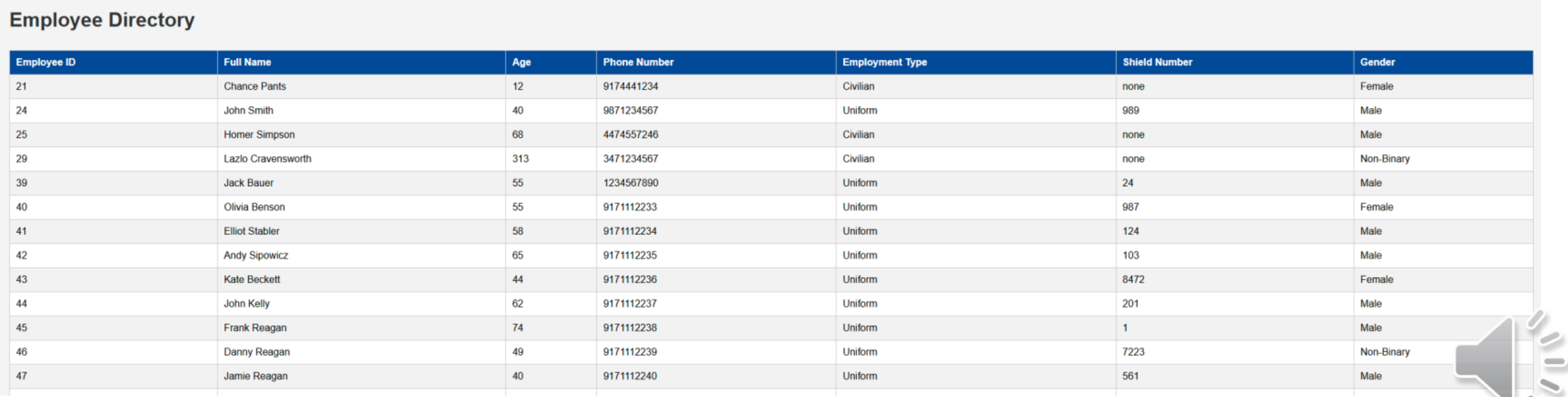
Tables with Complexity

Table Name	Features
addresses	Shared FK
departments	Lookup table, linked by FK
employee_log	Low complexity, just records audit entries.
employeeauditlog	Logs only changed fields, used in trigger
employees	Primary Key (PK), Foreign Key (FK) to addresses,12+ fields
evidence	FK to investigations, links employees and investigations
firearms	FK to employees, includes FirearmID, Type, Status
investigationauditlog	Logs only changed fields, used in trigger
investigations	PK, multiple FKs (investigator, subject, evidence)
subjectauditlog	Pulls info from three tables (evidence, subject audit log, employees)
subjects	Composite PK (InvestigationID + EmployeeID), FK to both

View DDL



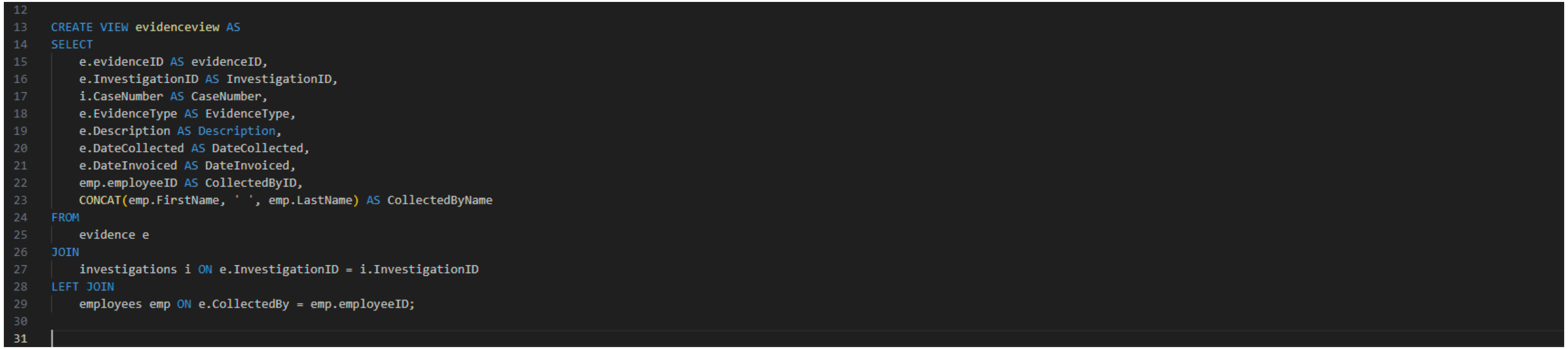
```sql
CREATE VIEW `EmployeeDirectory` AS
SELECT
    `employees`.`employeeID` AS `employeeID`,
    CONCAT(`employees`.`FirstName`, ' ', `employees`.`LastName`) AS `FullName`,
    TIMESTAMPDIFF(YEAR, `employees`.`BirthDate`, CURDATE()) AS `Age`,
    `employees`.`PhoneNumber` AS `PhoneNumber`,
    `employees`.`EmploymentType` AS `EmploymentType`,
    `employees`.`ShieldNumber` AS `ShieldNumber`,
    `employees`.`Gender` AS `Gender`
FROM
    `employees`;
```



