AMERICAN INTERNATIONAL UNIVERSITY BANGLADESH

(AIUB)

FACULTY OF SCIENCE & TECHNOLOGY

Course Title

INTRODUCTION TO DATABASE

TITLE

Club Management System

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TABLE OF CONTENTS

1. Introduction

The Football Club Management Database System is a comprehensive solution for efficient club operations. It centralizes player details with other employees as well as other information. The system enhances decision-making of the administration or other body of the club t. It ensures compliance, transparency, and security, providing flow of data of the club and predict some future outcome.

2. Case Study

In the world of club football, a club has a unique name, license no, club valuation (considered as 5 times multiple of total club asset), and country of origin. The club might participate in multiple leagues based on their country of origin for the local leagues. But for participating in the regional leagues, they must be ranked top in their local leagues. A club management system stores information about the club, which leagues they are eligible to play, and their present rank in every individual league.

In a club, there must be many players. A player might play in multiple positions. The system stores the details of the players like position, jersey number, physical state, contract expiration date, number of matches. A club might have many organizations to become partners with. Some of them are sponsors, technology partners, kit suppliers, merchandise and so on. The system stores the name, category, signing date, expiration date, and fund details of the partners.

The players are also employees of the club. The system also stores the information about other employees like the staff and admins. There can be diverse types of staff such as coaching staff, medical staff, working staff. In the admins there must be one team director, one team manager, and other officials. In the management system, it stores employee’s ID, salary, name, date of birth, address, phone number, and joining date.

A club has personal assets such as team vehicles, stadium, exercise equipment, residences. In the management system it always stores the asset id, name, category, quantity & value of the assets.

One club might have many glories in its history. As the count of their achievement, the system also stores information about all the achievements of the club. In the system's database, there is the category of the awards, name of achievement, achievement date, event description, and place of the event.

A club at least owned by one owner. But there can also be multiple owners or investors. The database system also stores information about the shareholders of the club with the name and percentage of share in the club & contact information. Investors can be individuals, or it also can be any company.

