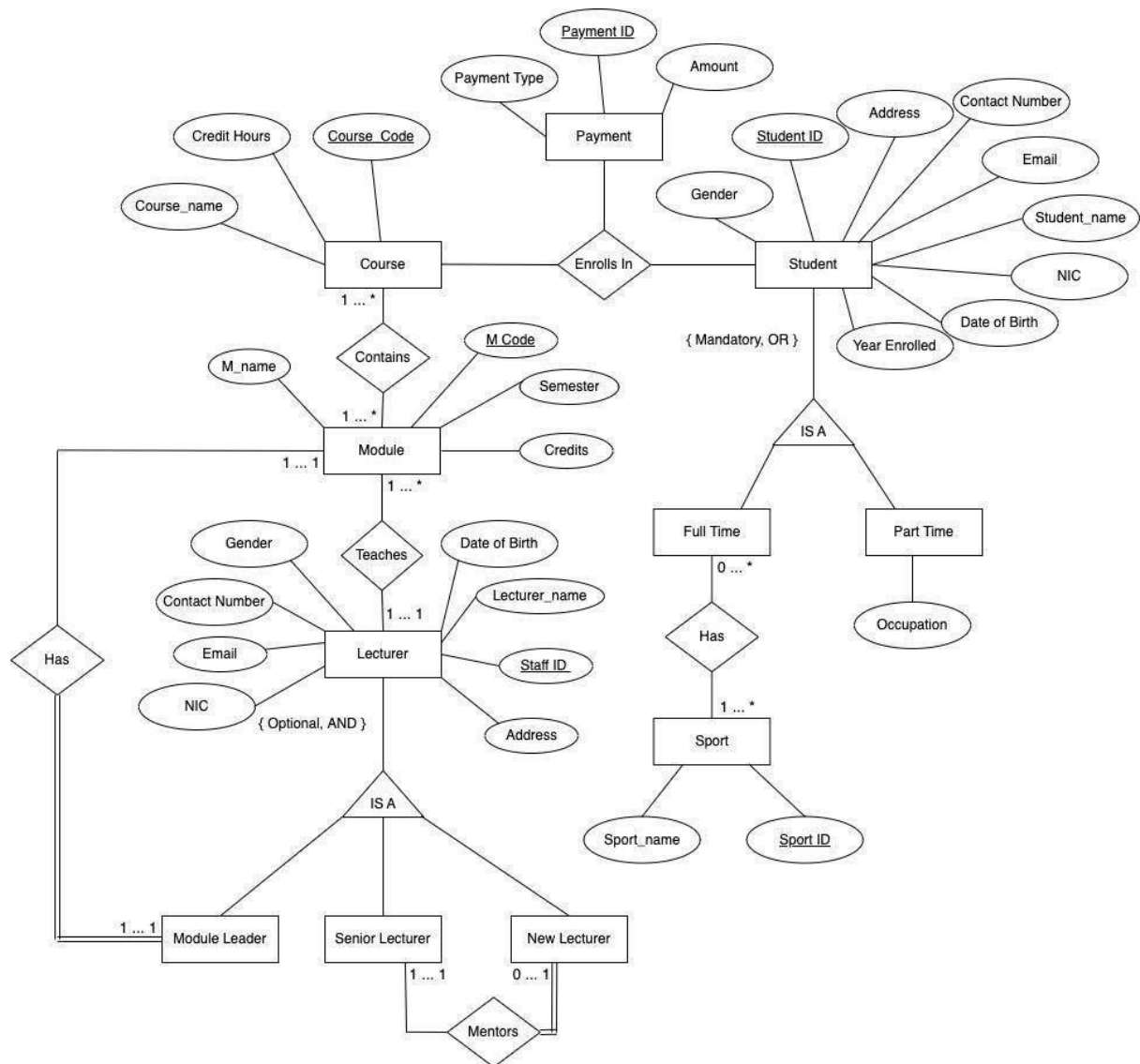# BSc. Artificial Intelligence & Data Science

Database System

CAMMS College

(Q1)

(01)   Relationship between Course, Student, and Payment
This is a Ternary Relationship.
Students can enroll one Course at a time and when they enroll, they must make a Payment.

(02)   Relationship between Course and Module
One course may contain many modules or at least one module. One module may be available for one or many courses.

(03)   Relationship between Module and Lecturer One
module can teach by one or many lecturers.
One lecturer can teach one module.

(04)   Relationship between Module and Module Leader One
module must have a module leader from the lecturer team.

(05)   Relationship between Senior Lecturer and New Lecturer

One senior lecturer can mentor only one new lecturer, or one senior lecturer may not mentor any new lecturer.

One new lecturer must have one senior lecturer as a mentor.