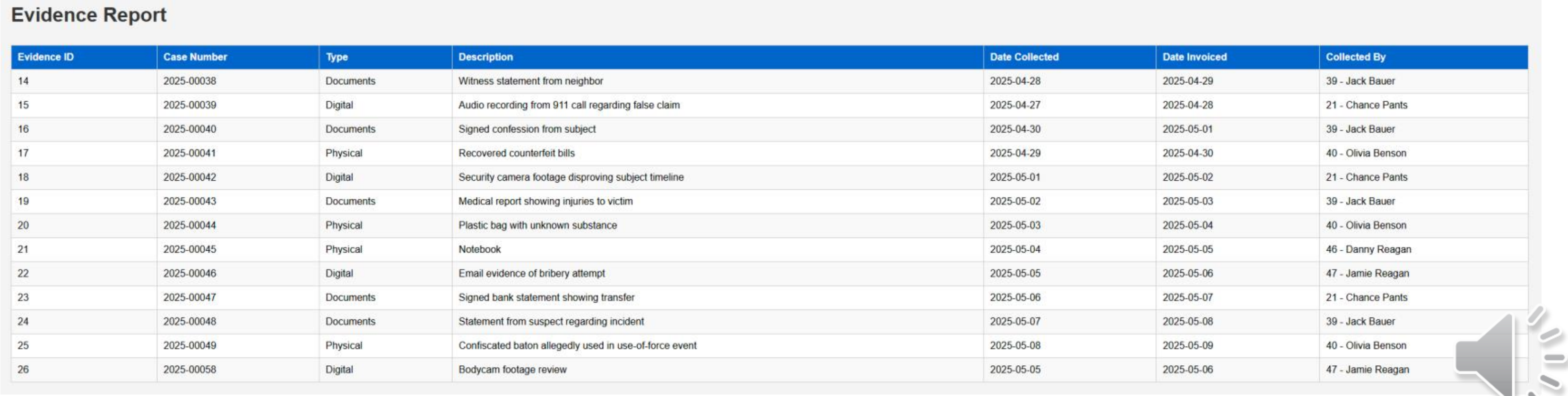
Employee Directory

Employee ID	Full Name	Age	Phone Number	Employment Type	Shield Number	Gender
21	Chance Pants	12	9174441234	Civilian	none	Female
24	John Smith	40	9871234567	Uniform	989	Male
25	Homer Simpson	68	4474557246	Civilian	none	Male
29	Lazlo Cravensworth	313	3471234567	Civilian	none	Non-Binary
39	Jack Bauer	55	1234567890	Uniform	24	Male
40	Olivia Benson	55	9171112233	Uniform	987	Female
41	Elliot Stabler	58	9171112234	Uniform	124	Male
42	Andy Sipowicz	65	9171112235	Uniform	103	Male
43	Kate Beckett	44	9171112236	Uniform	8472	Female
44	John Kelly	62	9171112237	Uniform	201	Male
45	Frank Reagan	74	9171112238	Uniform	1	Male
46	Danny Reagan	49	9171112239	Uniform	7223	Non-Binary
47	Jamie Reagan	40	9171112240	Uniform	561	Male

View DDL



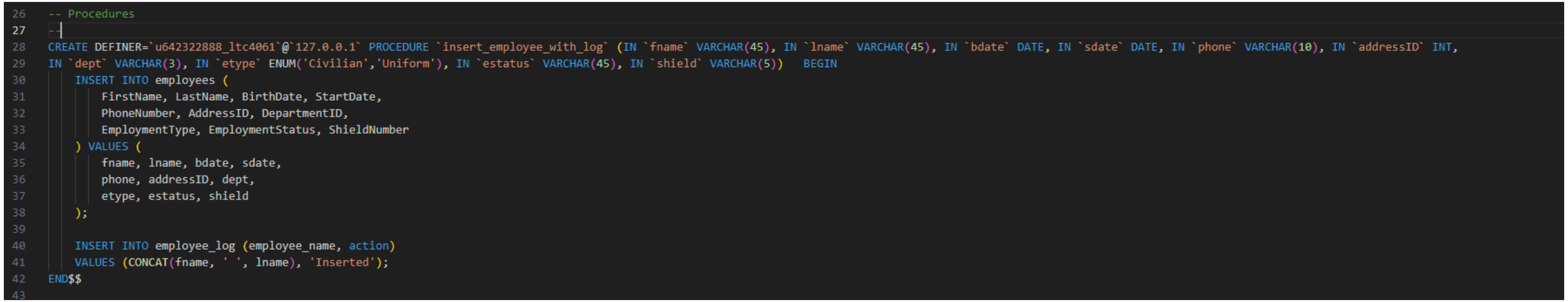
```sql
CREATE VIEW evidenceview AS
SELECT
    e.evidenceID AS evidenceID,
    e.InvestigationID AS InvestigationID,
    i.CaseNumber AS CaseNumber,
    e.EvidenceType AS EvidenceType,
    e.Description AS Description,
    e.DateCollected AS DateCollected,
    e.DateInvoiced AS DateInvoiced,
    emp.employeeID AS CollectedByID,
    CONCAT(emp.FirstName, ' ', emp.LastName) AS CollectedByName
FROM
    evidence e
JOIN
    investigations i ON e.InvestigationID = i.InvestigationID
LEFT JOIN
    employees emp ON e.CollectedBy = emp.employeeID;

```



Evidence Report

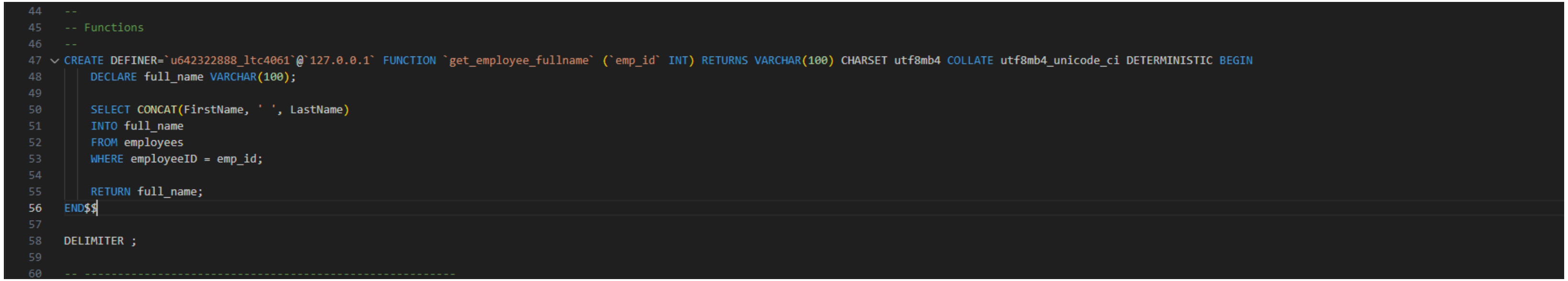
Evidence ID	Case Number	Type	Description	Date Collected	Date Invoiced	Collected By
14	2025-00038	Documents	Witness statement from neighbor	2025-04-28	2025-04-29	39 - Jack Bauer
15	2025-00039	Digital	Audio recording from 911 call regarding false claim	2025-04-27	2025-04-28	21 - Chance Pants
16	2025-00040	Documents	Signed confession from subject	2025-04-30	2025-05-01	39 - Jack Bauer
17	2025-00041	Physical	Recovered counterfeit bills	2025-04-29	2025-04-30	40 - Olivia Benson
18	2025-00042	Digital	Security camera footage disproving subject timeline	2025-05-01	2025-05-02	21 - Chance Pants
19	2025-00043	Documents	Medical report showing injuries to victim	2025-05-02	2025-05-03	39 - Jack Bauer
20	2025-00044	Physical	Plastic bag with unknown substance	2025-05-03	2025-05-04	40 - Olivia Benson
21	2025-00045	Physical	Notebook	2025-05-04	2025-05-05	46 - Danny Reagan
22	2025-00046	Digital	Email evidence of bribery attempt	2025-05-05	2025-05-06	47 - Jamie Reagan
23	2025-00047	Documents	Signed bank statement showing transfer	2025-05-06	2025-05-07	21 - Chance Pants
24	2025-00048	Documents	Statement from suspect regarding incident	2025-05-07	2025-05-08	39 - Jack Bauer
25	2025-00049	Physical	Confiscated baton allegedly used in use-of-force event	2025-05-08	2025-05-09	40 - Olivia Benson
26	2025-00058	Digital	Bodycam footage review	2025-05-05	2025-05-06	47 - Jamie Reagan

