CCC

COLLEGES CLUBS CONTAINER

Prepared For :
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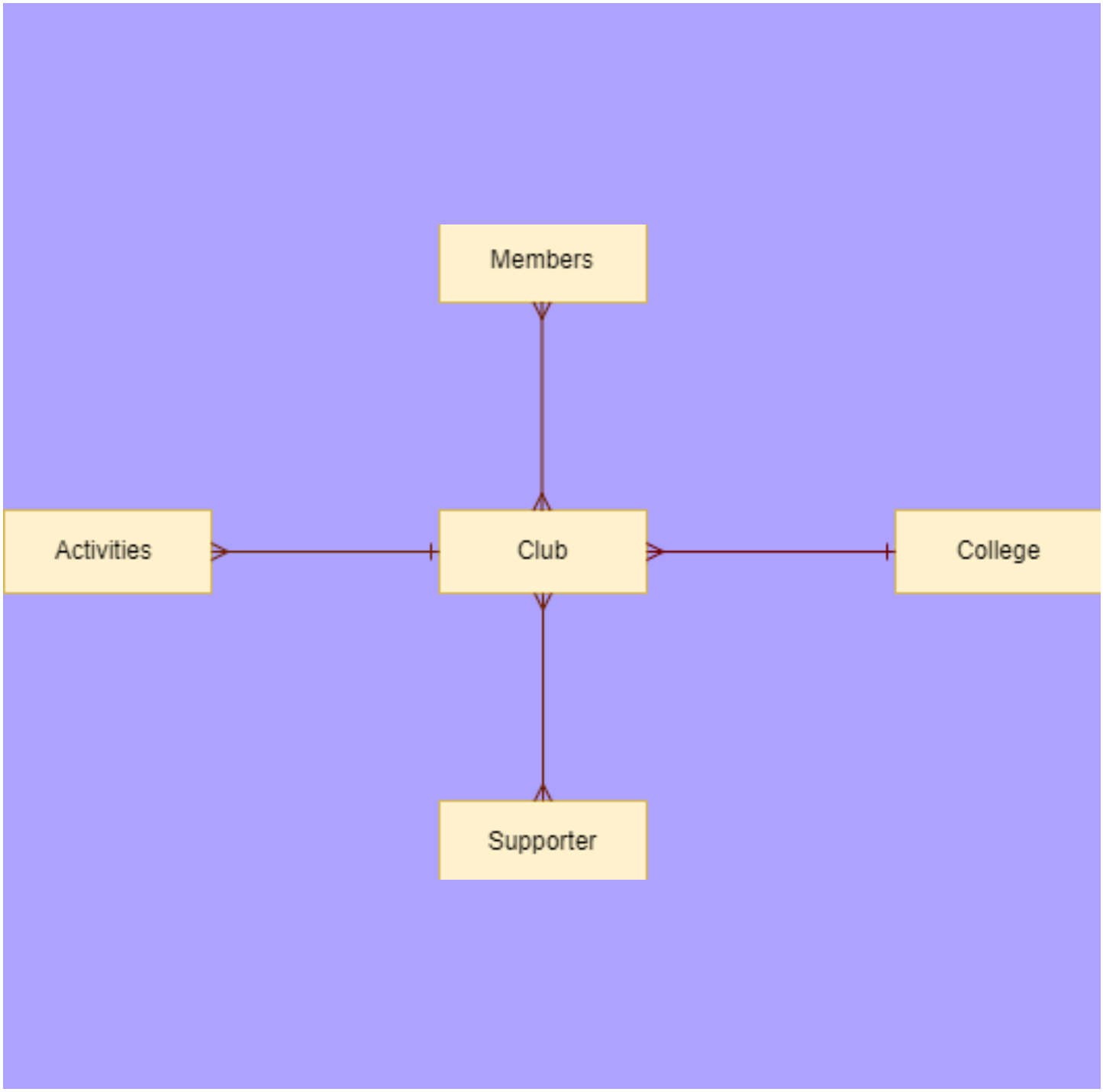
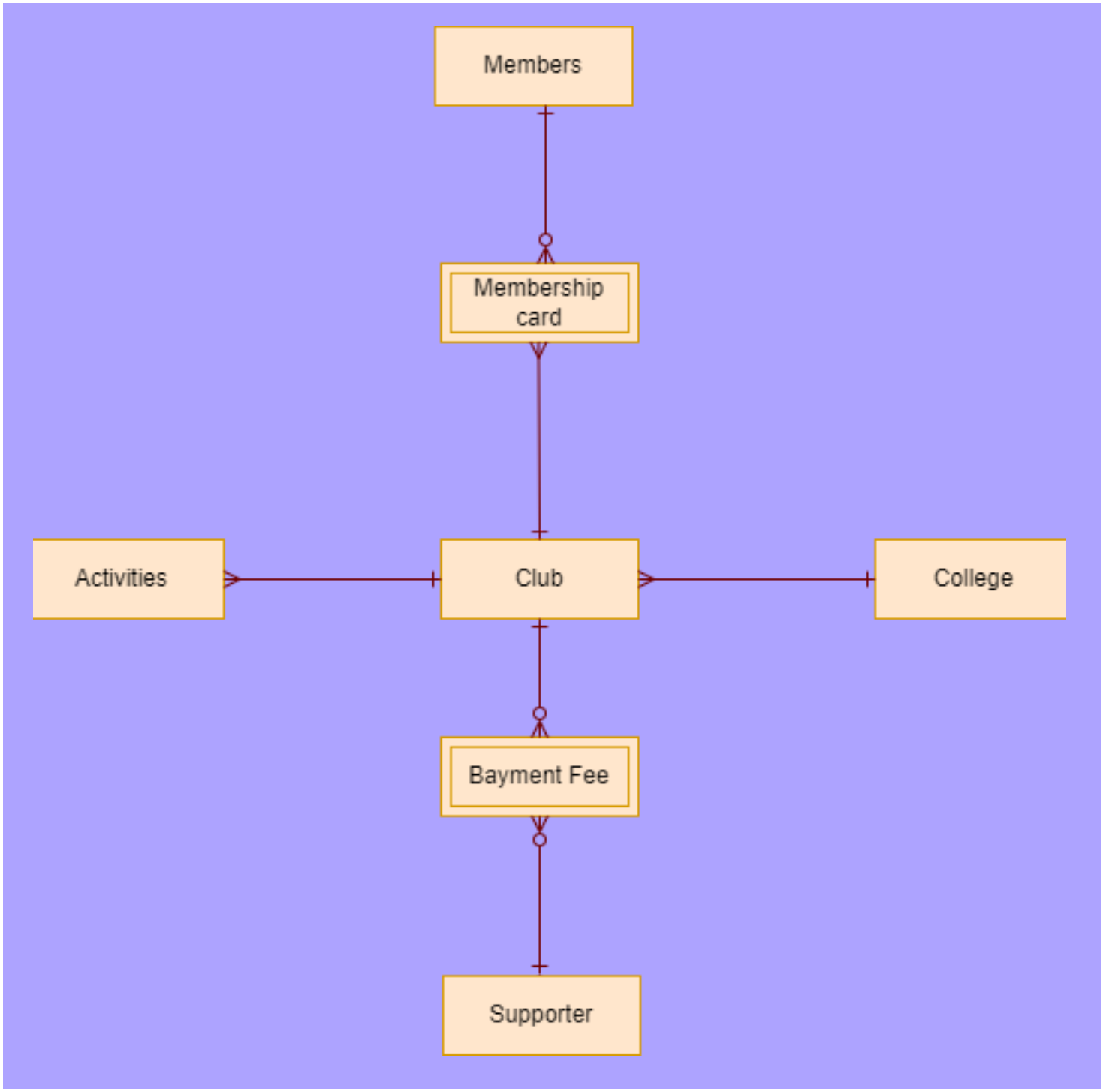
Project idea

