Lab Project 2 - MySQL

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Course: Database application

Course ID: 10329809

- MySQL/MariaDB code for the creation of the required tables.

```sql
CREATE TABLE employee (
    employee_ID INT PRIMARY KEY AUTO_INCREMENT,
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    email VARCHAR(100) UNIQUE NOT NULL,
    phone VARCHAR(15) UNIQUE,
    status VARCHAR(20) NOT NULL
);

CREATE TABLE manager (
    manager_ID INT PRIMARY KEY AUTO_INCREMENT,
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    mail VARCHAR(100) UNIQUE NOT NULL,
    number VARCHAR(15) UNIQUE
);


CREATE TABLE role (
    role_ID INT PRIMARY KEY AUTO_INCREMENT,
    role VARCHAR(50) NOT NULL,
    role_name VARCHAR(100) NOT NULL
);


CREATE TABLE shift_schedule (
    shift_ID INT PRIMARY KEY AUTO_INCREMENT,
    employee_ID INT NOT NULL,
    date DATE NOT NULL,
    start_time TIME NOT NULL,
    end_time TIME NOT NULL,
    FOREIGN KEY (employee_ID) REFERENCES employee(employee_ID) ON DELETE CASCADE
);


CREATE TABLE payroll (
    payroll_ID INT PRIMARY KEY AUTO_INCREMENT,
    employee_ID INT NOT NULL,
    payment_date DATE NOT NULL,
    hours_worked DECIMAL(5, 2) NOT NULL,
    total_pay DECIMAL(10, 2) NOT NULL,
    FOREIGN KEY (employee_ID) REFERENCES employee(employee_ID) ON DELETE CASCADE
);
```

```sql
CREATE TABLE attendance (
    attendance_ID INT PRIMARY KEY AUTO_INCREMENT,
    employee_ID INT NOT NULL,
    date DATE NOT NULL,
    clock_intime TIME NOT NULL,
    clock_outtime TIME NOT NULL,
    FOREIGN KEY (employee_ID) REFERENCES employee(employee_ID) ON DELETE CASCADE
);


CREATE TABLE audit (
    record_ID INT PRIMARY KEY AUTO_INCREMENT,
    username VARCHAR(50) NOT NULL,
    action VARCHAR(100) NOT NULL,
    record_changed VARCHAR(100),
    record_deleted BOOLEAN NOT NULL DEFAULT 0
);


INSERT INTO manager (first_name, last_name, mail, number) VALUES ('Adam', 'Clark',