Procedure DDL

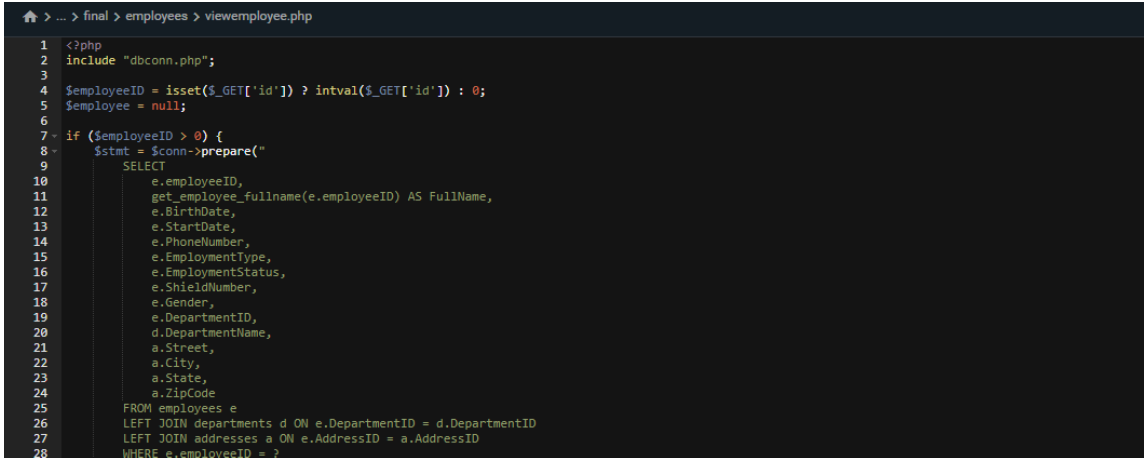


```sql
-- Procedures
--
CREATE DEFINER=`u642322888_ltc4061`@`127.0.0.1` PROCEDURE `insert_employee_with_log` (IN `fname` VARCHAR(45), IN `lname` VARCHAR(45), IN `bdate` DATE, IN `sdate` DATE, IN `phone` VARCHAR(10), IN `addressID` INT,
IN `dept` VARCHAR(3), IN `etype` ENUM('Civilian','Uniform'), IN `estatus` VARCHAR(45), IN `shield` VARCHAR(5))   BEGIN
    INSERT INTO employees (
        FirstName, LastName, BirthDate, StartDate,
        PhoneNumber, AddressID, DepartmentID,
        EmploymentType, EmploymentStatus, ShieldNumber
    ) VALUES (
        fname, lname, bdate, sdate,
        phone, addressID, dept,
        etype, estatus, shield
    );

    INSERT INTO employee_log (employee_name, action)
    VALUES (CONCAT(fname, ' ', lname), 'Inserted');
END$$

```

Function DDL

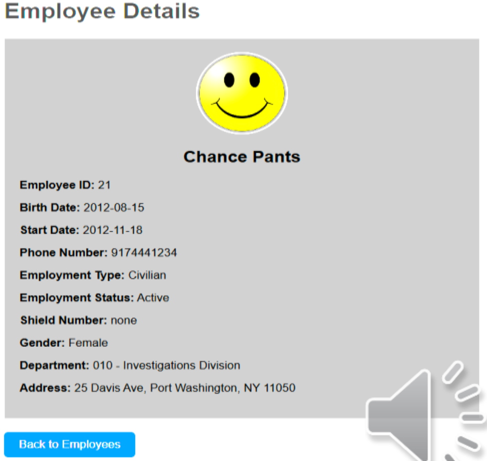


```
--
-- Functions
--
CREATE DEFINER=`u642322888_ltc4061`@`127.0.0.1` FUNCTION `get_employee_fullname` (`emp_id` INT) RETURNS VARCHAR(100) CHARSET utf8mb4 COLLATE utf8mb4_unicode_ci DETERMINISTIC BEGIN
    DECLARE full_name VARCHAR(100);

    SELECT CONCAT(FirstName, ' ', LastName)
    INTO full_name
    FROM employees
    WHERE employeeID = emp_id;

    RETURN full_name;
END$$

DELIMITER ;

-- --------------------------------------------------------
```



... > final > employees > viewemployee.php

```
<?php
include "dbconn.php";

$employeeID = isset($_GET['id']) ? intval($_GET['id']) : 0;
$employee = null;

if ($employeeID > 0) {
    $stmt = $conn->prepare("
        SELECT
            e.employeeID,
            get_employee_fullname(e.employeeID) AS FullName,
            e.BirthDate,
            e.StartDate,
            e.PhoneNumber,
            e.EmploymentType,
            e.EmploymentStatus,
            e.ShieldNumber,
            e.Gender,
            e.DepartmentID,
            d.DepartmentName,
            a.Street,
            a.City,
            a.State,
            a.ZipCode
        FROM employees e
        LEFT JOIN departments d ON e.DepartmentID = d.DepartmentID
        LEFT JOIN addresses a ON e.AddressID = a.AddressID
        WHERE e.employeeID = ?
```



