# Makeen Bootcamps Management System

Data Management Project

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## Group Members

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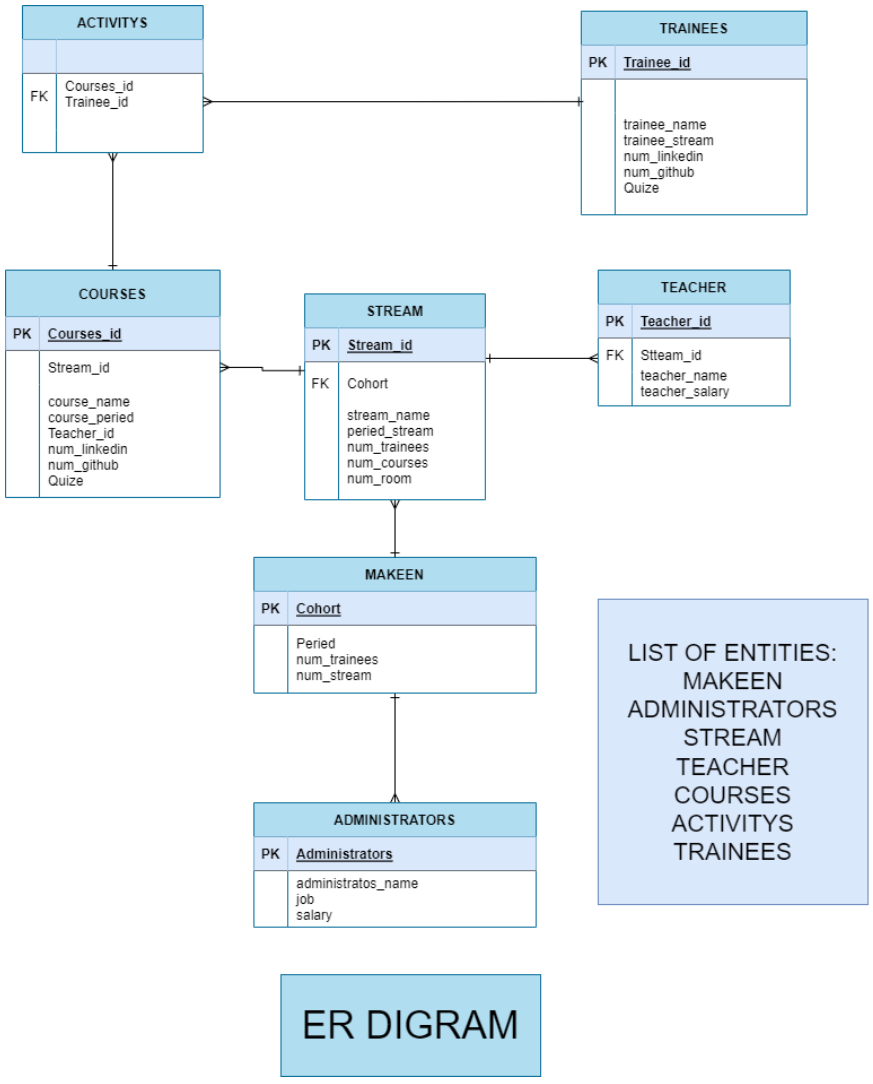
# PROJECT DESIGN

## I. Project Requirements

Makeen Bootcamp contains many administrators and several streams such as the Data Science and Artificial Intelligence stream and the Web Application Development stream . In each stream there are many courses, teachers. Each course will have activities taken by a trainee.