The Colleges Clubs Container is an application that provides a platform for college students to explore and engage with various clubs and their activities. The college has its dedicated section within the application, showcasing the unique clubs available. Students can discover a wide range of clubs covering diverse interests such as sports, arts, Science, community service, and more. Each club has its own profile page, providing information about its activities, events, and purpose. Students can learn about the club's mission by providing a calendar that displays upcoming club events, making it easy for students to stay updated on meetings, workshops, competitions, and social gatherings organized by clubs within their college. The profile also highlights the club's supporters, which may include faculty members, alumni, or local sponsors who contribute to the club's success. Membership in clubs is facilitated through the application as well. Students can join clubs of their choice by submitting a membership request, which is then reviewed and approved by the club's designated leaders. Once accepted, students gain access to club-specific discussions, resources, and event notifications. Then play a role as a member. Each college has several clubs, each club affiliated to one college. Each club has several activities, each activity belonging to one club. Each club includes several members, each member can join one or more clubs. Each club can get one or more support, each supporter can support more than one club.

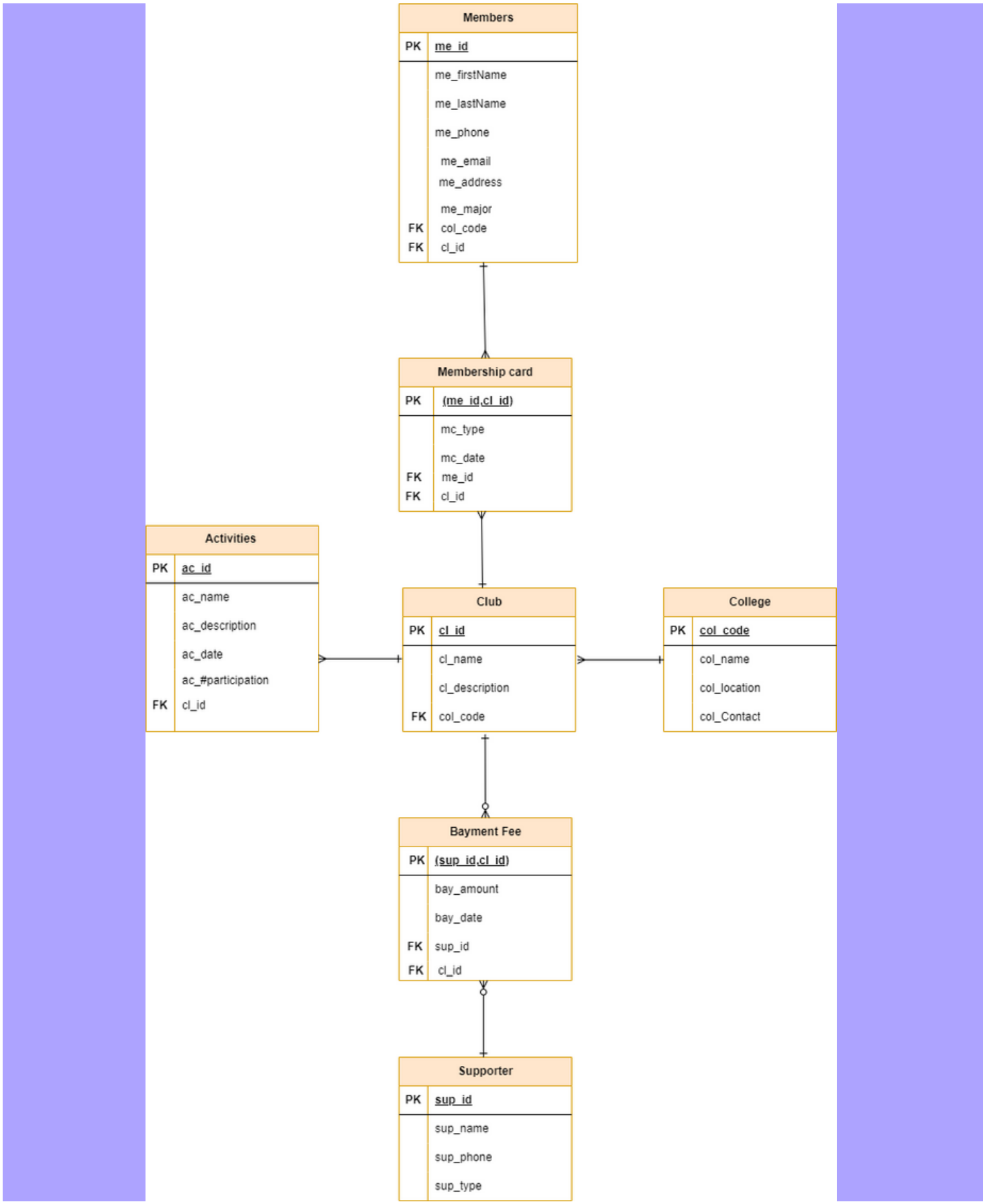
ENTERPRISE DATA MODEL



CONCEPTUAL DATA MODEL



ENHANCED ENTITY RELATIONSHIP DIAGRAM



College

Field	Data Type	Constraints
col_code	N(6)	PK
col_name	Varchar(30)	
col_location	Varchar(20)	
col_Contact	C(8)	Not Null

Club

Field	Data Type	Constraints
cl_id	N(6)	PK
cl_name	Varchar(30)	FK(link to College)
cl_description	Varchar(50)	
col_code	C(8)	FK (link to College)

Activities

Field	Data Type	Constraints
ac_id	N(6)	PK
ac_name	Varchar (30)	
ac_description	Varchar (50)	
ac_date	Date	Not Null
ac_#participation	Varchar(50)	
cl_id	N(6)	FK(link to Club)

Payment Fee

Field	Data Type	Constraints
(sup_id,cl_id)	N(6)	PK
pay_amount	N(10)	
pay_date	Date	Not Null