3. ER Diagram

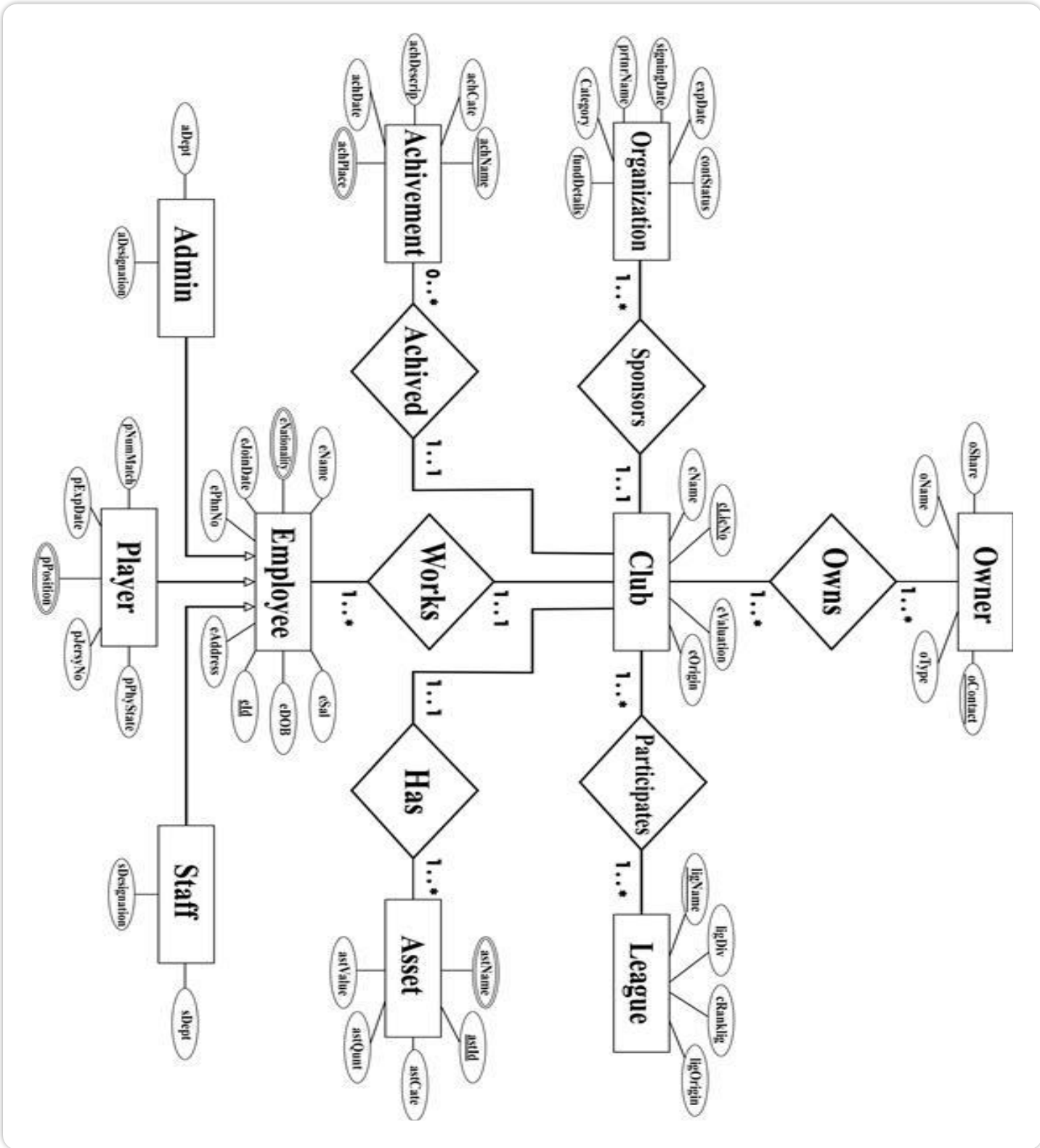


Image 3.1:ER Diagram of Case Study

4. Normalization

4.1. Owns

4.1.1. UNF

oShare, oName, oType, oContact, cName, cLicNo, cValuation, cOrigin

4.1.2. 1NF

oshare, oName, oType, oContact, cName, cLicNo, cValuation, cOrigin

4.1.3. 2NF

1) oShare, oName, oType, oContact(pk)
2) cName, cLicNo(pk), cValuation, cOrigin
3) cLicNO(pk),oContact(fk)

4.1.4. 3NF

Same as 2NF

4.2. Participates

4.2.1. UNF

cName, cLicNo, cValuationk, cOrigin, LigName, LigDiv, cRanking, LigOrigin

4.2.2. 1NF

cName, cLicNo, cValuationk, cOrigin, LigName, LigDiv, cRanking, LigOrigin

4.2.3. 2NF

1) LigName(pk), LigDiv, cRanaking, LigOrigin
2) cName, cLicNo(pk), cValuation, cOrigin
3) LigName(pk), cLicNo(fk)

4.2.4. 3NF

Same as 2NF

4.3. Sponsers

4.3.1. UNF

cName, cLicNo, cValuation, cOrigin, cValuation, cOrigin, contStatus, expDate, signingDate, prtnrName,Category, fundDetails

4.3.2. 1NF

cName, cLicNo, cValuation, cOrigin, cValuation, cOrigin, contStatus, expDate, signingDate, prtnrName,Category, fundDetails

4.3.3. 2NF

1) prtnrName(pk), contStatus, expDate, signingDate, Category, fundDetails, cLicNo(fk).
2) cName, cLicNo(pk), cValuation, cOrigin.

4.3.4. 3NF

Same as 2NF

4.4. Has

4.4.1. UNF

cName, cLicNo, cValuation, cOrigin, astName, astID, astCate, astQuant, astValue

4.4.2. 1NF

cName, cLicNo, cValuattion, cOrigin, astName, astID,astCate, astQuant, astValue

4.4.3. 2NF

1) astName, astID(pk), astCate, astQuant, astValue, cLicNo(fk)
2) cName, cLicNo(pk), cValuation, cOrigin

4.4.4. 3NF

Same as 2NF

4.5. Achieved

4.5.1. UNF

achName, achCate, achDesc, achDate, achPlace, cName, cLicNo, cValuation, cOrigin

4.5.2. 1NF

achName, achCate, achDesc, achDate, achPlace, cName, cLicNo, cValuation, cOrigin

4.5.3. 2NF

1) achName(pk), achCate, achDesc, achDate, achPlae, cLicNou(fk)
2) cName,cLicNo(pk),cValuation, cOrigin, LigName,LigDiv

4.5.4. 3NF

Same as 2NF

4.6. Works

4.6.1. UNF

eID, eName, eNationality, eJoinDate, eSal, eDOB, ePhnNo, eAddress, aDept, aDesignation, pNumberMatch, pExpDate, pPosition, pJerseyNo, aPhyState, sDept, SDesignation, cLicNo, cValuation, cName, cOrigin

4.6.2. 1NF

eID, eName, eNationality, eJoinDate, eSal, eDOB, ePhnNo, eAddress, aDept, aDesignation, pNumberMatch, pExpDate, pPosition, pJerseyNo, aPhyState, sDept, SDesignation, cLicNo, cValuation, cName, cOrigin

4.6.3. 2NF

1) eID(pk),eName,eNationality,eJoinDate,eSal,eDOB,ePhnNo,address, cLicNo(fK). [employee]
2) eID(pk),pNumbeMatch,pExpDate,pPostion,pJerseyNo, pPhyState. [player]
3) eID(Pk),sDept, sDesignation. [staff]
4) eID(pk),aDept, aDesignation. [admin]
5) cName, cLicNo(pk), cValuation, cOrigin.[club]