Employee Details

Chance Pants

Employee ID: 21

Birth Date: 2012-08-15

Start Date: 2012-11-18

Phone Number: 9174441234

Employment Type: Civilian

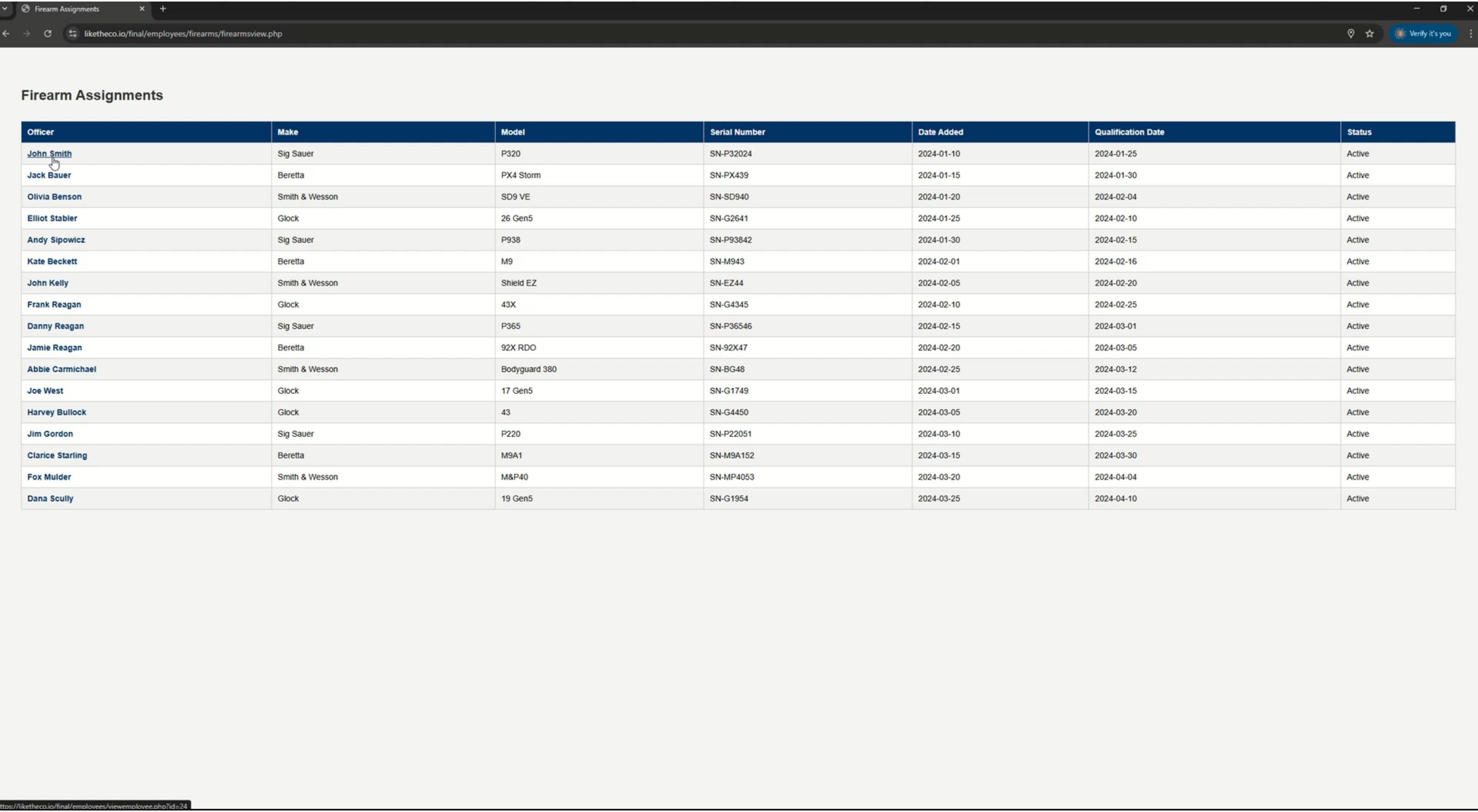
Employment Status: Active

Shield Number: none

Gender: Female

Department: 010 - Investigations Division

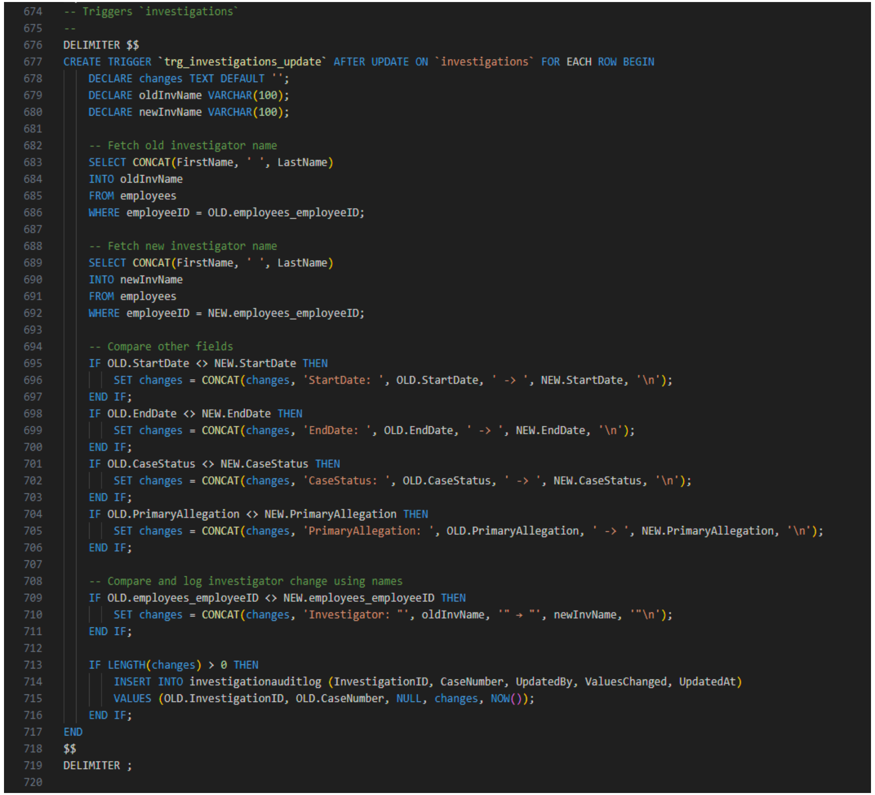
Address: 25 Davis Ave, Port Washington, NY 11050


Firearm Assignments
liketheco.io/final/employees/firearms/firearmsview.php
Verify it's you
ttps://liketheco.io/final/employees/viewemployee.php?id=24