## II. Entity Relation Diagram



**Makeen**

| Field | Data Type | Constraints |
|---|---|---|
| Ma_Cohort | NUM(1) | PK |
| Ma_Period | VARCHAR(40) | NOT NULL |
| Ma_Trainers# | NUM(30) | NOT NULL |
| Ma_Streams# | NUM | BY DEFULT 2 |

**Administration**

| Field | Data Type | Constraints |
|---|---|---|
| Ad_id# | NUM(30) | PK |
| Ad_Name | VARCHAR(30) | NOT NULL |
| Ad_job | VARCHAR(30) | NUT NULL |
| Ad_Salary | NUM(30) | |

**Stream**

| Field | Data Type | Constraints |
|---|---|---|
| ST_id# | NUM | PK |
| St_Name | VARCHART(30) | NOT NULL |
| St_Period | VARCHAR(30) | NOT NULL |

| | | |
|---|---|---|
| St_Traines# | NUM(30) | |
| St_cources# | NUM(30) | |
| St_room# | NUM | NOT NULL |
| St_cohort | NUM | FK |

**Teacher**

| Field | Data Type | Constraints |
|---|---|---|
| Te_id# | NUM(6) | PK |
| Te_Name | VARCHAR(50) | NOT NULL |
| Te_Salary | NUM | NOT NULL |
| Te_Stream | NUM | FK |

**courses**

| Field | Data Type | Constraints |
|---|---|---|
| Co_id | VARCHAR(30) | PK |
| Co_Period | VARCHAR(30) | NOT NULL |
| Co_Teacher | NUM(6) | NOT NULL,FK |

**Activities**

| Field | Data Type | Constraints |
|---|---|---|
| Co_id | NUM(30) | FK |
| Tr_id | NUM(30) | FK |

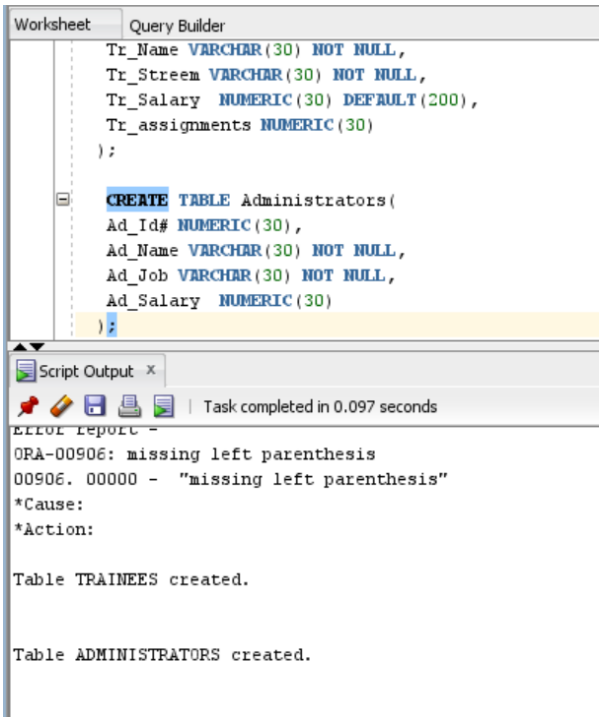
**Trainers**

| Field | Data Type | Constraints |
|---|---|---|
| Tr_id# | VARCHAR(30) | NOT NULL |
| Tr_Name | VARCHAR(30) | NOT NULL |
| Tr_Salary | NUM(30) | BY DEFULT(200) |
| Tr_Stream | VARCHAR(30) | NOT NULL,FK |