4.6.4. 3NF

Same as 2NF

5. Finalization

1) oName, oShare, oType, oContact(pk). [owner]
2) cName, cLicNo(pk), cValuation, cOrigin. [club]
3) cLicNo(pk), oContact(fk). [owns]
4) prtnrName(pk), contStatus, expDate, signingDate, Category, fundDetails, cLicNo(fk). [organization]
~~5) cName, cLicNo(pk), cValuation, cOrigin. [club]~~
6) ligName(pk), ligDiv, cRanking, LigOrigin. [league]
~~7) cName, cLicNo(pk), cValuation, cOrigin. [club]~~
8) cLicNo(pk), ligName(fk). [participates]
9) astName,astId(pk),astCate,astQuant,astValue,cLicNo(fk). [asset]
~~10) cName, cLicNo(pk), cValuation, cOrigin. [club]~~
11) achName(pk), achCate, achDesc, achDate, achePlace, cLicNo(fk). [achievement]
~~12) cName, cLicNo(pk), cValuation, cOrigin. [club]~~
13) eID(pk), eName,eNationality, eJoinDate,eSal,eDOB,ePhnNo,address, cLicNo(fK). [employee]
14) eID(pk), pNumbeMatch, pExpDate, pPostion, pJerseyNo, pPhyState. [player]
15) eID(Pk), sDept, sDesignation. [staff]
16) eID(pk), aDept, aDesignation. [admin]
~~17) cName, cLicNo(pk), cValuation, cOrigin.[club]~~

6. Table Creation

6.1. Owner

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Save

```
create table owner (oName varchar(20), oShare number(6), oType varchar(15), oContact varchar(50) primary key)
describe owner
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **OWNER**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
OWNER	ONAME	Varchar2	20	-	-	-	✓	-	-
	OSHARE	Number	-	6	0	-	✓	-	-
	OTYPE	Varchar2	15	-	-	-	✓	-	-
	OCONTACT	Varchar2	50	-	-	1	-	-	-

1 - 4

Image 3.1: commnand to create owner table and description of the created table

6.2.Club

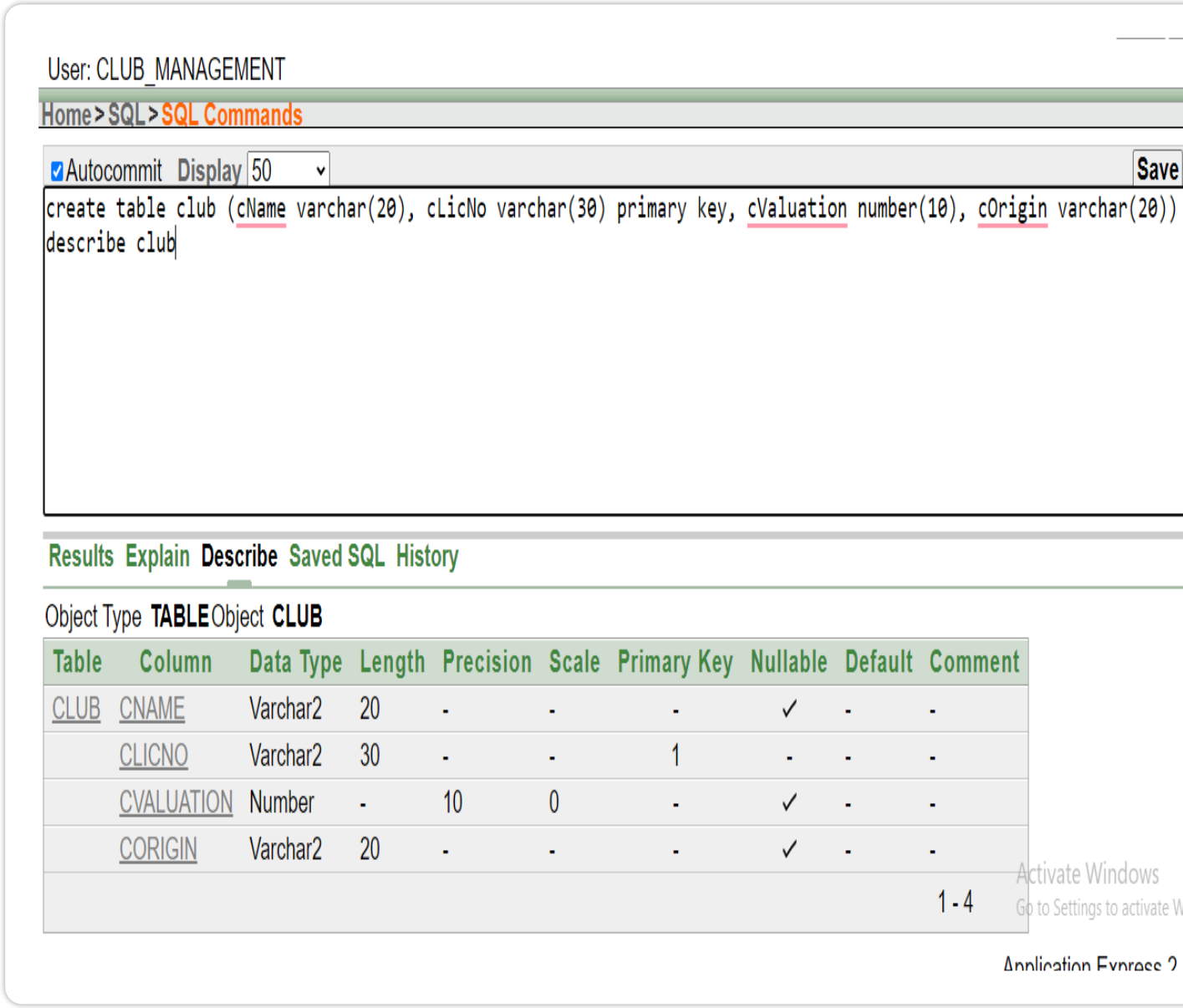


Image 6.2.1: commnand to create owner club and description of the created table

6.3.Owns

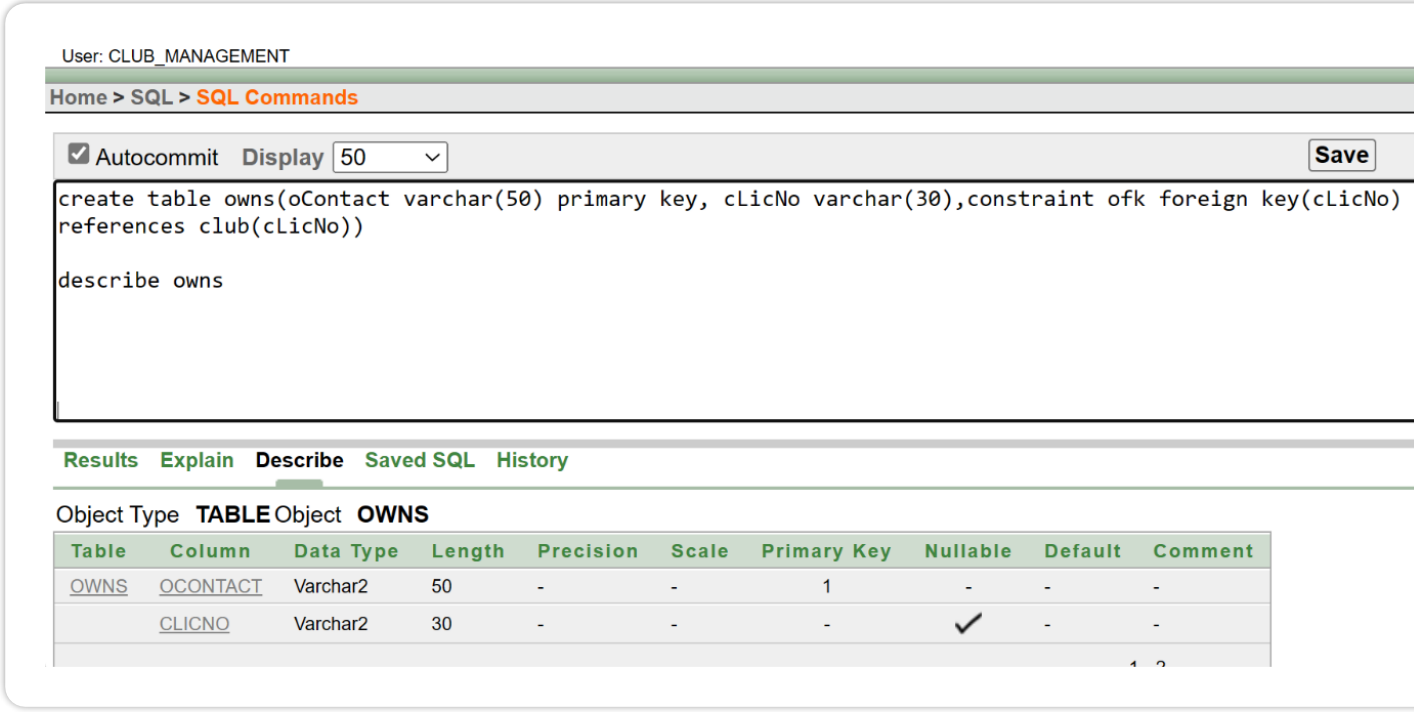


Image 6.3.1: commnand to create owns table and description of the created table

6.4.Organization

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Save Run