(06)   Relationship between Full Time and Sport

Students who enroll full-time can have one or many sports activities.
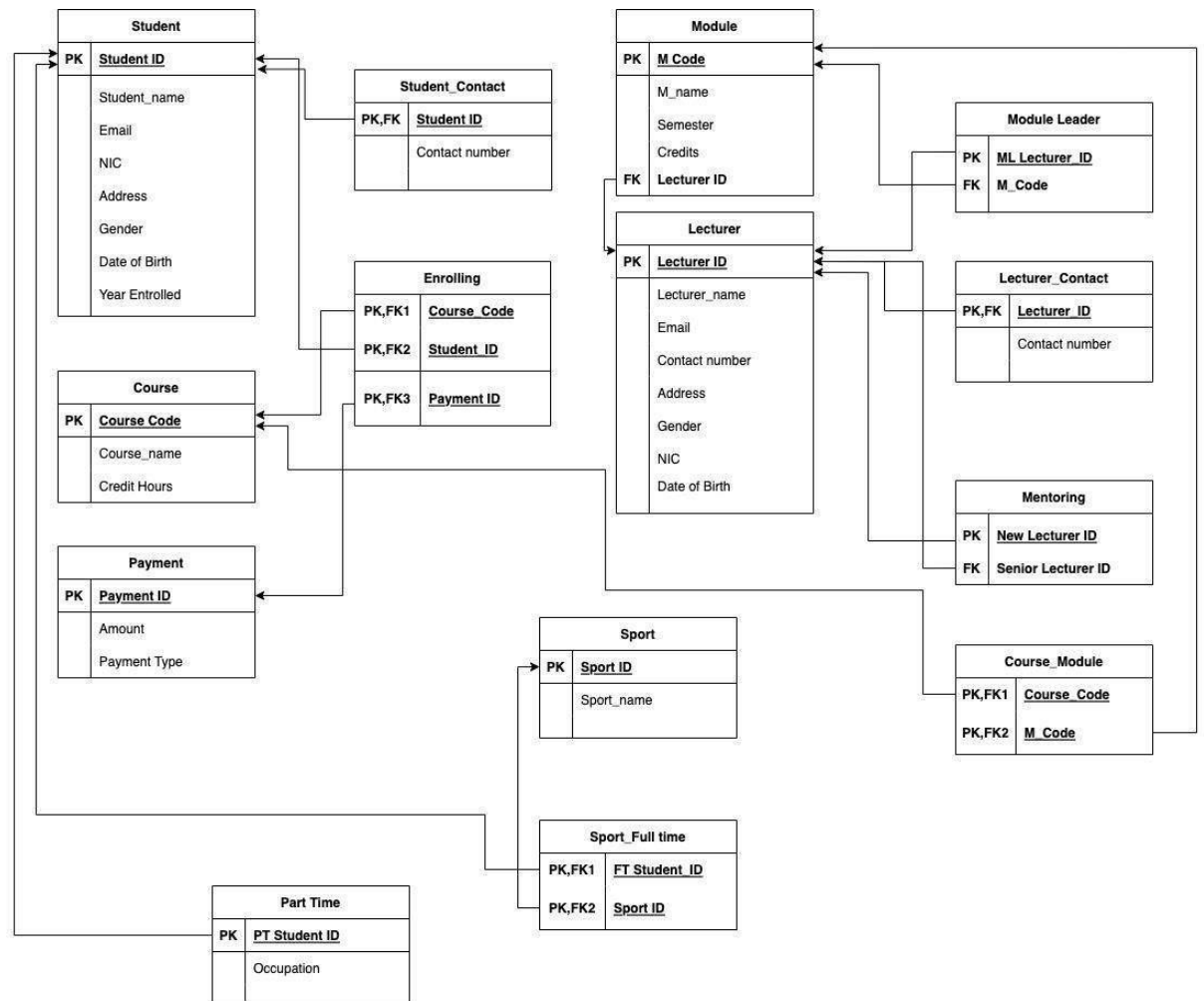
(07)   Generalization Concepts

{Mandatory, OR}

All the students who enroll in courses must choose full-time or part-time depending on their choice. There are no other options except these two.

{Optional, AND}

The lecturers may have subclasses except for module leaders, senior lecturers, and new lecturers such as visiting lecturers. Any of these lecturers can be module leaders.

(Q2)

Student

PK	Student ID
	Student_name
	Email
	NIC
	Address
	Gender
	Date of Birth
	Year Entrolled

Student_Contact

PK,FK	Student ID
	Contact number

Module

PK	M Code
	M_name
	Semester
	Credits
FK	Lecturer ID

Module Leader

PK	ML Lecturer_ID
FK	M_Code

Lecturer

PK	Lecturer ID
	Lecturer_name
	Email
	Contact number
	Address
	Gender
	NIC
	Date of Birth

Lecturer_Contact

PK,FK	Lecturer_ID
	Contact number

Enrolling

PK,FK1	Course_Code
PK,FK2	Student_ID
PK,FK3	Payment ID

Course

PK	Course Code
	Course_name
	Credit Hours

Mentoring

PK	New Lecturer ID
FK	Senior Lecturer ID

Payment

PK	Payment ID
	Amount
	Payment Type

Sport

PK	Sport ID
	Sport_name

Course_Module

PK,FK1	Course_Code
PK,FK2	M_Code

Sport_Full time

PK,FK1	FT Student_ID
PK,FK2	Sport ID

Part Time

PK	PT Student ID
	Occupation

Student, Course, and Payment are in a ternary relationship therefore another relation was created named enrolling.

Contact number is a multivalued attribute therefore Student_Contact and lecturer_Contact relations were created.

The module and Module leader is in a one-to-one relationship therefore M_Code is placed as the foreign key in module_leader.

Course and Module in many to many relationship, therefore, another relation created named Course_Module. The primary key of the course and module are placed as foreign keys.

Module and Lecturer in a one-to-many relationship, therefore, the primary key of the lecturer is placed as a foreign key to the module.

(Q3)
(01) Student (<u>Student_ID</u>, Student_name, Email, Address, Gender, Date of Birth, Full/Part Time, Year Enrolled)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies.

(02) Student_Contact (<u>Student_ID</u>, Contact Number)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies.

(03) Course (<u>Course_ID</u>, Course_name, Credit_Hours)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies.

(04) Payment (<u>Payment_ID</u>, Amount, Payment_Type, Date)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(05) Enrolling (<u>Course_ID</u>, <u>Student_ID</u>, <u>Payment_ID</u>)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(06) Module (<u>M_Code</u>, M_name, Semester, Credits, Lecturer_ID)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(07) Lecturer (<u>Lecturer_ID</u>, Lecturer_name, Email, Address, Gender, Date of Birth)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(08) Lecture_contact (<u>Lecturer_ID</u>, Contact Number)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(09) Module_Leader (<u>ML_Lecturer_ID</u>, M_Code)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(10) Sport (<u>Sport_ID</u>, Sport_name)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(11) Part_Time (<u>PT_Student_ID</u>, Occupation)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.
This relation is in 2NF because this relation has no partial dependencies.
This relation is in 3NF because this relation has no transitive dependencies

(12) Sport_Full_Time (<u>FT_Student_ID, Sport_ID</u>)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.

This relation is in 2NF because this relation has no partial dependencies.

This relation is in 3NF because this relation has no transitive dependencies

(13) Mentoring (New_Lecturer_ID, Senior_Lecturer_ID)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.

This relation is in 2NF because this relation has no partial dependencies.

This relation is in 3NF because this relation has no transitive dependencies

(14) Course_Module (<u>Course_Code, M_Code</u>)

This relation is in 1NF because this relation has no repeating attributes, and all attributes are atomic.