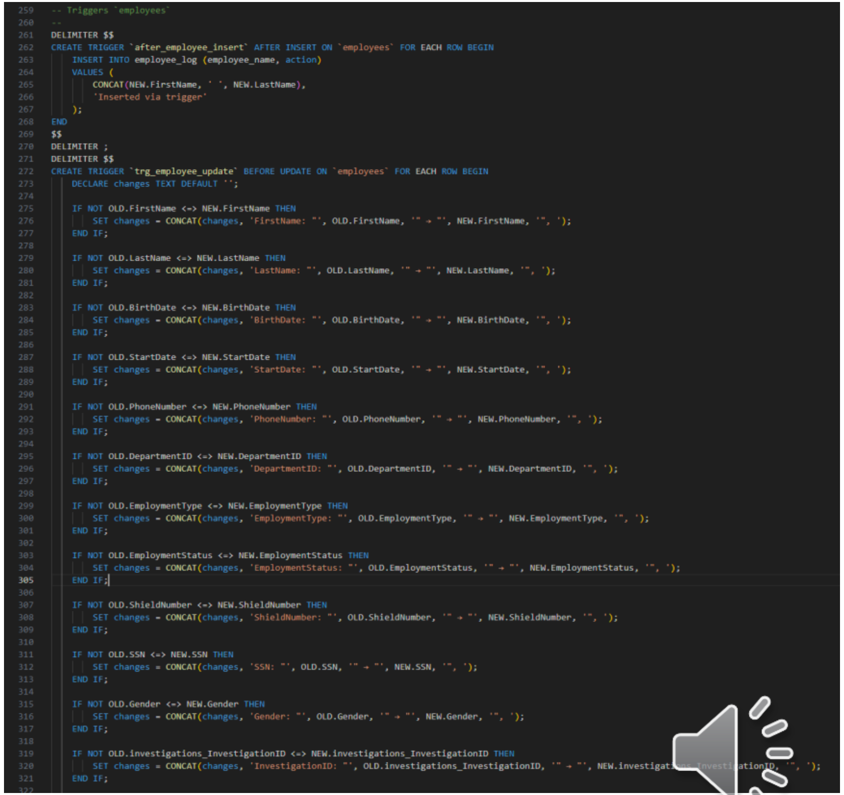
Firearm Assignments

Officer	Make	Model	Serial Number	Date Added	Qualification Date	Status
John Smith	Sig Sauer	P320	SN-P32024	2024-01-10	2024-01-25	Active
Jack Bauer	Beretta	PX4 Storm	SN-PX439	2024-01-15	2024-01-30	Active
Olivia Benson	Smith & Wesson	SD9 VE	SN-SD940	2024-01-20	2024-02-04	Active
Elliot Stabler	Glock	26 Gen5	SN-G2641	2024-01-25	2024-02-10	Active
Andy Sipowicz	Sig Sauer	P938	SN-P93842	2024-01-30	2024-02-15	Active
Kate Beckett	Beretta	M9	SN-M943	2024-02-01	2024-02-16	Active
John Kelly	Smith & Wesson	Shield EZ	SN-EZ44	2024-02-05	2024-02-20	Active
Frank Reagan	Glock	43X	SN-G4345	2024-02-10	2024-02-25	Active
Danny Reagan	Sig Sauer	P365	SN-P36546	2024-02-15	2024-03-01	Active
Jamie Reagan	Beretta	92X RDO	SN-92X47	2024-02-20	2024-03-05	Active
Abbie Carmichael	Smith & Wesson	Bodyguard 380	SN-BG48	2024-02-25	2024-03-12	Active
Joe West	Glock	17 Gen5	SN-G1749	2024-03-01	2024-03-15	Active
Harvey Bullock	Glock	43	SN-G4450	2024-03-05	2024-03-20	Active
Jim Gordon	Sig Sauer	P220	SN-P22051	2024-03-10	2024-03-25	Active
Clarice Starling	Beretta	M9A1	SN-M9A152	2024-03-15	2024-03-30	Active
Fox Mulder	Smith & Wesson	M&P40	SN-MP4053	2024-03-20	2024-04-04	Active
Dana Scully	Glock	19 Gen5	SN-G1954	2024-03-25	2024-04-10	Active