```
create table organization (prtnrName varchar(20) primary key, contStatus varchar(15), expDate date , signingDate date, Category
varchar (20), fundDetails number(15), cLicNo varchar (30), constraint cfk foreign key (cLicNo) references club(cLicNo))

describe organization
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **ORGANIZATION**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ORGANIZATION	PRTNRNAME	Varchar2	20	-	-	1	-	-	-
	CONTSTATUS	Varchar2	15	-	-	-	✓	-	-
	EXPDATE	Date	7	-	-	-	✓	-	-
	SIGNINGDATE	Date	7	-	-	-	✓	-	-
	CATEGORY	Varchar2	20	-	-	-	✓	-	-
	FUNDDETAILS	Number	-	15	0	-	✓	-	-
	CLICNO	Varchar2	30	-	-	-	✓	-	-

1 - 7

Image 6.4.1: commnand to create organization table and description of the created table

6.5.League

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Save

```
create table league(ligName varchar(20) primary key, ligDiv varchar(15), cRanking number(5), LigOrigin varchar(15))
describe league
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **LEAGUE**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
LEAGUE	LIGNAME	Varchar2	20	-	-	1	-	-	-
	LIGDIV	Varchar2	15	-	-	-	✓	-	-
	CRANKING	Number	-	5	0	-	✓	-	-
	LIGORIGIN	Varchar2	15	-	-	-	✓	-	-

1 - 4

Image 6.5.1: commnand to create league table and description of the created table

6.6.Participates

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Save Run