This relation is in 2NF because this relation has no partial dependencies.

This relation is in 3NF because this relation has no transitive dependencies

(Q4)

```
1 CREATE DATABASE caams_college;
```

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

CREATE DATABASE caams_college;

[Edit inline] [Edit] [Create PHP code]

⚠ Error: #1046 No database selected

```
1  CREATE TABLE student
2  (
3      Student_ID char(4),
4      Student_name varchar(150),
5      Email varchar(100),
6      Address varchar(100),
7      Gender char(1),
8      Date_of_Birth date,
9      Full_or_Part_Time char(4),
10     Year_Enrolled int,
11     PRIMARY KEY (Student_ID)
12 );
```

```sql
1  CREATE TABLE Student_Contact
2  (
3      Student_ID char(4) not null,
4      Contact_Number char(11) NOT NULL,
5      FOREIGN KEY (Student_ID) REFERENCES Student(Student_ID)
6  );
7
```

```sql
1  CREATE TABLE course
2  (
3      Course_ID char(4) PRIMARY KEY,
4      Course_name varchar(100) NOT NULL,
5      Credit_Hours int NOT NULL
6  );
7
```

```sql
1  CREATE TABLE payment
2  (
3      Payment_ID char(4) PRIMARY KEY,
4      Amount int not null,
5      Payment_Type varchar(50) not null,
6      Paid_Date date not null
7  );
8
```

```sql
1  CREATE TABLE enrolling
2  (
3      Course_ID char(4) not null,
4      Student_ID char(4) not null,
5      Payment_ID char(5) not null,
6      FOREIGN KEY (Course_ID) REFERENCES course(Course_ID),
7      FOREIGN KEY (Student_ID) REFERENCES student(Student_ID),
8      FOREIGN KEY (Payment_ID) REFERENCES payment(Payment_ID)
9  );
10
```

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0257 seconds.)

CREATE TABLE enrolling (Course_ID char(4) not null, Student_ID char(4) not null, Payment_ID char(5) not null, FOREIGN KEY (Course_ID) REFERENCES course(Course_ID), FOREIGN KEY (Student_ID) REFERENCES student(Student_ID), FOREIGN KEY (Payment_ID) REFERENCES payment(Payment_ID));

[Edit inline] [Edit] [Create PHP code]

```sql
1  CREATE TABLE module
2  (
3      M_Code char(4) PRIMARY KEY,
4      M_name varchar(100) not null,
5      Semester varchar(20) not null,
6      Credits int not null,
7      Lecturer_ID char(4) not null
8  );
```

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0248 seconds.)

CREATE TABLE module (M_Code char(4) PRIMARY KEY, M_name varchar(100) not null, Semester varchar(20) not null, Credits int not null);

[Edit inline] [Edit] [Create PHP code]

```sql
1  CREATE TABLE Lecturer
2  (
3      Lecturer_ID char(4) PRIMARY KEY,
4      Lecturer_name varchar(150) not null,
5      Email varchar(100) not null,
6      Address varchar(100) not null,
7      Gender char(1) not null,
8      Date_of_Birth date not null
9  );
10
```

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0244 seconds.)

CREATE TABLE Lecturer (Lecturer_ID char(4) PRIMARY KEY, Lecturer_name varchar(150) not null, Email varchar(100) not null, Address varchar(100) not null, Gender char(1) not null, Date_of_Birth date not null);

[Edit inline] [Edit] [Create PHP code]

```sql
1  CREATE TABLE Lecturer_Contact
2  (
3      Lecturer_ID char(4) not null,
4      Contact_Number char(11) NOT NULL,
5      FOREIGN KEY (Lecturer_ID) REFERENCES Lecturer(Lecturer_ID)
6  );
7
```

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0251 seconds.)

CREATE TABLE Lecturer_Contact (Lecturer_ID char(4) not null, Contact_Number char(11) NOT NULL, FOREIGN KEY (Lecturer_ID) REFERENCES Lecturer(Lecturer_ID));

[Edit inline] [Edit] [Create PHP code]

```sql
1  CREATE TABLE module_leader
2  (
3      ML_Lecturer_ID char(4) not null,
4      M_Code char(4) not null,
5      FOREIGN KEY (ML_Lecturer_ID) REFERENCES Lecturer(Lecturer_ID),
6      FOREIGN KEY (M_Code) REFERENCES module(M_Code)
7  );
```

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0247 seconds.)

CREATE TABLE module_leader (ML_Lecturer_ID char(4) not null, M_Code char(4) not null, FOREIGN KEY (ML_Lecturer_ID) REFERENCES Lecturer(Lecturer_ID), FOREIGN KEY (M_Code) REFERENCES module(M_Code));

[Edit inline] [Edit] [Create PHP code]

```sql
1  CREATE TABLE sport
2  (
3      Sport_ID char(5) PRIMARY KEY,
4      Sport_name varchar(50) not null
5  );
6
```

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0237 seconds.)

CREATE TABLE sport (Sport_ID char(5) PRIMARY KEY, Sport_name varchar(50) not null);

[Edit inline] [Edit] [Create PHP code]

```sql
1  CREATE TABLE Part_Time
2  (
3      PT_Student_ID char(4) not null,
4      Occupation varchar(50) not null,
5      FOREIGN KEY (PT_Student_ID) REFERENCES student(Student_ID)
6  );
7
```

```sql
1  CREATE TABLE Sport_Full_Time
2  (
3      FT_Student_ID char(4) not null,
4      Sport_ID char(5) not null,
5      FOREIGN KEY (FT_Student_ID) REFERENCES student(Student_ID),
6      FOREIGN KEY (Sport_ID) REFERENCES sport(Sport_ID)
7  );
8
```

```sql
1  CREATE TABLE Mentoring
2  (
3      New_Lecturer_ID char(4) not null,
4      Senior_Lecturer_ID char(4) not null,
5      FOREIGN KEY (New_Lecturer_ID) REFERENCES Lecturer(Lecturer_ID),
6      FOREIGN KEY (Senior_Lecturer_ID) REFERENCES Lecturer(Lecturer_ID)
7  );
8
```

```
1  CREATE TABLE Course_Module
2  (
3      Course_Code char(4) not null,
4      M_Code char(4) not null,
5      FOREIGN KEY (Course_Code) REFERENCES course(Course_ID),
6      FOREIGN KEY (M_Code) REFERENCES module(M_Code)
7  );
8
```

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0243 seconds.)

