Activity File: Database Management

In this activity, you will play the role of a junior web engineer for GoodCorp, and will manage its web application.

- GoodCorp uses Docker Compose and a set of containers to deploy and maintain its employee database website and application.

- You are tasked with locally deploying GoodCorp's employee directory website with Docker Compose and will need to manage the data inside the employee directory database.


Resources

📚 Use the following W3Schools references if you need help during this activity:

- [SQL SELECT statement](#)
- [SQL WHERE clause](#)
- [SQL INSERT statement](#)
- [SQL DELETE statement](#)

Instructions

1. First, deploy the container set using Docker Compose:

   - Navigate to your `/home/sysadmin/Cybersecurity-Lesson-Plans/12-Web_Dev/deploying_databases` directory.

   - Set up the database with `./reset_databases.sh`.

     - **Note:** If you enter the wrong query or mess up the database, you can rerun this script to reset it.
   - Deploy the container stack with `docker-compose up`.

○ Verify the site is running by navigating to `localhost:10005` in the browser.
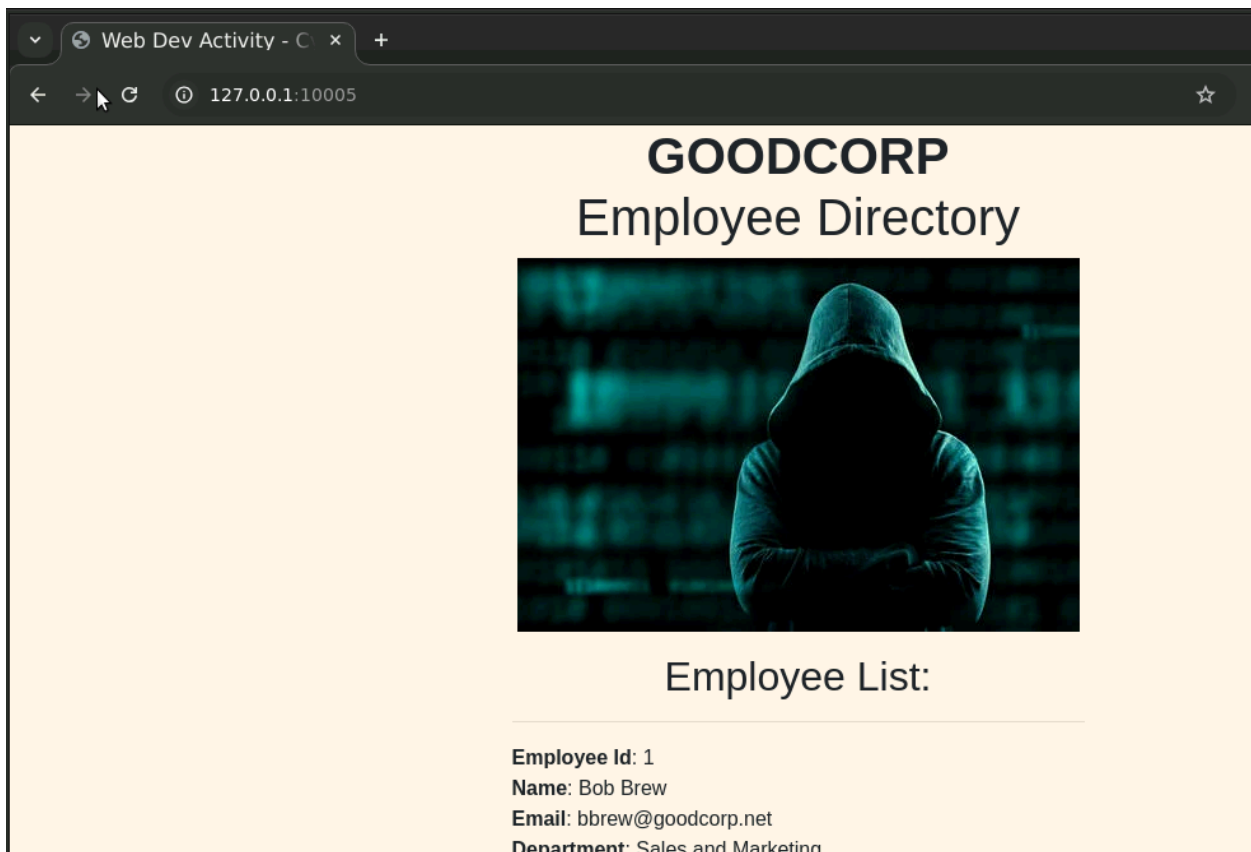
2. Find the MySQL credentials in the `/home/sysadmin/Cybersecurity-Lesson-Plans/12-Web_Dev/deploying_databases` compose file.