```
create table participates (ligName varchar (20) primary key, cLicNo varchar (30), constraint c_prtfk foreign key (cLicNo)
references club(cLicNo))
describe participates
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **PARTICIPATES**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARTICIPATES	LIGNAME	Varchar2	20	-	-	1	-	-	-
	CLICNO	Varchar2	30	-	-	-	✓	-	-

1 - 2

Application Express 2.1.0.00.39

Language: en-us

Image 6.6.1: commnand to create participates table and description of the created table

6.7.Asset

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Save

```
create table asset (astName varchar(20), astId varchar(20) primary key,astCate varchar(15),astQuant number(6),astValue number(15
cLicNo varchar (30), constraint c_astfk foreign key (cLicNo) references club(cLicNo))
describe asset
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **ASSET**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ASSET	ASTNAME	Varchar2	20	-	-	-	✓	-	-
	ASTID	Varchar2	20	-	-	1	-	-	-
	ASTCATE	Varchar2	15	-	-	-	✓	-	-
	ASTQUANT	Number	-	6	0	-	✓	-	-
	ASTVALUE	Number	-	15	0	-	✓	-	-
	CLICNO	Varchar2	30	-	-	-	✓	-	-

1 - 6

Application Express 2.1

Image 6.7.1: commnand to create asset table and description of the created table

6.8.Achievement

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Sav

```
create table achievement (achName varchar(30) primary key, achCate varchar(20), achDesc varchar(50), achDate date, achePlace
varchar(20), cLicNo varchar (30), constraint c_achfk foreign key (cLicNo) references club(cLicNo))
describe achievement
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **ACHIEVEMENT**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
ACHIEVEMENT	ACHNAME	Varchar2	30	-	-	1	-	-	-
	ACHCATE	Varchar2	20	-	-	-	✓	-	-
	ACHDESC	Varchar2	50	-	-	-	✓	-	-
	ACHDATE	Date	7	-	-	-	✓	-	-
	ACHEPLACE	Varchar2	20	-	-	-	✓	-	-
	CLICNO	Varchar2	30	-	-	-	✓	-	-

1 - 6

Image 6.8.1: commnand to create achievement table and description of the created table

6.9.Employee

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Save Run

```
create table employee (eID varchar(20) primary key, eName varchar(20), eNationality varchar(20), eJoinDate date, eSal number(10), eDOB
date, ePhnNo varchar(15), address varchar(30), cLicNo varchar (30), constraint c_empfk foreign key (cLicNo) references club(cLicNo))
describe employee
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **EMPLOYEE**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEE	EID	Varchar2	20	-	-	1	-	-	-
	ENAME	Varchar2	20	-	-	-	✓	-	-
	ENATIONALITY	Varchar2	20	-	-	-	✓	-	-
	EJOINDATE	Date	7	-	-	-	✓	-	-
	ESAL	Number	-	10	0	-	✓	-	-
	EDOB	Date	7	-	-	-	✓	-	-
	EPHNNO	Varchar2	15	-	-	-	✓	-	-
	ADDRESS	Varchar2	30	-	-	-	✓	-	-
	CLICNO	Varchar2	30	-	-	-	✓	-	-

1 - 9

Image 6.9.1: commnand to create employee table and description of the created table

6.10. Player

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50 Save Run

```
create table employee (eID varchar(20) primary key, eName varchar(20), eNationality varchar(20), eJoinDate date, eSal number(10), eDOB
date, ePhnNo varchar(15), address varchar(30), cLicNo varchar (30), constraint c_empfk foreign key (cLicNo) references club(cLicNo))
describe employee
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **EMPLOYEE**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEE	EID	Varchar2	20	-	-	1	-	-	-
	ENAME	Varchar2	20	-	-	-	✓	-	-
	ENATIONALITY	Varchar2	20	-	-	-	✓	-	-
	EJOINDATE	Date	7	-	-	-	✓	-	-
	ESAL	Number	-	10	0	-	✓	-	-
	EDOB	Date	7	-	-	-	✓	-	-
	EPHNNO	Varchar2	15	-	-	-	✓	-	-
	ADDRESS	Varchar2	30	-	-	-	✓	-	-
	CLICNO	Varchar2	30	-	-	-	✓	-	-

1 - 9

Image 6.10.1: commnand to create player table and description of the created table

6.11. Staff

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50

```
create table staff (eID varchar(20) primary key, sDept varchar(15), sDesignation varchar(20))
describe staff
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **STAFF**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
STAFF	EID	Varchar2	20	-	-	1	-	-	-
	SDEPT	Varchar2	15	-	-	-	✓	-	-
	SDESIGNATION	Varchar2	20	-	-	-	✓	-	-

1 - 3

Image 6.11.1: commnand to create staff table and description of the created table

6.12. Admin

User: CLUB_MANAGEMENT

Home > SQL > SQL Commands

Autocommit Display 50

```
create table admin (eID varchar(20) primary key, aDept varchar(15), aDesignation varchar(20))
describe admin
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **ADMIN**

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Commer
ADMIN	EID	Varchar2	20	-	-	1	-	-	-
	ADEPT	Varchar2	15	-	-	-	✓	-	-
	ADESIGNATION	Varchar2	20	-	-	-	✓	-	-

1 - 3

Image 6.12.1: commnand to create own table and description of the created table

7. Value Insertion

7.1. Owner

Results | Explain | Describe | Saved SQL | History

ONAME	OSHARE	OTYPE	OCONTACT
John Doe	50	Individual	john825@yahoo.com
ABC Corporation	20	Investor	info@abc.com
Taylor Swift	30	Individual	taylor@gmail.com

3 rows returned in 0.06 seconds CSV Export

Image 7.1.1: owner table values.