sup_id	N(8)	FK(link to Supporter)
cl_id	N(6)	FK(link to Club)

Supporter

Field	Data Type	Constraints
sup_id	N(6)	PK, Positive
sup_name	Varchar (30)	
sup_phone	C(8)	Not Null
sup_type	Varchar (20)	

Membership card

Field	Data Type	Constraints
(me_id,cl_id)	N(6)	PK, Positive
mc_type	Varchar (20)	
mc_date	Date	Not Null
me_id	N(6)	FK (link to Membership)
cl_id	N(6)	FK (link to Club)

Membership

Field	Data Type	Constraints
me_id	N(6)	PK, Positive
me_firstName	Varchar (20)	
me_lastName	Varchar (20)	
me_phone	C(8)	Not Null
me_email	Varchar (20)	
me_address	Varchar (20)	
me_major	Varchar (20)	
col_code	N(6)	FK (linked to College)
cl_id	N(6)	FK (linked to Club)

(a) Create all tables without specifying their primary keys and foreign keys

```
-- SECTION B - 4 -(a)
CREATE TABLE college (col_code varchar(3) Not Null,
                      col_name varchar(30) NOT NULL,
                      col_location varchar(20),
                      col_contact numeric(8) Not Null);

CREATE TABLE club (cl_id numeric(3) Not Null ,
                   cl_name varchar(30) Not Null,
                   cl_description varchar(50) Not Null,
                   col_code varchar(3) Not Null);

CREATE TABLE activities (ac_id numeric(6) Not Null,
                   ac_name varchar(30) Not Null,
                   ac_description varchar(50) Not Null,
                   ac_date date Not Null,
                   ac_#participation varchar(50),
                   cl_id numeric(3) Not Null);
CREATE TABLE supporters (
  sup_id numeric(6) Not Null,
  sup_name varchar(30) Not Null,
  sup_phone CHAR(8) Not Null,
  sup_type varchar(20)Not Null);

CREATE TABLE paymentFee (
  sup_id numeric(6) Not Null,
  cl_id numeric(3) Not Null,
  bay_amount numeric(10) Not Null,
  bay_date DATE Not Null);
```

```sql
CREATE TABLE membership (
  me_id numeric(6) Not Null,
  me_firstName varchar(20) Not Null,
  me_lastName varchar(20) Not Null,
  me_phone CHAR(8) Not Null,
  me_email varchar(20) Not Null,
  me_address varchar(20),
  me_major varchar(20) Not Null,
  col_code varchar(3) Not Null,
  cl_id numeric(3) Not Null);

CREATE TABLE membershipCard (
  me_id numeric(6) Not Null,
  cl_id numeric(3) Not Null,
  mc_type varchar(20) Not Null,
  mc_date DATE Not Null);
```