'adam.clark@example.com', '5566778899'), ('Sophia', 'Lee', 'sophia.lee@example.com',
'8899001122'), ('James', 'White', 'james.white@example.com', '9900112233');


INSERT INTO role (role, role_name) VALUES ('Admin', 'System Administrator'), ('Manager', 'Team
Manager'), ('HR', 'Human Resources'), ('Developer', 'Software Developer'), ('Accountant', 'Finance
Manager');


INSERT INTO shift_schedule (employee_ID, date, start_time, end_time) VALUES (1, '2024-10-25',
'09:00:00', '17:00:00'), (2, '2024-10-25', '10:00:00', '18:00:00'), (3, '2024-10-25', '08:00:00',
'16:00:00'), (4, '2024-10-25', '12:00:00', '20:00:00'), (5, '2024-10-25', '09:30:00', '17:30:00');


INSERT INTO payroll (employee_ID, payment_date, hours_worked, total_pay) VALUES (1, '2024-10-
25', 40, 800.00), (2, '2024-10-25', 38, 760.00), (3, '2024-10-25', 42, 840.00), (4, '2024-10-25', 35,
700.00), (5, '2024-10-25', 37, 740.00);


INSERT INTO attendance (employee_ID, date, clock_intime, clock_outtime) VALUES (1, '2024-10-25',
'09:00:00', '17:00:00'), (2, '2024-10-25', '10:00:00', '18:00:00'), (3, '2024-10-25', '08:00:00',
'16:00:00'), (4, '2024-10-25', '12:00:00', '20:00:00'), (5, '2024-10-25', '09:30:00', '17:30:00');
```
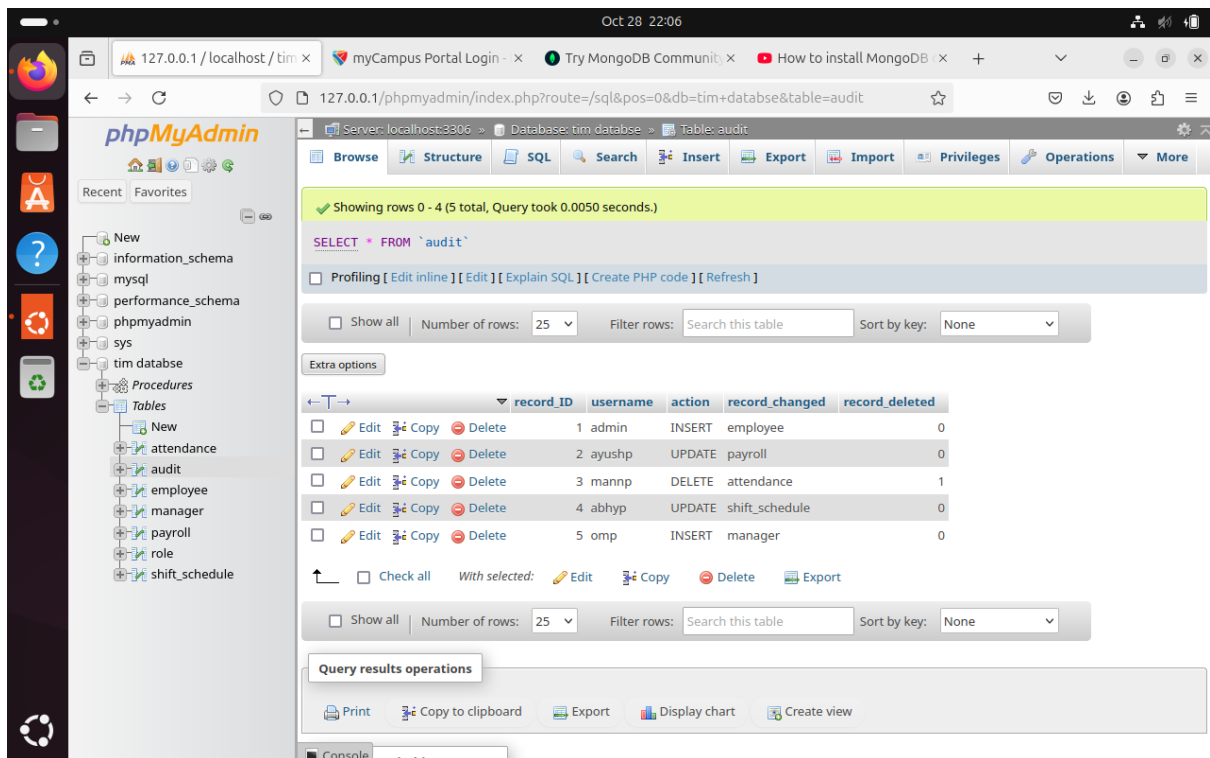
```sql
INSERT INTO audit (username, action, record_changed, record_deleted) VALUES ('admin', 'INSERT',
'employee', 0), ('ayushp', 'UPDATE', 'payroll', 0), ('mannp', 'DELETE', 'attendance', 1), ('abhyp',
'UPDATE', 'shift_schedule', 0), ('omp', 'INSERT', 'manager', 0);


INSERT INTO `employee` (`employee_ID`, `first_name`, `last_name`, `email`, `phone`, `status`)
VALUES

(1, 'ayush', 'patel', a.p@example.com, 1254785463, 'Active'),

(2, 'mann', 'patel', m.n@example.com, 7419632587, 'Active'),

(3, 'om', 'patel', o.m@example.com, 4523657896, 'Inactive'),

(4, 'abhay', 'nom', a.n@example.com, 5217854521, 'Active');
```