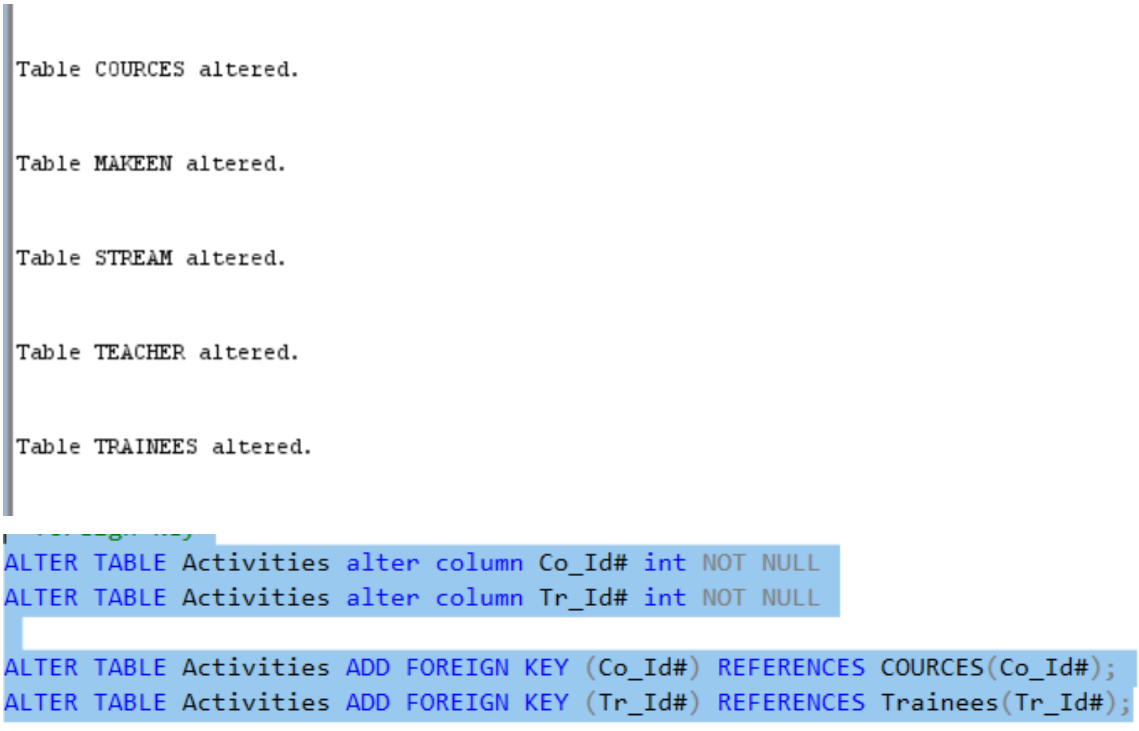
# PROJECT DESIGN

## I. Construct the database using Oracle database management system

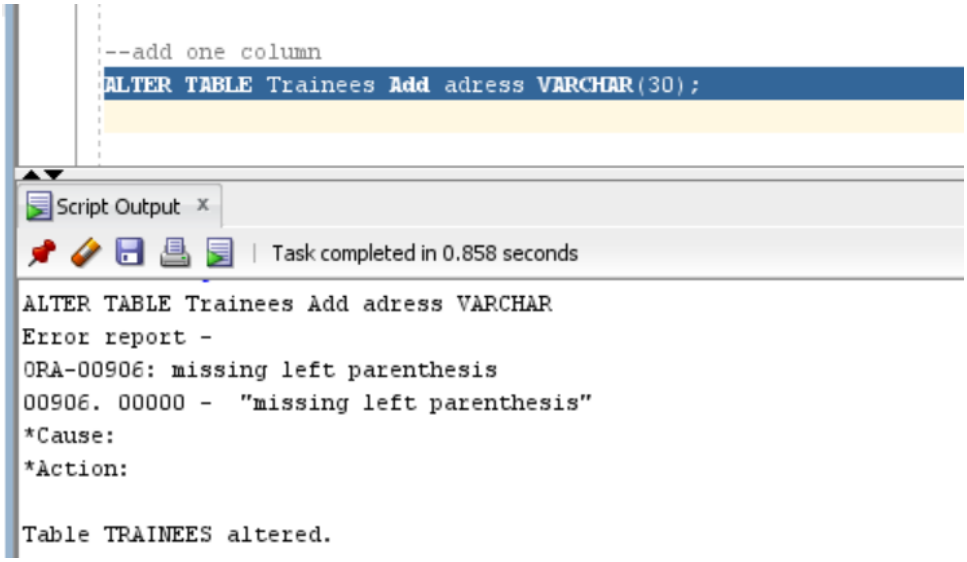
1. Create all tables without specifying their primary keys and foreign keys:



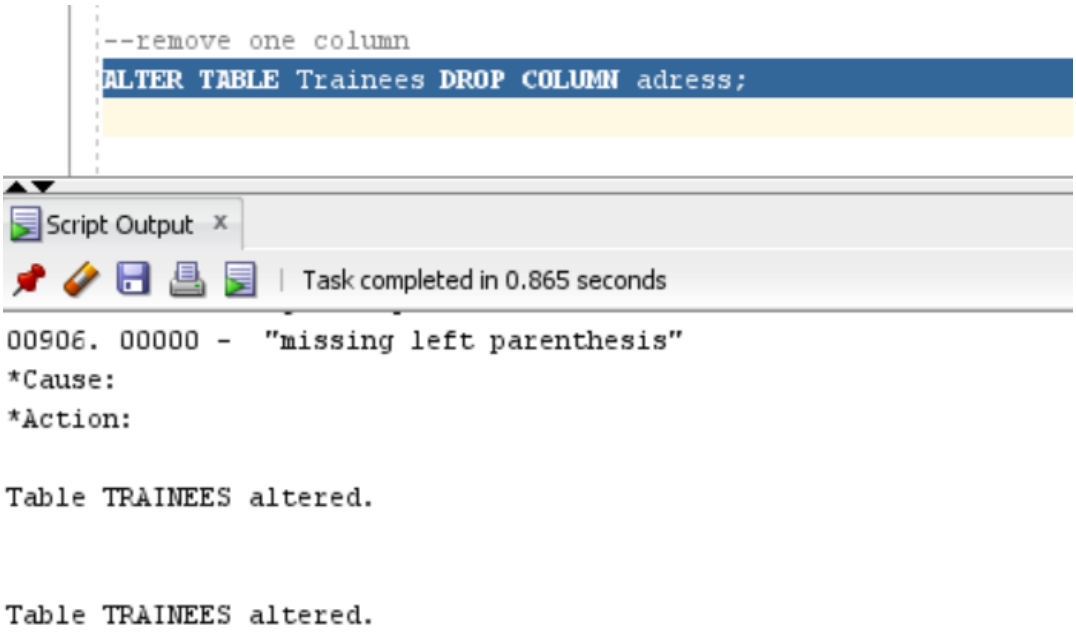

2. Use alter statements to add the primary keys and the foreign keys for each table in the database.



3. Use an alter statement to add a column in at least one table.




4. Use an alter statement to remove a column from at least one table.




5. Use all types of other constraints including unique, not null, and check. 5).

```
--Use all types of other constraints including unique, not null, and check. 5)
ALTER TABLE Makeen MODIFY Ma_Streams# NUMERIC(30) NOT NULL;
ALTER TABLE STREAM ADD UNIQUE(ST_ROOM#);
ALTER TABLE Administrators ADD CHECK(Ad_Salary<1000);
```

Script Output | Task completed in 0.585 seconds

```
Table ADMINISTRATORS altered.

Table STREAM altered.

Table MAKEEN altered.
```

6. Using the 'insert' statements, add at least 3 rows to each table.

```
--insert into Makeen Table
INSERT INTO Makeen VALUES(1, '7-5-2023 to 26-10-2023', 35,2);
INSERT INTO Makeen VALUES(2, '23-7-2023 to 23-12-2023', 35, 2);
INSERT INTO Makeen VALUES(3, '1-1-2024 to 1-6-2024', 35, 2);
```

Script Output | Task completed in 0.765 seconds

```
1 row inserted.

1 row inserted.

1 row inserted.
```

```
--insert into stream
INSERT INTO Stream VALUES(1, 'Data Science and Artificial Intellegence','7-5-2023 to 26-10-2023' , 1,20,11 );
INSERT INTO Stream VALUES(2, 'Full stack development','7-5-2023 to 26-10-2023' ,2,15,11 );
INSERT INTO Stream VALUES(3, 'Mobile application development','23-7-2023 to 23-12-2023' , 3,20,12 );
INSERT INTO Stream VALUES(4, 'Software development','23-7-2023 to 23-12-2023' , 4,15,12 );
INSERT INTO Stream VALUES(5, 'cyper security','1-1-2024 to 1-6-2024' , 5,20,10 );
```