7.2. Club

CNAME	CLICNO	CVALUATION	CORIGIN
AIUB FC	123aiubfc456	4800000000	Dhaka, Bangladesh

1 rows returned in 0.04 seconds CSV Export

Image 7.2.1: club table values.

7.3.Owns

Results Explain Describe Saved SQL History

OCONTACT	CLICNO
john825@yahoo.com	123aiubfc456
taylor@gmail.com	123aiubfc456
info@abc.com	123aiubfc456

3 rows returned in 0.02 seconds CSV Export

Image 7.3.1: Owns table values.

7.4.Organization

PRTNRNAME	CONTSTATUS	EXPDATE	SIGNINGDATE	CATEGORY	FUNDDETAILS	CLICNO
NIKE	Pending	31-DEC-25	01-JAN-24	Kit Sponsor	2500000	123aiubfc456
Evaly	Expired	01-DEC-22	31-DEC-22	Kit Sponsor	100000	123aiubfc456
Addidas	Active	31-DEC-23	01-JAN-23	Jersy Sponsor	2000000	123aiubfc456
Daraz	Active	31-JUL-24	01-JUL-23	Jersy Sponsor	500000	123aiubfc456

4 rows returned in 0.00 seconds CSV Export

Image 7.4.1: Organization table values..

7.5.League

LIGNAME	LIGDIV	CRANKING	LIGORIGIN
DPL (Dhaka Premiere League)	Division-4	1	Dhaka, Bangladesh
UCL (University Club League)	Division-1	1	Dhaka, Bangladesh
PUL (Privet University League)	Division-2	1	Dhaka, Bangladesh

3 rows returned in 0.00 seconds CSV Export

Image 2: League table values.

7.6.Participates

LIGNAME	CLICNO
DPL (Dhaka Premiere League)	123aiubfc456
UCL (University Club League)	123aiubfc456
PUL (Privet University League)	123aiubfc456

3 rows returned in 0.00 seconds CSV Export

Image 7.6.1: Participates table values.

7.7.Asset

ASTNAME	ASTID	ASTCATE	ASTQUANT	ASTVALUE	CLICNO
Youth Academy	AST003	Infrastructure	2	650000	123aiubfc456
Stadium	AST001	Infrastructure	1	1000000	123aiubfc456
Team Bus	AST002	Vehicle	8	400000	123aiubfc456

3 rows returned in 0.00 seconds CSV Export

Image 7.7.1: Asset table values.

7.8.Achievement

ACHNAME	ACHCATE	ACHDESC	ACHDATE	ACHEPLACE	CLICNO
PUL21	PUL Champion	Season Champion	24-MAR-21	Sylhet Stadium	123aiubfc456
UCL23	UCL Champion	Season Champions	10-JUN-23	AIUB Stadium	123aiubfc456
DPL19	DPL Champion	Season RunnerUp	18-AUG-19	Mirpur Stadium	123aiubfc456

3 rows returned in 0.02 seconds CSV Export

Image 7.8.1: Achievement table values.

7.9. Employee

EID	ENAME	ENATIONALITY	EJOINDATE	ESAL	EDOB	EPHNNO	ADDRESS	CLICNO
EMP003	J. Alvarez	Argentina	10-JUN-22	45000	31-JAN-00	659874231	Kuril	123aiubfc456
EMP004	Sheikh Mansour	UAE	01-JAN-19	100000	20-NOV-70	9876543210	Gulshan	123aiubfc456
EMP005	Walker	England	20-DEC-20	480000	28-MAY-90	1478523690	Khilkhet	123aiubfc456
EMP006	Tony Book	England	30-JUN-21	350000	04-SEP-34	3698521470	Banani	123aiubfc456
EMP007	Xavier Mancisidor	Spain	01-JUL-23	300000	24-MAY-70	7412589630	Nikunja	123aiubfc456
EMP008	Txiki Begiristain	Spain	29-OCT-22	550000	12-AUG-64	9874563210	Mirpur	123aiubfc456
EMP009	Jamal Bhuyian	Bangladesh	01-FEB-23	-	10-APR-90	-	Airport	123aiubfc456
EMP010	Ferran Soriano	Spain	01-SEP-22	-	-	-	Uttara	123aiubfc456
EMP001	Pep Guardiola	Spain	01-JAN-19	60000	18-JAN-71	1234567890	koyla bari	123aiubfc456
EMP002	E. Haland	Norway	10-JUN-22	500000	21-JUL-00	215698741	Kuril	123aiubfc456

10 rows returned in 0.00 seconds CSV Export

Image 7.9.1: Employee table values.