- Here is my screenshot of "phpMyAdmin"
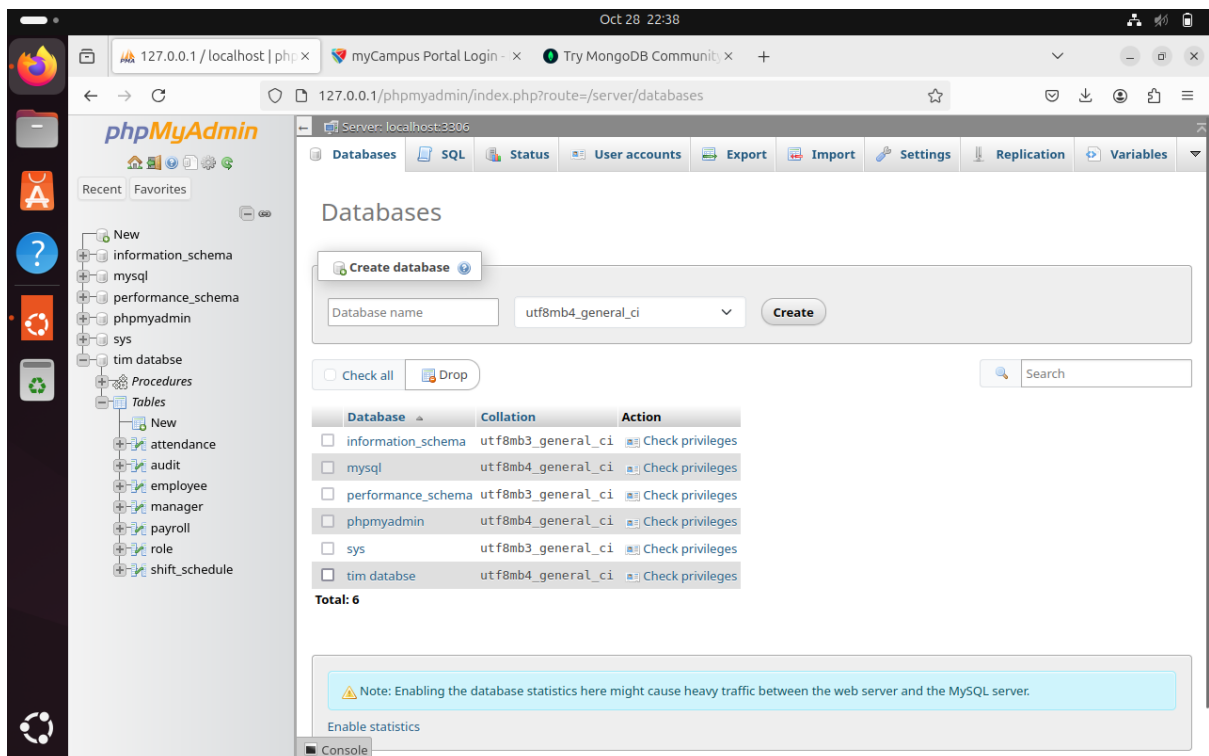
- Screenshots of the tables create