Script Output | Task completed in 0.581 seconds

```
1 row inserted.

1 row inserted.

1 row inserted.

1 row inserted.
```

```
INSERT INTO administrators VALUES(1,'Maryam','HR',990);
INSERT INTO administrators VALUES(2,'Abdulrahman','HR',990);
INSERT INTO administrators VALUES(3,'MUNA','Contract admin',995);
```

Script Output

Task completed in 0.042 seconds

```
Error starting at line : 7 in command -
INSERT INTO Stream VALUES(1, 'Data Science and Artificial Intellegence','7-5-2023 to 26-10-2023' , 1,20,11,1 )
Error report -
ORA-12899: value too large for column "C##ABC"."STREAM"."ST_NAME" (actual: 40, maximum: 30)


1 row inserted.
```

```
INSERT INTO teacher VALUES(1001,'Muzna',990,1);
INSERT INTO teacher VALUES(1002,'YOUSEF',1000,2);
INSERT INTO teacher VALUES(1003,'Nasser',1000,3);
```

Script Output

Task completed in 0.515 seconds

```
1 row inserted.


1 row inserted.


1 row inserted.
```

```
INSERT INTO ASSIGNMENTS VALUES(1,2,10,3);
INSERT INTO ASSIGNMENTS VALUES(2,2,20,4);
INSERT INTO ASSIGNMENTS VALUES(3,2,30,5);
```

Script Output

Task completed in 0.976 seconds

```
1 row inserted.


1 row inserted.


1 row inserted.
```

```
INSERT INTO COURCES VALUES('advanced python','6 days',1001,1);
INSERT INTO COURCES VALUES('Front end','8 days',1002,2);
INSERT INTO COURCES VALUES('Intro to dart','5 days',1003,3);
```

Script Output | Task completed in 0.688 seconds

```
Error starting at line : 29 in command -
INSERT INTO COURCES VALUES('Front end','8 days',1002,2)
Error report -
ORA-00001: unique constraint (C##ABC.SYS_C009838) violated


1 row inserted.
```

```
INSERT INTO trainees VALUES(101,'MAYA',1,250,1);
INSERT INTO trainees VALUES(102,'ASMA',2,200,2);
INSERT INTO trainees VALUES(103,'MARWAH',3,200,3);
INSERT INTO trainees VALUES(104,'ALANOUD',1,200,1);
```

Script Output | Task completed in 0.06 seconds

```
1 row inserted.


1 row inserted.


1 row inserted.
```

# DB QUERIES

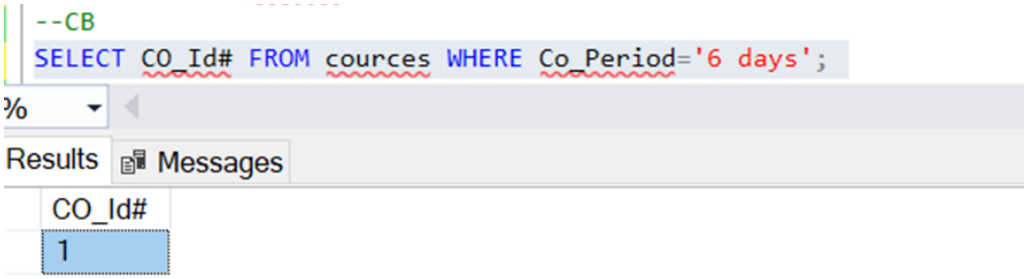
1. Retrieve full information stored in one table.

```
SELECT * FROM MAKEEN;
```