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

```sql
-- Section B - 4 - (b)

  -- Add primary key and foreign key to College table
ALTER TABLE college ADD CONSTRAINT pk_College PRIMARY KEY (col_code);

-- Add foreign key to Club table
ALTER TABLE club ADD CONSTRAINT fk_College_Club FOREIGN KEY (col_code) REFERENCES college(col_code);

-- Add primary key and foreign key to Club table
ALTER TABLE club ADD CONSTRAINT pk_Club PRIMARY KEY (cl_id);

-- Add foreign key to Activities table
ALTER TABLE activities ADD CONSTRAINT fk_Club_Activities FOREIGN KEY (cl_id) REFERENCES club(cl_id);

-- Add primary key to Activities table
ALTER TABLE activities ADD CONSTRAINT pk_Activities PRIMARY KEY (ac_id);

-- Add primary key to Supporter table
ALTER TABLE supporters ADD CONSTRAINT pk_Supporter PRIMARY KEY (sup_id);

-- Add foreign keys to PaymentFee table
ALTER TABLE paymentFee ADD CONSTRAINT fk_Supporter_PaymentFee FOREIGN KEY (sup_id) REFERENCES supporters(sup_id);
ALTER TABLE paymentFee ADD CONSTRAINT fk_Club_PaymentFee FOREIGN KEY (cl_id) REFERENCES club(cl_id);

-- Add foreign keys to Membership table
ALTER TABLE Membership ADD CONSTRAINT fk_College_Membership FOREIGN KEY (col_code) REFERENCES College(col_code);
ALTER TABLE Membership ADD CONSTRAINT fk_Club_Membership FOREIGN KEY (cl_id) REFERENCES club(cl_id);
ALTER TABLE Membership ADD CONSTRAINT pk_Membership PRIMARY KEY (me_id);
```

```
-- Add foreign keys to MembershipCard table
ALTER TABLE MembershipCard ADD CONSTRAINT fk_Membership_MembershipCard FOREIGN KEY (me_id) REFERENCES membership(me_id);
ALTER TABLE MembershipCard ADD CONSTRAINT fk_Club_MembershipCard FOREIGN KEY (cl_id) REFERENCES club(cl_id);

-- Add primary key to MembershipCard table
ALTER TABLE MembershipCard ADD CONSTRAINT pk_MembershipCard PRIMARY KEY (me_id, cl_id);
```

(c) Use alter statement to add a column in at least one table.

```
--Section B - 4 -(c)
ALTER TABLE membership ADD secondName varchar(20);
ALTER TABLE membershipCard ADD Numberofmembership numeric(3);
```

110 %

Messages

```
Commands completed successfully.

Completion time: 2023-06-19T13:21:31.9784910+04:00
```

(d) Use alter statement to remove a column from at least one table.

```
--Section B - 4 -(d)
ALTER TABLE membership DROP COLUMN secondName;
select * from membership;
```

110 %

Results | Messages

	me_id	me_firstName	me_lastName	me_phone	me_email	me_address	me_major	col_code	cl_id
1	1	Noor	Almamari	76258633	####@gmail.com	muscat	IT	RC	1
2	2	Mona	Alnasri	96258633	####@gmail.com	Ibri	IT	IC	2
3	3	Hajeer	Alsaaidi	96896863	####@gmail.com	Sohar	IT	SC	3

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

```
ALTER TABLE membershipCard ADD CONSTRAINT nuique_membershipCard
UNIQUE (mc_type);

ALTER TABLE college
ALTER COLUMN col_location varchar(20) NOT NULL;


ALTER TABLE college
ADD CONSTRAINT col_contactt_Check
CHECK (col_contact > 70000000);
```