CREATE TABLE Course_Module (Course_Code char(4) not null, M_Code char(4) not null, FOREIGN KEY (Course_Code) REFERENCES course(Course_ID), FOREIGN KEY (M_Code) REFERENCES module(M_Code));

[Edit inline] [Edit] [Create PHP code]

(Q5)

```
1   INSERT INTO
2   student (Student_ID,Student_name,Email,Address,Gender,Date_of_Birth,Full_or_Part_Time,Year_Enrolled)
3   VALUES
4   ('S001','Emma','emma@gmail.com','37 Great Western Road Longfleet','F','1998-10-23','Full',2021),
5   ('S002','Hardin','hardin@gmail.com','49 Lammas Street Great Ashfield','M','1999-08-12','Full',2021),
6   ('S003','Layla','layla@gmail.com','97 Fox Lane Boarshead','F','1998-03-09','Part',2021),
7   ('S004','Gabriella','gabriella@gmail.com','15 st Omers Road Hoarwathy','F','1998-04-10','Full',2020),
8   ('S005','Nicholas','nicholas@gmail.com','50 Ponteland Rd Howgill','M','1999-05-18','Part',2021),
9   ('S006','Hailey','haily@gmail.com','31 Crown Street London','F','1998-07-21','Full',2021),
10  ('S007','Liam','liam@gmail.com','10 City Walls Rd Chebsey','M','1998-07-13','Part',2021),
11  ('S008','Ellie','ellie@gmail.com','71 Broomfield Place','F','1998-11-16','Full',2021);
```

✔ 8 rows inserted. (Query took 0.0025 seconds.)

INSERT INTO student (Student_ID,Student_name,Email,Address,Gender,Date_of_Birth,Full_or_Part_Time,Year_Enrolled) VALUES ('S001','Emma','emma@gmail.com','37 Great Western Road Longfleet','F','1998-10-23','Full',2021), ('S002','Hardin','hardin@gmail.com','49 Lammas Street Great Ashfield','M','1999-08-12','Full',2021), ('S003','Layla','layla@gmail.com','97 Fox Lane Boarshead','F','1998-03-09','Part',2021), ('S004','Gabriella','gabriella@gmail.com','15 st Omers Road Hoarwathy','F','1998-04-10','Full',2020), ('S005','Nicholas','nicholas@gmail.com','50 Ponteland Rd Howgill','M','1999-05-18','Part',2021), ('S006','Hailey','haily@gmail.com','31 Crown Street London','F','1998-07-21','Full',2021), ('S007','Liam','liam@gmail.com','10 City Walls Rd Chebsey','M','1998-07-13','Part',2021), ('S008','Ellie','ellie@gmail.com','71 Broomfield Place','F','1998-11-16','Full',2021);

[Edit inline] [Edit] [Create PHP code]

```
1   INSERT INTO
2   Student_Contact
3   (Student_ID,Contact_Number)
4
5   VALUES
6   ('S001','07912487027'),
7   ('S001','07939454788'),
8   ('S002','07724040962'),
9   ('S003','07924221836'),
10  ('S004','07948634086');
11
```

```sql
1  INSERT INTO
2  course
3  (Course_ID,Course_name,Credit_Hours)
4
5  VALUES
6  ('C001','Artifial Intelligence and Data Science',3000),
7  ('C002','Software Engineering',2600),
8  ('C003','Bachelor of Commerce',3000),
9  ('C004','Computer Science',2500),
10 ('C005','Human Resources',2600),
11 ('C006','Business Administration',3000);
```

```sql
1  INSERT INTO
2  payment
3  (Payment_ID,Amount,Payment_Type,Paid_Date)
4
5  VALUES
6  ('P001',120000,'Online','2021-03-12'),
7  ('P002',150000,'Online','2021-05-18'),
8  ('P003',200000,'Online','2021-08-23'),
9  ('P004',230000,'Online','2021-10-12'),
10 ('P005',320000,'Online','2021-09-14');
```

```sql
1  INSERT INTO
2  enrolling
3  (Course_ID,Student_ID,Payment_ID)
4
5  VALUES
6  ('C001','S001','P005'),
7  ('C003','S002','P004'),
8  ('C002','S003','P002'),
9  ('C004','S005','P003'),
10 ('C005','S004','P001');
11
```

```
 1  INSERT INTO
 2   module
 3   (M_Code,M_name,Semester,Credits,Lecturer_ID)
 4
 5  VALUES
 6  ('M001','Programming','Year Long','80','L003'),
 7  ('M002','Database Systems','1st Sem','100','L001'),
 8  ('M003','Computation Mathematics','Year Long','90','L005'),
 9  ('M004','Computer System Fundamentals','2nd Sem','75','L002'),
10  ('M005','English','1st Sem','60','L004'),
11  ('M006','Accounting','Year Long','100','L006'),
12  ('M007','Business administration','2nd Sem','70','L002');
```

```
 1  INSERT INTO
 2  Lecturer
 3  (Lecturer_ID,Lecturer_name,Email,Address,Gender,Date_of_Birth)
 4
 5  VALUES
 6  ('L001','Dr.Anne Cameron','anne@gmail.com','79 Newgate Street Jump','F','1973-06-27'),
 7  ('L002','Dr.Jackson Landon','Jacklan@gmail.com','81 Bath Rd Wolferton','M','1989-04-12'),
 8  ('L003','Dr.Sophia Riley','sophiary@gmail.com','1 Scotsburn Rd Talwrn','F','1965-03-13'),
 9  ('L004','Dr.Jacob Owen','owenj@gmail.com','36 East Street Manston','M','1974-09-02'),
10  ('L005','Dr.Oliver David','davidolive@gmail.com','69 Sandyhill Rd Fulmer','M','1975-10-21'),
11  ('L006','Dr.Kaylee Luke','lukekaye@gmail.com','48 Southern Way North Newbald','F','1989-07-18');
12
```

```
 1  INSERT INTO
 2  Lecturer_Contact
 3  (Lecturer_ID,Contact_Number)
 4
 5  VALUES
 6  ('L001','07943448437'),
 7  ('L001','07957575867'),
 8  ('L002','07063433160'),
 9  ('L003','07888369094'),
10  ('L003','07926400554'),
11  ('L004','07985670373'),
12  ('L005','07959109590');
13  |
```

✔ 7 rows inserted. (Query took 0.0021 seconds.)