3. Enter an interactive bash session in the database's container. The container name can also be found in the compose file.

4. Within the interactive bash session, use the credentials found earlier to enter a MySQL session using the `goodcorpdb` MySQL database.

```
sysadmin@ip-10-0-1-222:~$ docker exec -it activitydb bash
root@0f4758dd2820:/# mysql -u admin -p123456 -D goodcorpdb
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 4
Server version: 10.5.1-MariaDB-1:10.5.1+maria~bionic mariadb.org binary distribu
tion

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [goodcorpdb]>
```

5. Create a basic SELECT query to find all the employee table entries in the goodcorpdb database.

```
MariaDB [goodcorpdb]> select * from employees;
+----+-----------+-----------+-------------------------+--------------------------+---------------------+
| id | firstname | lastname  | email                   | department               | date_added          |
+----+-----------+-----------+-------------------------+--------------------------+---------------------+
|  1 | Bob       | Brew      | bbrew@goodcorp.net      | Sales and Marketing      | 2025-03-20 23:13:44 |
|  2 | Andrew    | Americano | aamericano@goodcorp.net | Research and Development  | 2025-03-20 23:13:44 |
|  3 | Caroline  | Cortado   | ccortado@goodcorp.net   | Human Resources          | 2025-03-20 23:13:44 |
|  4 | Deborah   | Doppio    | ddoppio@goodcorp.net    | Operations               | 2025-03-20 23:13:44 |
|  5 | Emma      | Espresso  | eespresso@goodcorp.net  | Research and Development  | 2025-03-20 23:13:44 |
|  6 | Luke      | Skywalker | jedi@sith.com           | Logistics                | 2025-03-20 23:21:41 |
+----+-----------+-----------+-------------------------+--------------------------+---------------------+
```

6. Using the given information, create a query to add the following new user to the employee directory:

   ○ **First name**: Fran
   ○ **Last name**: Frappucino
   ○ **Email address**: ffrappucino@goodcorp.net
   ○ **Department**: Finance

```
MariaDB [goodcorpdb]> INSERT INTO employees (firstname, lastname, email, department) VALUES ('Fran', 'Frappucino', 'ffrappucino@goodcorp.net.com', 'Finance'
);
Query OK, 1 row affected (0.001 sec)
```

7. Create a modified SELECT query to find all employees in the Research and Development department

```
MariaDB [goodcorpdb]> select * from employees where department='Research and Development';
+----+-----------+-----------+------------------------+--------------------------+---------------------+
| id | firstname | lastname  | email                  | department               | date_added          |
+----+-----------+-----------+------------------------+--------------------------+---------------------+
|  2 | Andrew    | Americano | aamericano@goodcorp.net | Research and Development | 2025-03-20 23:13:44 |
|  5 | Emma      | Espresso  | eespresso@goodcorp.net  | Research and Development | 2025-03-20 23:13:44 |
+----+-----------+-----------+------------------------+--------------------------+---------------------+
2 rows in set (0.000 sec)
```

8. Create a DELETE query to remove the entry for Bob using their ID number.

```
MariaDB [goodcorpdb]> delete from employees where id=1;
Query OK, 1 row affected (0.003 sec)
```