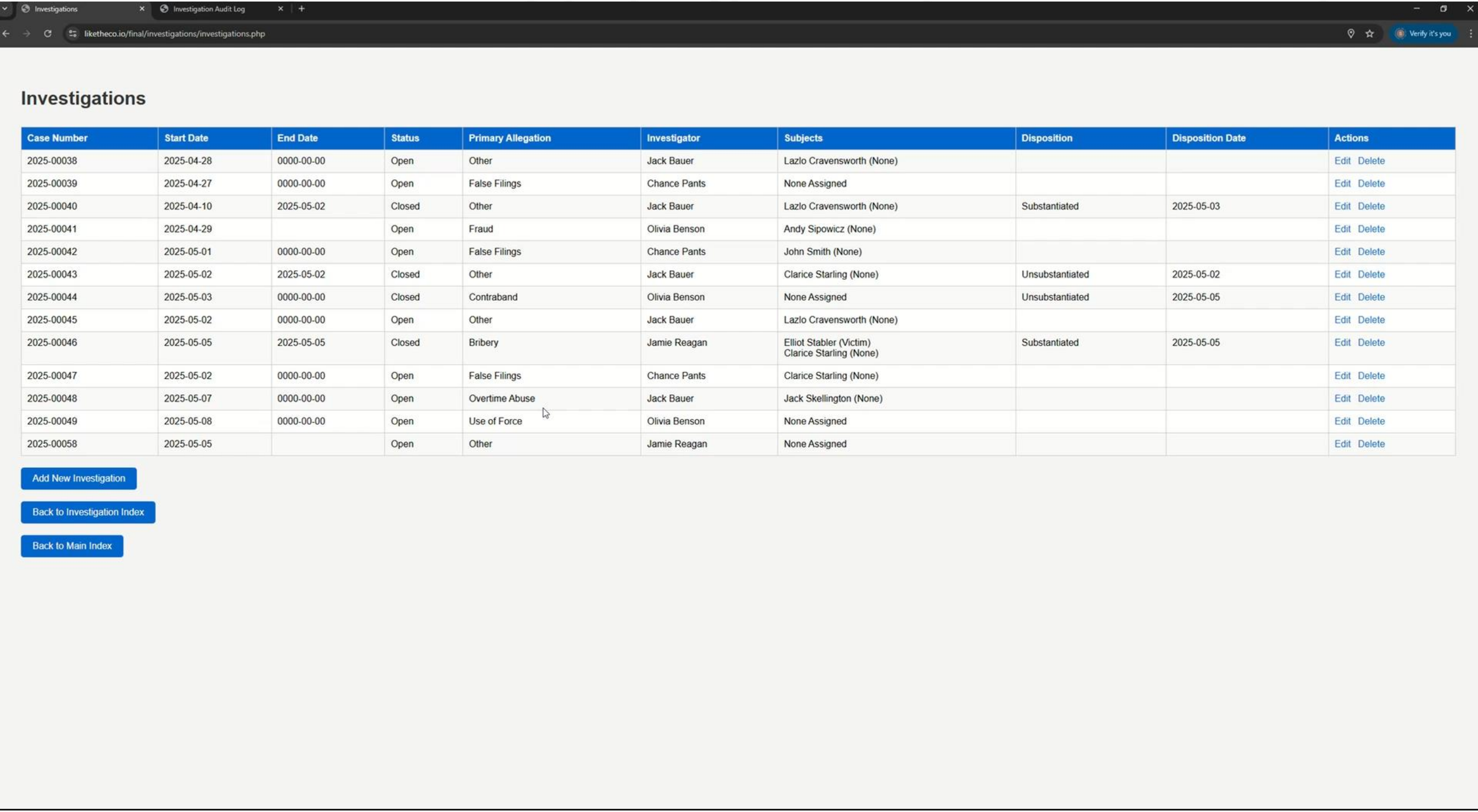
Trigger DDL



```sql
-- Triggers `investigations`
--
DELIMITER $$
CREATE TRIGGER `trg_investigations_update` AFTER UPDATE ON `investigations` FOR EACH ROW BEGIN
    DECLARE changes TEXT DEFAULT '';
    DECLARE oldInvName VARCHAR(100);
    DECLARE newInvName VARCHAR(100);

    -- Fetch old investigator name
    SELECT CONCAT(FirstName, ' ', LastName)
    INTO oldInvName
    FROM employees
    WHERE employeeID = OLD.employees_employeeID;

    -- Fetch new investigator name
    SELECT CONCAT(FirstName, ' ', LastName)
    INTO newInvName
    FROM employees
    WHERE employeeID = NEW.employees_employeeID;

    -- Compare other fields
    IF OLD.StartDate <> NEW.StartDate THEN
        SET changes = CONCAT(changes, 'StartDate: ', OLD.StartDate, ' -> ', NEW.StartDate, '\n');
    END IF;
    IF OLD.EndDate <> NEW.EndDate THEN
        SET changes = CONCAT(changes, 'EndDate: ', OLD.EndDate, ' -> ', NEW.EndDate, '\n');
    END IF;
    IF OLD.CaseStatus <> NEW.CaseStatus THEN
        SET changes = CONCAT(changes, 'CaseStatus: ', OLD.CaseStatus, ' -> ', NEW.CaseStatus, '\n');
    END IF;
    IF OLD.PrimaryAllegation <> NEW.PrimaryAllegation THEN
        SET changes = CONCAT(changes, 'PrimaryAllegation: ', OLD.PrimaryAllegation, ' -> ', NEW.PrimaryAllegation, '\n');
    END IF;

    -- Compare and log investigator change using names
    IF OLD.employees_employeeID <> NEW.employees_employeeID THEN
        SET changes = CONCAT(changes, 'Investigator: "', oldInvName, '" → "', newInvName, '"\n');
    END IF;

    IF LENGTH(changes) > 0 THEN
        INSERT INTO investigationauditlog (InvestigationID, CaseNumber, UpdatedBy, ValuesChanged, UpdatedAt)
        VALUES (OLD.InvestigationID, OLD.CaseNumber, NULL, changes, NOW());
    END IF;
END
$$
DELIMITER ;

```



```sql
-- Triggers `employees`
--
DELIMITER $$
CREATE TRIGGER `after_employee_insert` AFTER INSERT ON `employees` FOR EACH ROW BEGIN
    INSERT INTO employee_log (employee_name, action)
    VALUES (
        CONCAT(NEW.FirstName, ' ', NEW.LastName),
        'Inserted via trigger'
    );
END
$$
DELIMITER ;
DELIMITER $$
CREATE TRIGGER `trg_employee_update` BEFORE UPDATE ON `employees` FOR EACH ROW BEGIN
    DECLARE changes TEXT DEFAULT '';

    IF NOT OLD.FirstName <=> NEW.FirstName THEN
        SET changes = CONCAT(changes, 'FirstName: "', OLD.FirstName, '" → "', NEW.FirstName, '", ');
    END IF;

    IF NOT OLD.LastName <=> NEW.LastName THEN
        SET changes = CONCAT(changes, 'LastName: "', OLD.LastName, '" → "', NEW.LastName, '", ');
    END IF;

    IF NOT OLD.BirthDate <=> NEW.BirthDate THEN
        SET changes = CONCAT(changes, 'BirthDate: "', OLD.BirthDate, '" → "', NEW.BirthDate, '", ');
    END IF;

    IF NOT OLD.StartDate <=> NEW.StartDate THEN
        SET changes = CONCAT(changes, 'StartDate: "', OLD.StartDate, '" → "', NEW.StartDate, '", ');
    END IF;

    IF NOT OLD.PhoneNumber <=> NEW.PhoneNumber THEN
        SET changes = CONCAT(changes, 'PhoneNumber: "', OLD.PhoneNumber, '" → "', NEW.PhoneNumber, '", ');
    END IF;

    IF NOT OLD.DepartmentID <=> NEW.DepartmentID THEN
        SET changes = CONCAT(changes, 'DepartmentID: "', OLD.DepartmentID, '" → "', NEW.DepartmentID, '", ');
    END IF;

    IF NOT OLD.EmploymentType <=> NEW.EmploymentType THEN
        SET changes = CONCAT(changes, 'EmploymentType: "', OLD.EmploymentType, '" → "', NEW.EmploymentType, '", ');
    END IF;

    IF NOT OLD.EmploymentStatus <=> NEW.EmploymentStatus THEN
        SET changes = CONCAT(changes, 'EmploymentStatus: "', OLD.EmploymentStatus, '" → "', NEW.EmploymentStatus, '", ');
    END IF;

    IF NOT OLD.ShieldNumber <=> NEW.ShieldNumber THEN
        SET changes = CONCAT(changes, 'ShieldNumber: "', OLD.ShieldNumber, '" → "', NEW.ShieldNumber, '", ');
    END IF;

    IF NOT OLD.SSN <=> NEW.SSN THEN
        SET changes = CONCAT(changes, 'SSN: "', OLD.SSN, '" → "', NEW.SSN, '", ');
    END IF;

    IF NOT OLD.Gender <=> NEW.Gender THEN
        SET changes = CONCAT(changes, 'Gender: "', OLD.Gender, '" → "', NEW.Gender, '", ');
    END IF;

    IF NOT OLD.investigations_InvestigationID <=> NEW.investigations_InvestigationID THEN
        SET changes = CONCAT(changes, 'InvestigationID: "', OLD.investigations_InvestigationID, '" → "', NEW.investigations_InvestigationID, '", ');
    END IF;
```