INSERT INTO Lecturer_Contact (Lecturer_ID,Contact_Number) VALUES ('L001','07943448437'), ('L001','07957575867'), ('L002','07063433160'), ('L003','07888369094'), ('L003','07926400554'), ('L004','07985670373'), ('L005','07959109590');

[Edit inline] [Edit] [Create PHP code]

```
 1  INSERT INTO
 2  module_leader
 3  (ML_Lecturer_ID,M_Code)
 4
 5  VALUES
 6  ('L003','M001'),
 7  ('L004','M002'),
 8  ('L001','M003'),
 9  ('L005','M004'),
10  ('L002','M005'),
11  ('L006','M006');
12  |
```

✔ 6 rows inserted. (Query took 0.0022 seconds.)

INSERT INTO module_leader (ML_Lecturer_ID,M_Code) VALUES ('L003','M001'), ('L004','M002'), ('L001','M003'), ('L005','M004'), ('L002','M005'), ('L006','M006');

[Edit inline] [Edit] [Create PHP code]

```sql
INSERT INTO
sport
(Sport_ID,Sport_name)

VALUES
('SP01','Badminton'),
('SP02','Tennis'),
('SP03','Basketball'),
('SP04','Baseball'),
('SP05','Volleyball'),
('SP06','Swimming');
```

```sql
INSERT INTO
Part_Time
(PT_Student_ID,Occupation)

VALUES
('S003','Cashier'),
('S005','Cleaner'),
('S007','Uber Rider');
```

```sql
INSERT INTO
Sport_Full_Time
(FT_Student_ID,Sport_ID)

VALUES
('S001','SP03'),
('S002','SP02'),
('S004','SP05'),
('S006','SP01'),
('S008','SP01');
```

```sql
1  INSERT INTO
2  Mentoring
3  (New_Lecturer_ID,Senior_Lecturer_ID)
4
5  VALUES
6  ('L004','L001'),
7  ('L005','L002'),
8  ('L006','L003');
9  |
```

```sql
1   INSERT INTO
2   Course_Module
3   (Course_Code,M_Code)
4
5   VALUES
6   ('C001','M001'),
7   ('C001','M002'),
8   ('C001','M003'),
9   ('C001','M004'),
10  ('C001','M005'),
11  ('C002','M001'),
12  ('C002','M003'),
13  ('C002','M004'),
14  ('C003','M006'),
15  ('C004','M001'),
16  ('C006','M007'); |
```

(Q6)

(01)

```
1  SELECT *
2  FROM student JOIN Part_Time
3  ON student.Student_ID = Part_Time.PT_Student_ID;
```

Showing rows 0 - 2 (3 total, Query took 0.0011 seconds.)

SELECT * FROM student JOIN Part_Time ON student.Student_ID = Part_Time.PT_Student_ID;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 ⬦ Filter rows: Search this table Sort by key: None ⬦

+ Options

Student_ID	Student_name	Email	Address	Gender	Date_of_Birth	Full_or_Part_Time	Year_Enrolled	PT_Student_ID	Occupation
S003	Layla	layla@gmail.com	97 Fox Lane Boarshead	F	1998-03-09	Part	2021	S003	Cashier
S005	Nicholas	nicholas@gmail.com	50 Ponteland Rd Howgill	M	1999-05-18	Part	2021	S005	Cleaner
S007	Liam	liam@gmail.com	10 City Walls Rd Chebsey	M	1998-07-13	Part	2021	S007	Uber Rider

Show all | Number of rows: 25 ⬦ Filter rows: Search this table Sort by key: None ⬦

(02)

```
1  SELECT M_name, Credits
2  FROM module
3  WHERE Credits = (SELECT MAX(Credits) FROM module);
```

Showing rows 0 - 0 (1 total, Query took 0.0009 seconds.)

SELECT M_name, Credits FROM module WHERE Credits = (SELECT MAX(Credits) FROM module);

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

←T→	M_name	Credits
Edit Copy Delete	Database Systems	100

Check all   With selected: Edit   Copy   Delete   Export

Show all | Number of rows: 25 | Filter rows: Search this table

```
1  SELECT M_name, Credits
2  FROM module
3  WHERE Credits = (SELECT MIN(Credits) FROM module);
```

Showing rows 0 - 0 (1 total, Query took 0.0008 seconds.)

SELECT M_name, Credits FROM module WHERE Credits = (SELECT MIN(Credits) FROM module);

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

←T→	M_name	Credits
Edit Copy Delete	English	60

Check all   With selected: Edit   Copy   Delete   Export

Show all | Number of rows: 25 | Filter rows: Search this table

(03)

```
1  SELECT module.M_name,module.M_Code,Lecturer.Lecturer_name
2  FROM module
3  LEFT JOIN Lecturer
4  ON module.Lecturer_ID = Lecturer.Lecturer_ID
5  ORDER BY module.M_name;
```

SELECT module.M_name,module.M_Code,Lecturer.Lecturer_name FROM module LEFT JOIN Lecturer ON module.Lectu
module.M_name;

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⬍   Filter rows: Search this table   Sort by key: None

+ Options

M_name ▲ 1	M_Code	Lecturer_name
Accounting	M006	Dr.Kaylee Luke
Business administration	M007	Dr.Jackson Landon
Computation Mathematics	M003	Dr.Oliver David
Computer System Fundamentals	M004	Dr.Jackson Landon
Database Systems	M002	Dr.Anne Cameron
English	M005	Dr.Jacob Owen
Programming	M001	Dr.Sophia Riley

☐ Show all | Number of rows: 25 ⬍   Filter rows: Search this table   Sort by key: None