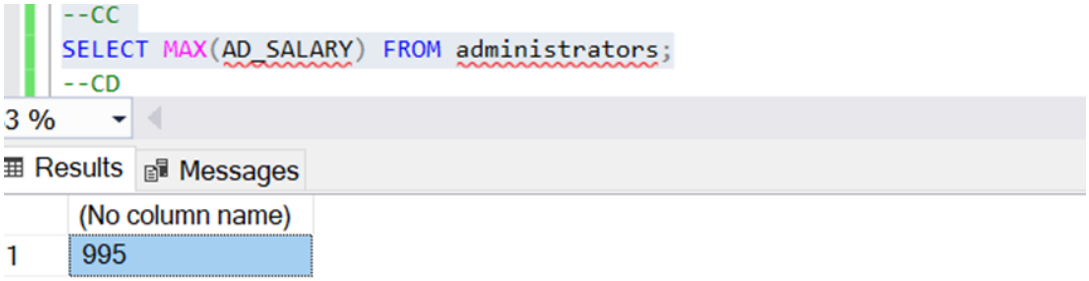
Query Result | SQL | All Rows Fetched: 3 in 0.766 seconds

| | MA_COHORT | MA_PERIED | MA_TRAINERS# | MA_STREAMS# |
|---|---|---|---|---|
| 1 | 1 | 7-5-2023 to 26-10-2023 | 35 | 2 |
| 2 | 2 | 23-7-2023 to 23-12-2023 | 35 | 2 |
| 3 | 3 | 1-1-2024 to 1-6-2024 | 35 | 2 |

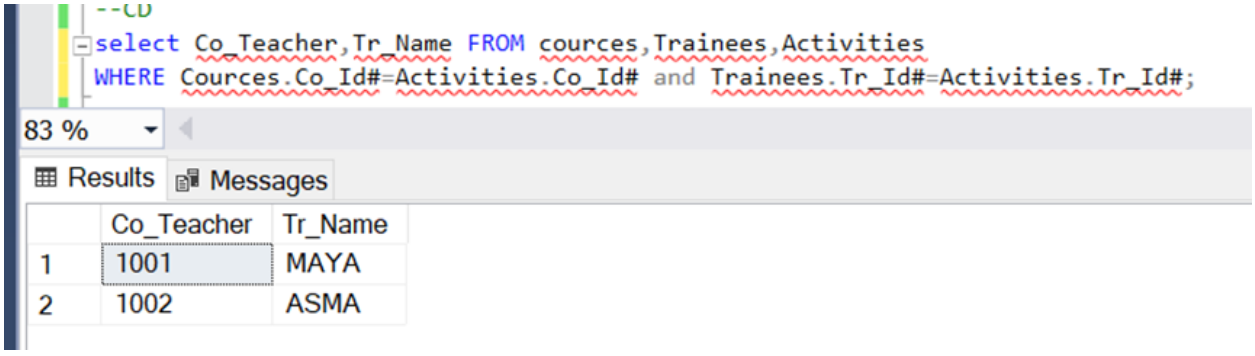
2. Retrieve from any table the records which satisfy certain criteria.




3. Using any table which contains a numeric field, retrieve the record which has the maximum value for that field.




4. List related information from two tables. The list must contain at least one field from each table.




5. Produce a statistical list (Query) of two columns only, which aggregates the records within a table based on the values stored in one textual-field

   (the 1st column) while the 2nd column lists aggregated information using

   one of these functions: 'COUNT', 'SUM', or 'AVERAGE'.

```
SELECT SUM(MA_TRAINERS#),SUM(MA_STREAMS#) FROM makeen;
```

Query Result

SQL | All Rows Fetched: 1 in 0.323 seconds

| | SUM(MA_TRAINERS#) | SUM(MA_STREAMS#) |
|---|---|---|
| 1 | 105 | 6 |

6. ) Produce a calculated list (Query) based on a single table. The list must have at least two columns, one of them is textual column while the 2nd column is calculated (e.g., summed-up) from other fields.

```
SELECT TR_NAME,COUNT(TR_NAME) FROM trainees GROUP BY TR_NAME;
```

Query Result

SQL | All Rows Fetched: 4 in 0.077 seconds

| | TR_NAME | COUNT(TR_NAME) |
|---|---|---|
| 1 | MARWAH | 1 |
| 2 | MAYA | 1 |
| 3 | ASMA | 1 |
| 4 | ALANOUD | 1 |