7.10.Player

EID	PNUMBEMATCH	PCONTEXPDATE	PPOSTION	PJERSEYNO	PPHYSTATE
emp003	35	31-DEC-27	ST	19	Fit
EMP009	101	31-DEC-27	MF	06	Fit
emp002	35	30-NOV-26	CF	09	Fit
emp005	377	30-NOV-28	RB	02	Fit

Image 7.10.1: Player table values.

7.11.Staff

EID	SDEPT	SDESIGNATION
emp001	Coaching	Coach
emp007	Coaching	Goal Keeping Coach

2 rows returned in 0.00 seconds CSV

Image 7.11.1: Staff table values.

7.12. Admin

EID	ADEPT	ADESIGNATION
emp010	Management	Manager
emp006	Board of Director	Director
emp004	Board of Director	President

Image 7.12.1: Admin table values.

8. Query Test

8.1. Simple Query

Question:

Retrieve the employee id, names, date of birth and nationality from employee table.

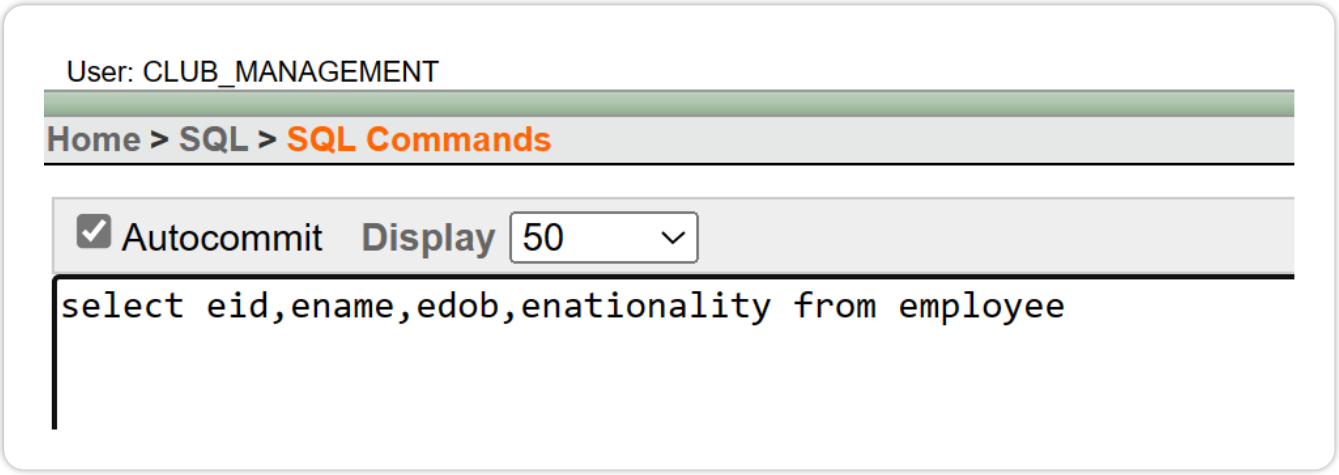


Image 8.1.1: Command to make simple query.

EID	ENAME	EDOB	ENATIONALITY
EMP003	J. Alvarez	31-JAN-00	Argentina
EMP004	Sheikh Mansour	20-NOV-70	UAE
EMP005	Walker	28-MAY-90	England
EMP006	Tony Book	04-SEP-34	England
EMP007	Xavier Mancisidor	24-MAY-70	Spain
EMP008	Txiki Begiristain	12-AUG-64	Spain
EMP009	Jamal Bhuyian	10-APR-90	Bangladesh
EMP010	Ferran Soriano	-	Spain
EMP001	Pep Guardiola	18-JAN-71	Spain
EMP002	E. Haland	21-JUL-00	Norway

10 rows returned in 0.02 seconds CSV Export

Image 8.1.2: Simple Query result

8.2. Single Row function

Question:

Round the employee's salary of the employee with 5% bonus.