Query results operations

🖨 Print   ⮊ Copy to clipboard   📤 Export   📊 Display chart   🗔 Create view

📑 Bookmark this SQL query

```
1  SELECT module.M_name,module.M_Code,Lecturer.Lecturer_name
2  FROM module
3  RIGHT JOIN Lecturer
4  ON module.Lecturer_ID| = Lecturer.Lecturer_ID
5  ORDER BY module.M_name;
```

SELECT module.M_name,module.M_Code,Lecturer.Lecturer_name FROM module RIGHT JOIN Lecturer ON module.Lec
module.M_name;

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⬍   Filter rows: Search this table   Sort by key: None

+ Options

M_name ▲ 1	M_Code	Lecturer_name
Accounting	M006	Dr.Kaylee Luke
Business administration	M007	Dr.Jackson Landon
Computation Mathematics	M003	Dr.Oliver David
Computer System Fundamentals	M004	Dr.Jackson Landon
Database Systems	M002	Dr.Anne Cameron
English	M005	Dr.Jacob Owen
Programming	M001	Dr.Sophia Riley

(04)

```
1  SELECT Gender,COUNT('F')
2  FROM student GROUP by Gender;
```

Showing rows 0 - 1 (2 total, Query took 0.0006 seconds.)

SELECT Gender,COUNT('F') FROM student GROUP by Gender;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh

Show all | Number of rows: 25 ÷ Filter rows: Search this table

+ Options

Gender	COUNT('F')
F	5
M	3

Show all | Number of rows: 25 ÷ Filter rows: Search this table

(05)

```
1  SELECT payment.Amount,payment.Payment_ID,enrolling.Course_ID,enrolling.Student_ID
2  FROM payment
3  LEFT JOIN enrolling
4  ON payment.Payment_ID = enrolling.Payment_ID
5  ORDER BY payment.Amount ASC;
```

Showing rows 0 - 4 (5 total, Query took 0.0014 seconds.) [Amount: **120000... - 320000...**]

SELECT payment.Amount,payment.Payment_ID,enrolling.Course_ID,enrolling.Student_ID
enrolling.Payment_ID ORDER BY payment.Amount ASC;

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 ÷ Filter rows: Search this table

+ Options

Amount ▲ 1	Payment_ID	Course_ID	Student_ID
120000	P001	C005	S004
150000	P002	C002	S003
200000	P003	C004	S005
230000	P004	C003	S002
320000	P005	C001	S001

DATABASE……..

```sql
SELECT * FROM `Course_Module`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code

Show all | Number of rows: 25 ⬍ Filter rows:

+ Options

Course_Code	M_Code
C001	M001
C001	M002
C001	M003
C001	M004
C001	M005
C002	M001
C002	M003
C002	M004
C003	M006
C004	M001
C006	M007

Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

```sql
SELECT * FROM `enrolling`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP c

Show all | Number of rows: 25 Filter row

+ Options

Course_ID	Student_ID	Payment_ID
C001	S001	P005
C003	S002	P004
C002	S003	P002
C004	S005	P003
C005	S004	P001

Showing rows 0 - 5 (6 total, Query took 0.0003 seconds.)

```sql
SELECT * FROM `Lecturer`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

	Lecturer_ID	Lecturer_name	Email	Address	Gender	Date_of_Birth
Edit Copy Delete	L001	Dr.Anne Cameron	anne@gmail.com	79 Newgate Street Jump	F	1973-06-27
Edit Copy Delete	L002	Dr.Jackson Landon	Jacklan@gmail.com	81 Bath Rd Wolferton	M	1989-04-12
Edit Copy Delete	L003	Dr.Sophia Riley	sophiary@gmail.com	1 Scotsburn Rd Talwrn	F	1965-03-13
Edit Copy Delete	L004	Dr.Jacob Owen	owenj@gmail.com	36 East Street Manston	M	1974-09-02
Edit Copy Delete	L005	Dr.Oliver David	davidolive@gmail.com	69 Sandyhill Rd Fulmer	M	1975-10-21
Edit Copy Delete	L006	Dr.Kaylee Luke	lukekaye@gmail.com	48 Southern Way North Newbald	F	1989-07-18

Check all   With selected: Edit   Copy   Delete   Export

Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None

+ Options

Lecturer_ID	Contact_Number
L001	07943448437
L001	07957575867
L002	07063433160
L003	07888369094
L003	07926400554
L004	07985670373
L005	07959109590

+ Options

New_Lecturer_ID	Senior_Lecturer_ID
L004	L001
L005	L002
L006	L003

SELECT * FROM `module`

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

←T→			M_Code	M_name	Semester	Credits	Lecturer_ID
Edit	Copy	Delete	M001	Programming	Year Long	80	L003
Edit	Copy	Delete	M002	Database Systems	1st Sem	100	L001
Edit	Copy	Delete	M003	Computation Mathematics	Year Long	90	L005
Edit	Copy	Delete	M004	Computer System Fundamentals	2nd Sem	75	L002
Edit	Copy	Delete	M005	English	1st Sem	60	L004
Edit	Copy	Delete	M006	Accounting	Year Long	100	L006
Edit	Copy	Delete	M007	Business administration	2nd Sem	70	L002

↑ Check all With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

SELECT * FROM `module_leader`

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP cod

Show all | Number of rows: 25 | Filter rows:

+ Options

ML_Lecturer_ID	M_Code
L003	M001
L004	M002
L001	M003
L005	M004
L002	M005
L006	M006

+ Options

M_Code	Lecturer_ID
M002	L003
M005	L001
M003	L006
M001	L001
M007	L004
M004	L002

+ Options

PT_Student_ID	Occupation
S003	Cashier
S005	Cleaner
S007	Uber Rider

```
SELECT * FROM `payment`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 ⬍ Filter rows: Search this table Sort b

+ Options

				Payment_ID	Amount	Payment_Type	Paid_Date
	Edit	Copy	Delete	P001	120000	Online	2021-03-12
	Edit	Copy	Delete	P002	150000	Online	2021-05-18
	Edit	Copy	Delete	P003	200000	Online	2021-08-23
	Edit	Copy	Delete	P004	230000	Online	2021-10-12
	Edit	Copy	Delete	P005	320000	Online	2021-09-14

```
SELECT * FROM `sport`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [F

Show all | Number of rows: 25 ⬍ Filter rows: Sea

+ Options

				Sport_ID	Sport_name
	Edit	Copy	Delete	SP01	Badminton
	Edit	Copy	Delete	SP02	Tennis
	Edit	Copy	Delete	SP03	Basketball
	Edit	Copy	Delete	SP04	Baseball
	Edit	Copy	Delete	SP05	Volleyball
	Edit	Copy	Delete	SP06	Swimming

Sport_Full_Time

Showing rows 0 - 4 (5 total, Query took 0.0007 seconds.)