Table 1

Table 2

Table 3

Table 4

Table 5

Table 6

Table 7

- Screenshots of the relationships (keys/foreign keys).

Server: localhost:3306 » Database: tim databse » Table: manager

Table structure | Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	manager_ID	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	first_name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
3	last_name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
4	mail	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
5	number	varchar(15)	utf8mb4_general_ci		Yes	NULL			Change Drop More

Check all — With selected: Browse Change Drop Primary Unique Index Spatial Fulltext Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

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Server: localhost:3306 » Database: tim databse » Table: payroll

Table structure | Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	payroll_ID	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	employee_ID	int(11)			No	None			Change Drop More
3	payment_date	date			No	None			Change Drop More
4	hours_worked	decimal(5,2)			No	None			Change Drop More
5	total_pay	decimal(10,2)			No	None			Change Drop More

Check all — With selected: Browse Change Drop Primary Unique Index Spatial Fulltext Add to central columns Remove from central columns

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Server: localhost:3306 » Database: tim databse » Table: role

Table structure | Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	role_ID	int(11)			No	None		AUTO_INCREMENT	Change Drop More
2	role	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
3	role_name	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More

Check all — With selected: Browse Change Drop Primary Unique Index Spatial Fulltext Add to central columns Remove from central columns

Print Propose table structure Track table Move columns Normalize

Add 1 column(s) after role_name Go

Indexes

Action	Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
Edit Rename Drop	PRIMARY	BTREE	Yes	No	role_ID	20	A	No	