110 %

Messages

```
Commands completed successfully.

Completion time: 2023-06-19T13:27:43.9917136+04:00
```

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

```sql
-- Section B - 5
-- Insert rows into the College table
INSERT INTO College (col_code, col_name, col_location, col_contact)
VALUES ('RC', 'Alrustaq College', 'Alrustaq',73535454);

INSERT INTO College (col_code, col_name, col_location, col_contact)
VALUES ('IC', 'IBRI College','Ibri' ,93985553);

INSERT INTO College (col_code, col_name, col_location, col_contact)
VALUES ('SC', 'Sohar College','Sohar', 75678912);
-- Insert rows into the Club table
INSERT INTO Club (cl_id, cl_name, cl_description, col_code)
VALUES (1, 'Sports Club', 'For sports enthusiasts', 'SC');

INSERT INTO Club (cl_id, cl_name, cl_description, col_code)
VALUES (2, 'Art Club', 'Explore your artistic side', 'IC');

INSERT INTO Club (cl_id, cl_name, cl_description, col_code)
VALUES (3, 'Science Club', 'Discover the wonders of science', 'RC');

INSERT INTO Club (cl_id, cl_name, cl_description, col_code)
VALUES (4, 'Art Club', 'Discover the wonders of science', 'RC');

INSERT INTO Club (cl_id, cl_name, cl_description, col_code)
VALUES (5, 'Music Club', 'Explore your artistic side', 'IC');

INSERT INTO Club (cl_id, cl_name, cl_description, col_code)
VALUES (6, 'IT Club', 'Explore your artistic side', 'IC');
```

```sql
-- Insert rows into the Activities table
INSERT INTO Activities (ac_id, ac_name, ac_description, ac_date, ac_#participation, cl_id)
VALUES (1, 'Football Tournament', 'Annual football competition', '2023-07-15', '50 participants', 1);

INSERT INTO Activities (ac_id, ac_name, ac_description, ac_date, ac_#participation, cl_id)
VALUES (2, 'Art Exhibition', 'Showcase of student artwork', '2023-08-20', '100 participants', 2);

INSERT INTO Activities (ac_id, ac_name, ac_description, ac_date, ac_#participation, cl_id)
VALUES (3, 'Science Fair', 'Display of scientific experiments', '2023-09-10', '75 participants', 3);

-- Insert rows into the Supporter table
INSERT INTO supporters (sup_id, sup_name, sup_phone, sup_type)
VALUES (100, 'Ahmed Almamari', 72345678, 'Individual');

INSERT INTO supporters (sup_id, sup_name, sup_phone, sup_type)
VALUES (200, 'Muna Almusalami', 98765432, 'Corporate');

INSERT INTO supporters (sup_id, sup_name, sup_phone, sup_type)
VALUES (300, 'Ali Alsaiedi', 95678912, 'Leader');
```

```sql
-- Insert rows into the PaymentFee table
INSERT INTO PaymentFee (sup_id, cl_id, bay_amount, bay_date)
VALUES (100, 1, 100, '2023-07-01');

INSERT INTO PaymentFee (sup_id, cl_id, bay_amount, bay_date)
VALUES (200, 2, 75, '2023-08-05');

INSERT INTO PaymentFee (sup_id, cl_id, bay_amount, bay_date)
VALUES (300, 3, 50, '2023-09-01');

-- Insert rows into the Membership table
INSERT INTO membership(me_id,me_firstName,me_lastName,me_phone, me_email,me_address ,me_major,col_code, cl_id)
VALUES (1, 'Noor', 'Almamari', 76258633,'####@gmail.com','muscat','IT','RC',1);

INSERT INTO membership(me_id,me_firstName,me_lastName,me_phone, me_email,me_address ,me_major,col_code, cl_id)
VALUES (2, 'Mona', 'Alnasri', 96258633,'####@gmail.com','Ibri','IT','IC',2);


INSERT INTO membership(me_id,me_firstName,me_lastName,me_phone, me_email,me_address ,me_major,col_code, cl_id)
VALUES (3, 'Hajeer', 'Alsaaidi', 96896863,'####@gmail.com','Sohar','IT','SC',3);
```

```sql
-- Insert rows into the MembershipCard table
INSERT INTO MembershipCard (me_id, cl_id, mc_type, mc_date, Numberofmembership)
VALUES (1, 1, 'Leader', '2023-07-01', 3);

INSERT INTO MembershipCard (me_id, cl_id, mc_type, mc_date, Numberofmembership )
VALUES (2, 2, 'subervising', '2023-08-05', 5);

INSERT INTO MembershipCard (me_id, cl_id, mc_type, mc_date, Numberofmembership)
VALUES (3, 3, 'S_leader', '2023-09-01', 7);
```