```sql
SELECT * FROM `Sport_Full_Time`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP co

☐ Show all | Number of rows: 25 ⬍ Filter rows

+ Options

FT_Student_ID	Sport_ID
S001	SP03
S002	SP02
S004	SP05
S006	SP01
S008	SP01

student

Showing rows 0 - 7 (8 total, Query took 0.0003 seconds.)

```sql
SELECT * FROM `student`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⬍ Filter rows: Search this table | Sort by key: None ⬍

+ Options

		Student_ID	Student_name	Email	Address	Gender	Date_of_Birth	Full_or_Part_Time	Year_Enrolled
☐	Edit 📋 Copy ⊘ Delete	S001	Emma	emma@gmail.com	37 Great Western Road Longfleet	F	1998-10-23	Full	2021
☐	Edit 📋 Copy ⊘ Delete	S002	Hardin	hardin@gmail.com	49 Lammas Street Great Ashfield	M	1999-08-12	Full	2021
☐	Edit 📋 Copy ⊘ Delete	S003	Layla	layla@gmail.com	97 Fox Lane Boarshead	F	1998-03-09	Part	2021
☐	Edit 📋 Copy ⊘ Delete	S004	Gabriella	gabriella@gmail.com	15 st Omers Road Hoarwathy	F	1998-04-10	Full	2020
☐	Edit 📋 Copy ⊘ Delete	S005	Nicholas	nicholas@gmail.com	50 Ponteland Rd Howgill	M	1999-05-18	Part	2021
☐	Edit 📋 Copy ⊘ Delete	S006	Hailey	haily@gmail.com	31 Crown Street London	F	1998-07-21	Full	2021
☐	Edit 📋 Copy ⊘ Delete	S007	Liam	liam@gmail.com	10 City Walls Rd Chebsey	M	1998-07-13	Part	2021
☐	Edit 📋 Copy ⊘ Delete	S008	Ellie	ellie@gmail.com	71 Broomfield Place	F	1998-11-16	Full	2021

⬆ ☐ Check all   With selected: ✎ Edit 📋 Copy ⊘ Delete 🖳 Export

Student_Contact

Showing rows 0 - 4 (5 total, Query took 0.0007 seconds.)

```sql
SELECT * FROM `Student_Contact`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP coc

☐ Show all | Number of rows: 25 ⬍ Filter rows:

+ Options

Student_ID	Contact_Number
S001	07912487027
S001	07939454788
S002	07724040962
S003	07924221836
S004	07948634086

SQL…………………

```sql
CREATE DATABASE caams_college;

CREATE TABLE student
(
    Student_ID char(4),
    Student_name varchar(150),
    Email varchar(100),
    Address varchar(100),
    Gender char(1),
    Date_of_Birth date,
    Full_or_Part_Time char(4),
    Year_Enrolled int,
    PRIMARY KEY (Student_ID)
);

INSERT INTO
student
(Student_ID,Student_name,Email,Address,Gender,Date_of_Birth,Full_or_Part_Time,Year_Enrolled)
VALUES
('S001','Emma','emma@gmail.com','37 Great Western Road Longfleet','F','1998-10-23','Full',2021),
('S002','Hardin','hardin@gmail.com','49 Lammas Street Great Ashfield','M','1999-08-12','Full',2021),
('S003','Layla','layla@gmail.com','97 Fox Lane Boarshead','F','1998-03-09','Part',2021),
('S004','Gabriella','gabriella@gmail.com','15 st Omers Road Hoarwathy','F','1998-04-10','Full',2020),
('S005','Nicholas','nicholas@gmail.com','50 Ponteland Rd Howgill','M','1999-05-18','Part',2021),
('S006','Hailey','haily@gmail.com','31 Crown Street London','F','1998-07-21','Full',2021),
('S007','Liam','liam@gmail.com','10 City Walls Rd Chebsey','M','1998-07-13','Part',2021),
('S008','Ellie','ellie@gmail.com','71 Broomfield Place','F','1998-11-16','Full',2021);

CREATE TABLE Student_Contact
(
    Student_ID char(4) not null,
    Contact_Number char(11) NOT NULL,
    FOREIGN KEY (Student_ID) REFERENCES Student(Student_ID)
);

INSERT INTO
```

Student_Contact
(Student_ID,Contact_Number)

VALUES
('S001','07912487027'),
('S001','07939454788'),
('S002','07724040962'),
('S003','07924221836'),
('S004','07948634086');

CREATE TABLE course
(
    Course_ID char(4) PRIMARY KEY,
    Course_name varchar(100) NOT NULL,
    Credit_Hours int NOT NULL
);

INSERT INTO
course
(Course_ID,Course_name,Credit_Hours)

VALUES
('C001','Artifial Intelligence and Data Science',3000),
('C002','Software Engineering',2600),
('C003','Bachelor of Commerce',3000),
('C004','Computer Science',2500),
('C005','Human Resources',2600),
('C006','Business Administration',3000);

CREATE TABLE payment
(
    Payment_ID char(4) PRIMARY KEY,
    Amount int not null,
    Payment_Type varchar(50) not null,
    Paid_Date date not null
);