- Relations

Server: localhost:3306 » Database: tim databse » Table: payroll

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | More

Table structure | Relation view

Foreign key constraints

Actions	Constraint properties		Column	Foreign key constraint (INNODB)		
				Database	Table	Column
	payroll_1					
Drop	ON DELETE	CASCADE	employee_ID	tim databse	employee	employee_ID
	ON UPDATE	RESTRICT	+ Add column			
	Constraint name					
	ON DELETE	RESTRICT		tim databse		
	ON UPDATE	RESTRICT	+ Add column			

+ Add constraint

Internal relationships

Server: localhost:3306 » Database: tim databse » Table: shift_schedule

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | More

Table structure | Relation view

Foreign key constraints

Actions	Constraint properties		Column	Foreign key constraint (INNODB)		
				Database	Table	Column
	shift_schedule_1					
Drop	ON DELETE	CASCADE	employee_ID	tim databse	employee	employee_ID
	ON UPDATE	RESTRICT	+ Add column			
	Constraint name					
	ON DELETE	RESTRICT		tim databse		
	ON UPDATE	RESTRICT	+ Add column			

+ Add constraint

- Exports of the user permissions for each table.
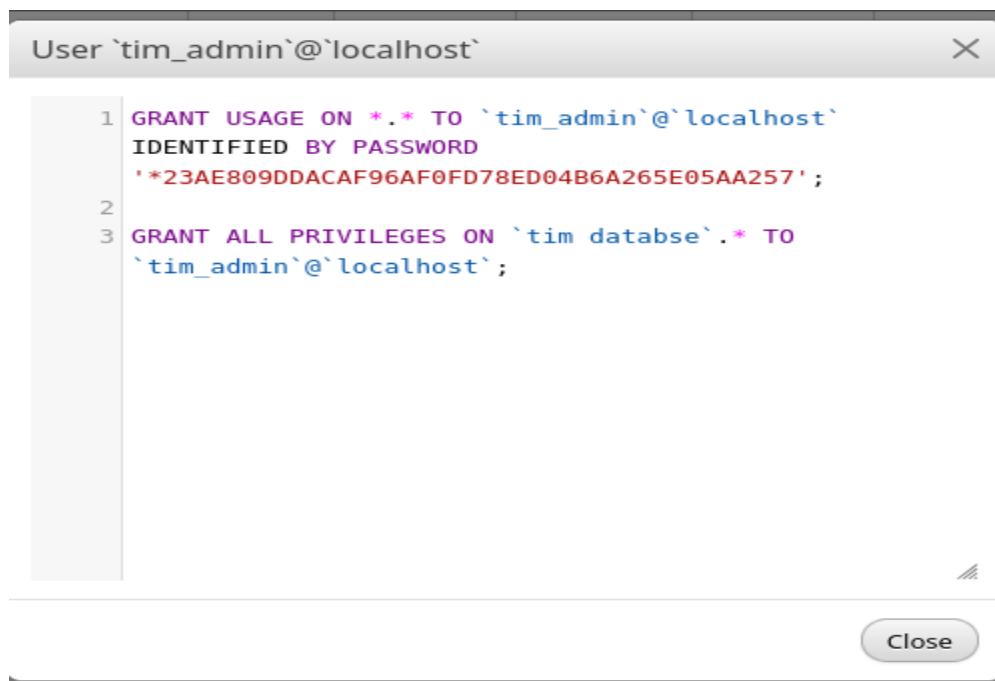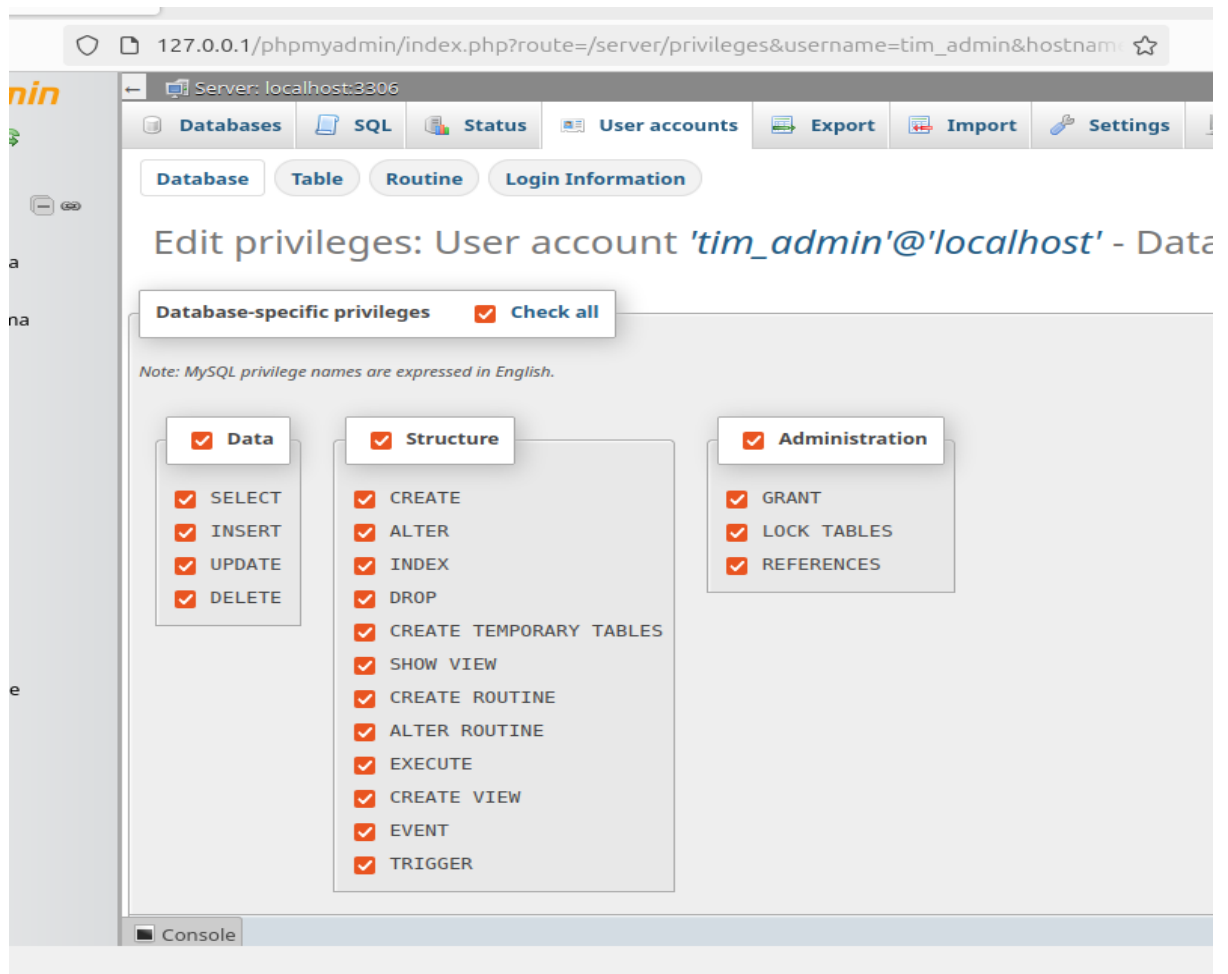
- Screenshots of the encryption applied to encrypted fields.
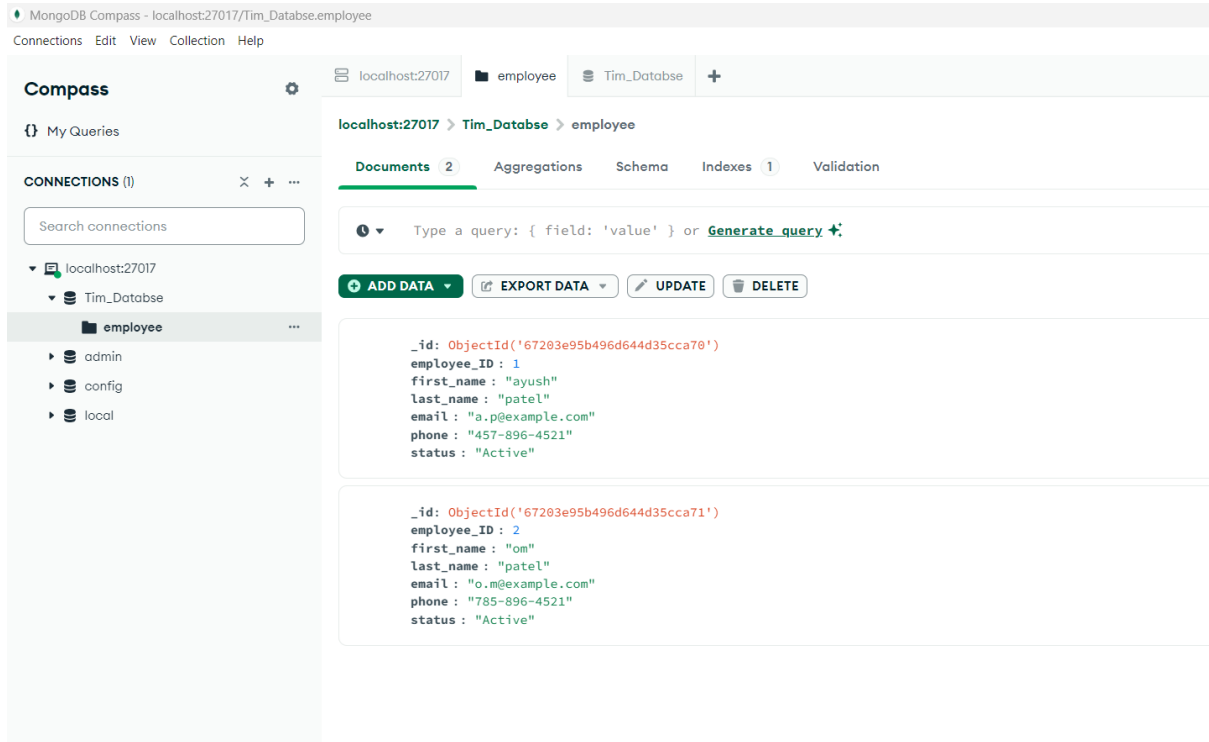
  In this picture "email" and "phone" is encrypted.