Investigations

Case Number	Start Date	End Date	Status	Primary Allegation	Investigator	Subjects	Disposition	Disposition Date	Actions
2025-00038	2025-04-28	0000-00-00	Open	Other	Jack Bauer	Lazlo Cravensworth (None)			Edit Delete
2025-00039	2025-04-27	0000-00-00	Open	False Filings	Chance Pants	None Assigned			Edit Delete
2025-00040	2025-04-10	2025-05-02	Closed	Other	Jack Bauer	Lazlo Cravensworth (None)	Substantiated	2025-05-03	Edit Delete
2025-00041	2025-04-29		Open	Fraud	Olivia Benson	Andy Sipowicz (None)			Edit Delete
2025-00042	2025-05-01	0000-00-00	Open	False Filings	Chance Pants	John Smith (None)			Edit Delete
2025-00043	2025-05-02	2025-05-02	Closed	Other	Jack Bauer	Clarice Starling (None)	Unsubstantiated	2025-05-02	Edit Delete
2025-00044	2025-05-03	0000-00-00	Closed	Contraband	Olivia Benson	None Assigned	Unsubstantiated	2025-05-05	Edit Delete
2025-00045	2025-05-02	0000-00-00	Open	Other	Jack Bauer	Lazlo Cravensworth (None)			Edit Delete
2025-00046	2025-05-05	2025-05-05	Closed	Bribery	Jamie Reagan	Elliot Stabler (Victim) Clarice Starling (None)	Substantiated	2025-05-05	Edit Delete
2025-00047	2025-05-02	0000-00-00	Open	False Filings	Chance Pants	Clarice Starling (None)			Edit Delete
2025-00048	2025-05-07	0000-00-00	Open	Overtime Abuse	Jack Bauer	Jack Skellington (None)			Edit Delete
2025-00049	2025-05-08	0000-00-00	Open	Use of Force	Olivia Benson	None Assigned			Edit Delete
2025-00058	2025-05-05		Open	Other	Jamie Reagan	None Assigned			Edit Delete

Normalization

BCNF (Boyce-Codd Normal Form)

- Data depends only on primary key
- Avoid storing the same info in multiple places.
- Every rule that connects columns in a table is based on a unique identifier

Normalization

Departments are stored in one table; employees reference the department by ID.

- Avoids typing the same department name over and over.

Addresses stored separately linked to employees.

- This keeps address info organized.

Different areas have their own table.

- Data grouped logically: firearms, evidence, and investigations are not mixed together.
- Subjects separated from employees; one person can be involved in multiple investigations

Integrity Enforcement

Primary Keys

- Each table has its own unique identifier (i.e. employees: employeeID, investigations: investiationID, evidence: evidenceID, etc

ENUMS

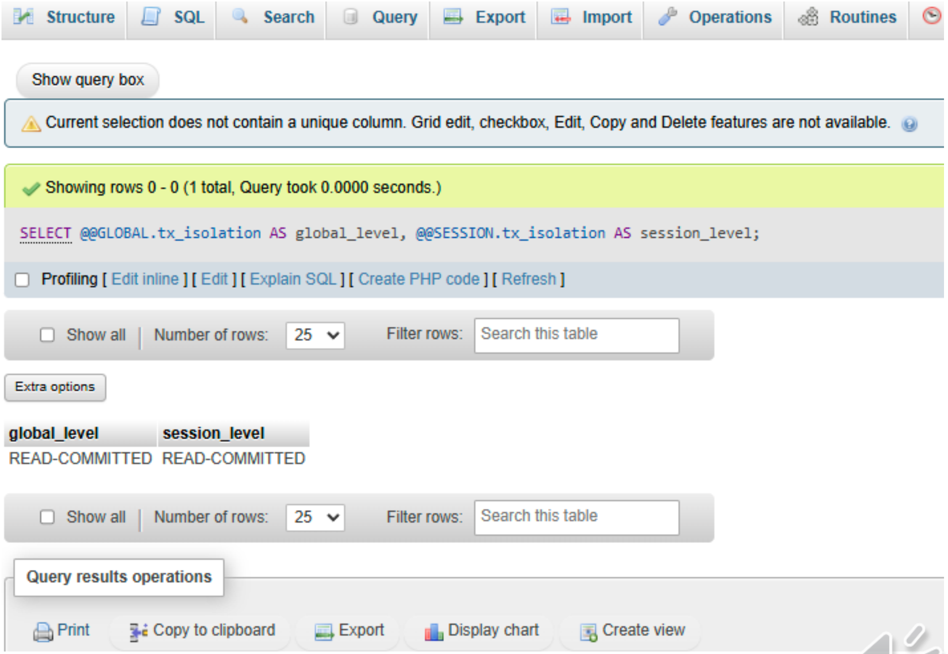
- Only chosen values can be selected.
- Used in columns such as: EmploymentType, CaseStatus, Gender

Not NULL requirements.