INSERT INTO
payment
(Payment_ID,Amount,Payment_Type,Paid_Date)

```sql
VALUES
('P001',120000,'Online','2021-03-12'),
('P002',150000,'Online','2021-05-18'),
('P003',200000,'Online','2021-08-23'),
('P004',230000,'Online','2021-10-12'),
('P005',320000,'Online','2021-09-14');


CREATE TABLE enrolling
(
    Course_ID char(4) not null,
    Student_ID char(4) not null,
    Payment_ID char(5) not null,
    FOREIGN KEY (Course_ID) REFERENCES course(Course_ID),
    FOREIGN KEY (Student_ID) REFERENCES student(Student_ID),
    FOREIGN KEY (Payment_ID) REFERENCES payment(Payment_ID)
);

INSERT INTO
enrolling
(Course_ID,Student_ID,Payment_ID)

VALUES
('C001','S001','P005'),
('C003','S002','P004'),
('C002','S003','P002'),
('C004','S005','P003'),
('C005','S004','P001');

CREATE TABLE module
(
    M_Code char(4) PRIMARY KEY,
    M_name varchar(100) not null,
    Semester varchar(20) not null,
    Credits int not null,
    Lecturer_ID char(4) not null
);


INSERT INTO
```

```sql
module
(M_Code,M_name,Semester,Credits,Lecturer_ID)

VALUES
('M001','Programming','Year Long','80','L003'),
('M002','Database Systems','Year Long','100','L001'),
('M003','Computation Mathematics','Year Long','90','L005'),
('M004','Computer System Fundamentals','Year Long','75','L002'),
('M005','English','Year Long','60','L004'),
('M006','Accounting','Year Long','100','L006'),
('M007','Business administration','Year Long','70','L002');


CREATE TABLE Lecturer
(
    Lecturer_ID char(4) PRIMARY KEY,
    Lecturer_name varchar(150) not null,
    Email varchar(100) not null,
    Address varchar(100) not null,
    Gender char(1) not null,
    Date_of_Birth date not null
);

INSERT INTO
Lecturer
(Lecturer_ID,Lecturer_name,Email,Address,Gender,Date_of_Birth)

VALUES
('L001','Dr.Anne Cameron','anne@gmail.com','79 Newgate Street Jump','F','1973-06-27'),
('L002','Dr.Jackson Landon','Jacklan@gmail.com','81 Bath Rd Wolferton','M','1989-04-12'),
('L003','Dr.Sophia Riley','sophiary@gmail.com','1 Scotsburn Rd Talwrn','F','1965-03-13'),
('L004','Dr.Jacob Owen','owenj@gmail.com','36 East Street Manston','M','1974-09-02'),
('L005','Dr.Oliver David','davidolive@gmail.com','69 Sandyhill Rd Fulmer','M','1975-10-21'),
('L006','Dr.Kaylee Luke','lukekaye@gmail.com','48 Southern Way North Newbald','F','1989-07-18');

CREATE TABLE Lecturer_Contact
(
    Lecturer_ID char(4) not null,
    Contact_Number char(11) NOT NULL,
    FOREIGN KEY (Lecturer_ID) REFERENCES Lecturer(Lecturer_ID)
```

```sql
);

INSERT INTO
Lecturer_Contact
(Lecturer_ID,Contact_Number)

VALUES
('L001','07943448437'),
('L001','07957575867'),
('L002','07063433160'),
('L003','07888369094'),
('L003','07926400554'),
('L004','07985670373'),
('L005','07959109590');




CREATE TABLE module_leader
(
    ML_Lecturer_ID char(4) not null,
    M_Code char(4) not null,
    FOREIGN KEY (ML_Lecturer_ID) REFERENCES Lecturer(Lecturer_ID),
    FOREIGN KEY (M_Code) REFERENCES module(M_Code)
);

INSERT INTO
module_leader
(ML_Lecturer_ID,M_Code)

VALUES
('L003','M001'),
('L004','M002'),
('L001','M003'),
('L005','M004'),
('L002','M005'),
('L006','M006');

CREATE TABLE sport
(
    Sport_ID char(5) PRIMARY KEY,
```

```sql
    Sport_name varchar(50) not null
);

INSERT INTO
sport
(Sport_ID,Sport_name)

VALUES
('SP01','Badminton'),
('SP02','Tennis'),
('SP03','Basketball'),
('SP04','Baseball'),
('SP05','Volleyball'),
('SP06','Swimming');

CREATE TABLE Part_Time
(
    PT_Student_ID char(4) not null,
    Occupation varchar(50) not null,
    FOREIGN KEY (PT_Student_ID) REFERENCES student(Student_ID)
);

INSERT INTO
Part_Time
(PT_Student_ID,Occupation)

VALUES
('S003','Cashier'),
('S005','Cleaner'),
('S007','Uber Rider');

CREATE TABLE Sport_Full_Time
(
    FT_Student_ID char(4) not null,
    Sport_ID char(5) not null,
    FOREIGN KEY (FT_Student_ID) REFERENCES student(Student_ID),
    FOREIGN KEY (Sport_ID) REFERENCES sport(Sport_ID)
);

INSERT INTO
Sport_Full_Time
```

(FT_Student_ID,Sport_ID)

VALUES
('S001','SP03'),
('S002','SP02'),
('S004','SP05'),
('S006','SP01'),
('S008','SP01');

CREATE TABLE Mentoring
(
    New_Lecturer_ID char(4) not null,
    Senior_Lecturer_ID char(4) not null,
    FOREIGN KEY (New_Lecturer_ID) REFERENCES Lecturer(Lecturer_ID),
    FOREIGN KEY (Senior_Lecturer_ID) REFERENCES Lecturer(Lecturer_ID)
);

INSERT INTO
Mentoring
(New_Lecturer_ID,Senior_Lecturer_ID)

VALUES
('L004','L001'),
('L005','L002'),
('L006','L003');

CREATE TABLE Course_Module
(
    Course_Code char(4) not null,
    M_Code char(4) not null,
    FOREIGN KEY (Course_Code) REFERENCES course(Course_ID),
    FOREIGN KEY (M_Code) REFERENCES module(M_Code)
);

INSERT INTO
Course_Module
(Course_Code,M_Code)

VALUES
('C001','M001'),

```
('C001','M002'),
('C001','M003'),
('C001','M004'),
('C001','M005'),
('C002','M001'),
('C002','M003'),
('C002','M004'),
('C003','M006'),
('C004','M001'),
('C006','M007');
```