• MongoDB

- Screenshots of MongoDB server running and your ability to connect to it using Compass.
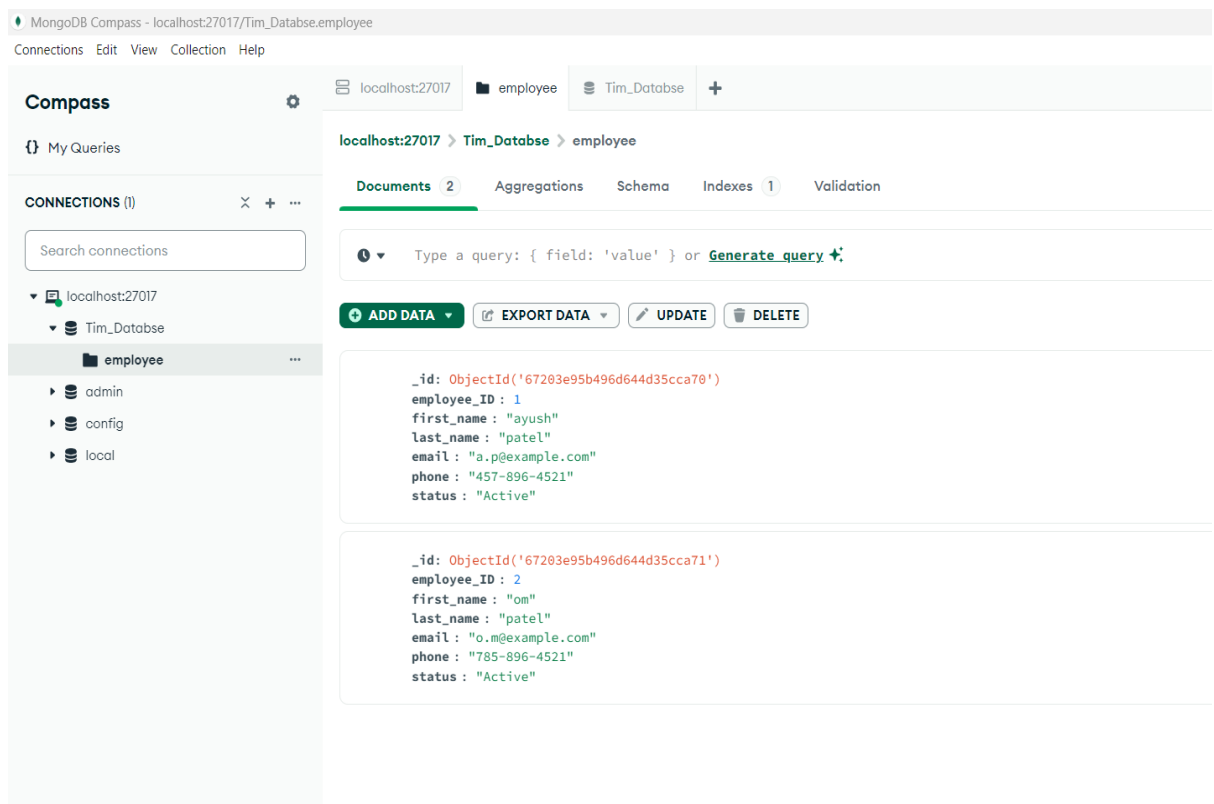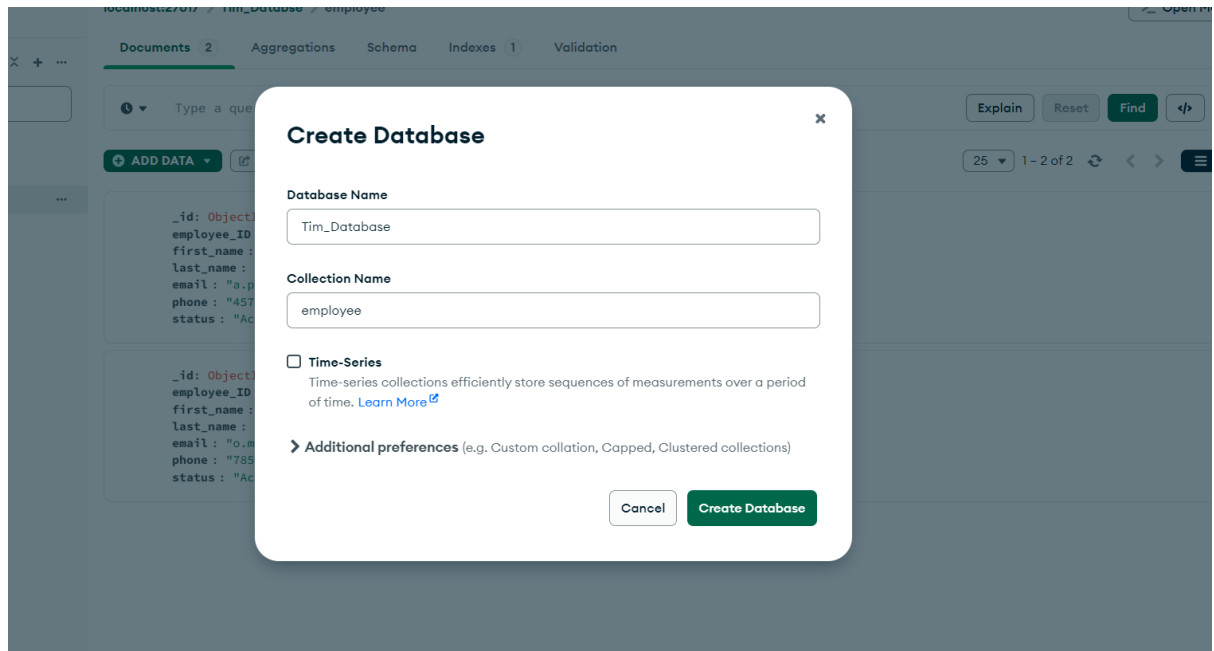
- Screenshots of your table structure in MongoDB

- code for the creation of the required tables.

```
[
  {
    "employee_ID": 1,
    "first_name": "ayush",
    "last_name": "patel",
    "email": "a.p@example.com",
    "phone": "457-896-4521",
    "status": "Active"
  },
  {
    "employee_ID": 2,
    "first_name": "om",
    "last_name": "patel",
    "email": "o.m@example.com",
    "phone": "785-896-4521",
    "status": "Active"
  }
]
```