(a) Retrieve full information stored in one table.

```sql
--Section C - 6 - a
SELECT * FROM activities;
SELECT * FROM club;
SELECT * FROM college;
SELECT * FROM membership;
SELECT * FROM membershipCard;
SELECT * FROM paymentFee;
SELECT * FROM supporters;
```

00 %

Results | Messages

	ac_id	ac_name	ac_description	ac_date	ac_#participation	cl_id
1	1	Football Tournament	Annual football competition	2023-07-15	50 participants	1
2	2	Art Exhibition	Showcase of student artwork	2023-08-20	100 participants	2
3	3	Science Fair	Display of scientific experiments	2023-09-10	75 participants	3

(b) Retrieve from any table the records which satisfy certain criteria.

```
--Section C - 6 - b
select me_firstName from membership where me_firstName LIKE'M%';

SELECT *FROM paymentFee WHERE bay_amount > 50;

SELECT * FROM membershipCard,college
WHERE Numberofmembership > 5
AND col_location = 'Ibri';
```

100 %

Results | Messages

	me_id	cl_id	mc_type	mc_date	Numberofmembership	col_code	col_name	col_location	col_contact
1	3	3	S_leader	2023-09-01	7	IC	IBRI College	Ibri	93985553

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

```
--Section C - 6 - c
SELECT sup_name,sup_phone,MAX(bay_amount) as max_payment
FROM supporters, paymentFee
group by sup_name,sup_phone ;
```

%

Results | Messages

sup_name	sup_phone	max_payment
Ahmed Almamari	72345678	100
Ali Alsaiedi	95678912	100
Muna Almusalami	98765432	100

(d) List related information from two tables. The list must contain at leastone field from each table.

```
--Section C - 6 - d
SELECT membership.me_id, membership.me_firstName, membership.me_lastName, activities.ac_id, activities.ac_name
FROM membership
JOIN activities ON membership.me_id = activities.ac_id;
```

100 %

Results | Messages

	me_id	me_firstName	me_lastName	ac_id	ac_name
1	1	Noor	Almamari	1	Football Tournament
2	2	Mona	Alnasri	2	Art Exhibition
3	3	Hajeer	Alsaaidi	3	Science Fair

(e) Produce a statistical list (Query) of two columns only, which aggregatesthe 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'

```
--Section C - 6 - e
SELECT sup_id, COUNT(bay_amount) AS TotalPayments, SUM(bay_amount) AS TotalAmount, AVG(bay_amount) AS AverageAmount
FROM paymentFee
GROUP BY sup_id;
```

100 %

Results | Messages

	sup_id	TotalPayments	TotalAmount	AverageAmount
1	100	1	100	100.000000
2	200	1	75	75.000000
3	300	1	50	50.000000

(f) 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.

```
--Section C - 6 - f
SELECT c.col_name AS CollegeName, COUNT(cl.cl_id) AS TotalClubs
FROM college c
LEFT JOIN club cl ON c.col_code = cl.col_code
GROUP BY c.col_code, c.col_name;
```

100 %

Results | Messages

	CollegeName	TotalClubs
1	IBRI College	3
2	Alrustaq College	2
3	Sohar College	1