- Ensures required data is not left blank.
- Used in columns such as FirstName, LastName, etc

Isolation Level

- Global Isolation Level: READ-COMMITTED
- Session Isolation Level: READ-COMMITTED
- Each transaction can only read committed data.
- Prevents dirty reads (reading uncommitted changes)


Structure
SQL
Search
Query
Export
Import
Operations
Routines
Show query box

Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

✓ Showing rows 0 - 0 (1 total, Query took 0.0000 seconds.)

```
SELECT @@GLOBAL.tx_isolation AS global_level, @@SESSION.tx_isolation AS session_level;
```

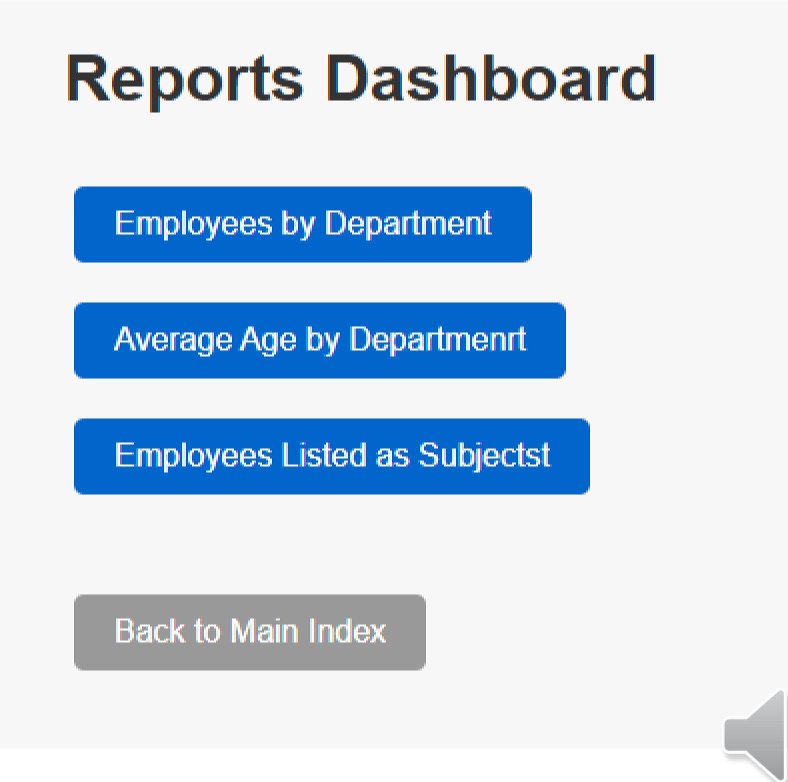
□ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
□ Show all | Number of rows: 25 Filter rows: Search this table
Extra options

global_level	session_level
READ-COMMITTED	READ-COMMITTED

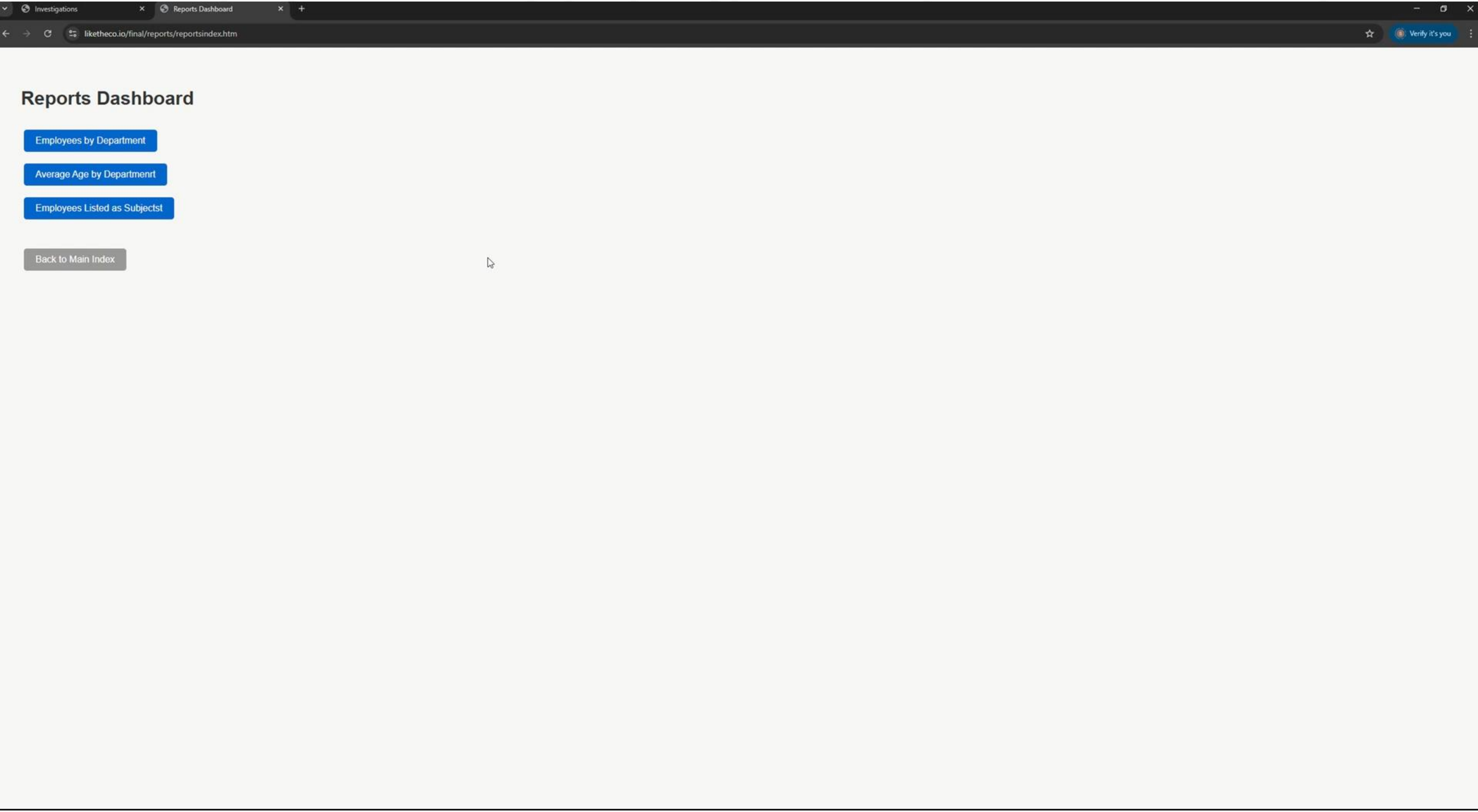
□ Show all | Number of rows: 25 Filter rows: Search this table
Query results operations
Print
Copy to clipboard
Export
Display chart
Create view

Reports

- Three Reports
- All have aggregation



Reports Dashboard



Investigations
Reports Dashboard
liketheco.io/final/reports/reportsindex.htm
Verify it's you

Reports Dashboard

Employees by Department
Average Age by Departmenrt
Employees Listed as Subjectst
Back to Main Index

Thank You!

https://github.com/Liketheco4061/CSGY-6083_Final