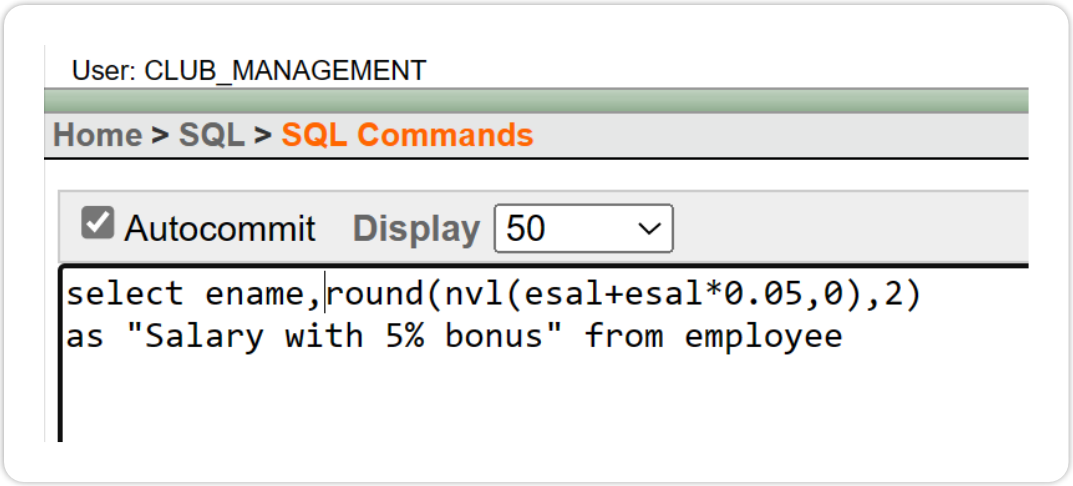
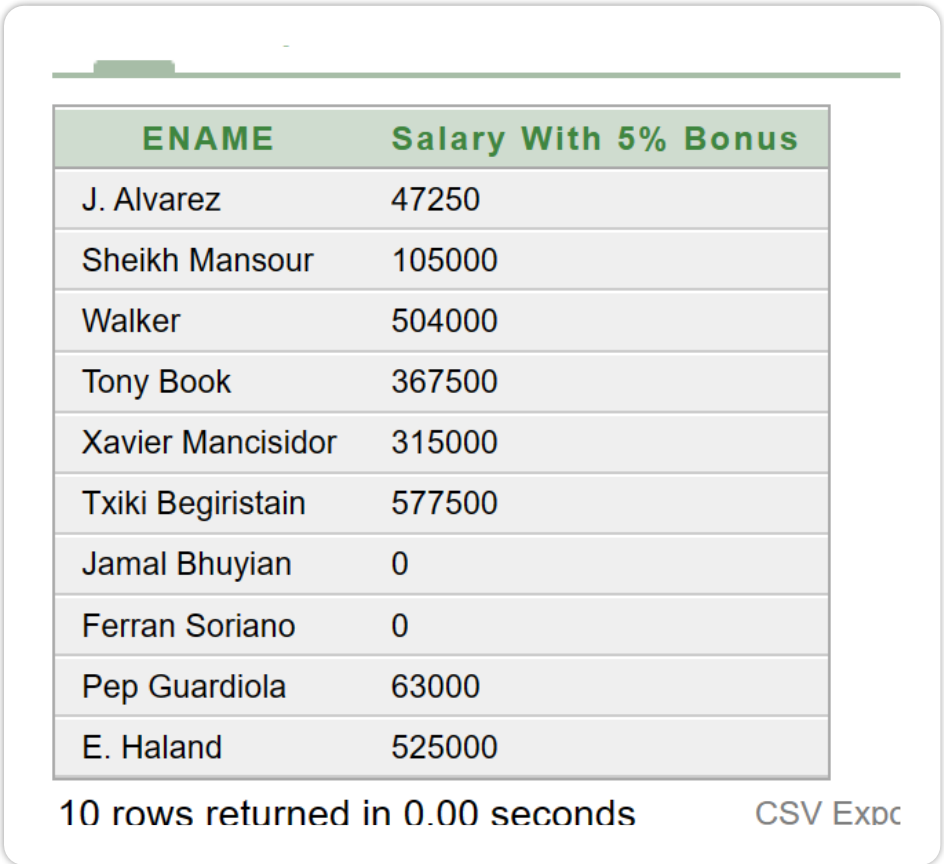


Image 8.2.1: command for single row function



ENAME	Salary With 5% Bonus
J. Alvarez	47250
Sheikh Mansour	105000
Walker	504000
Tony Book	367500
Xavier Mancisidor	315000
Txiki Begiristain	577500
Jamal Bhuyian	0
Ferran Soriano	0
Pep Guardiola	63000
E. Haland	525000

10 rows returned in 0.00 seconds CSV Expc

Image 8.2.1: Single Row Function result

8.3. Aggregation Query

Query:

Show the max valuation of the asset table.

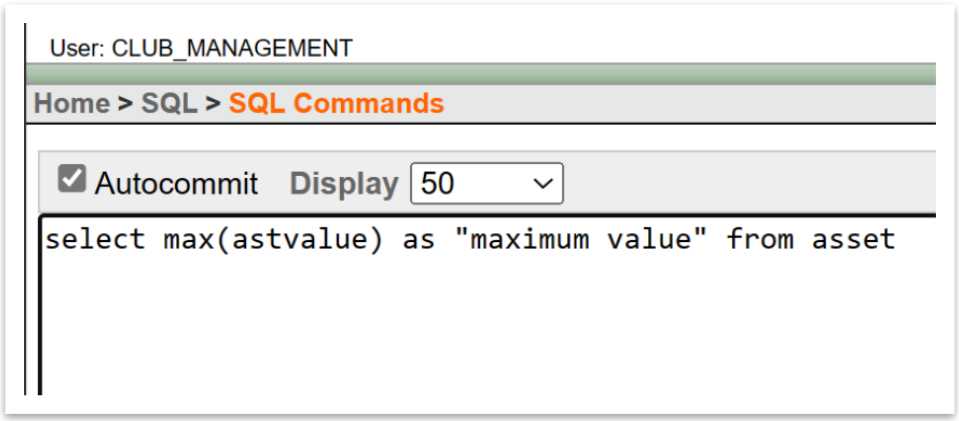


Image 8.3.1: command for aggregation query.

Maximum Value
1000000

Image 8.3.2: Aggregation Query result

8.4. Single Row Subquery

Query:

Show the players with their ID no, name and date of birth who have same nationality as EMP007.

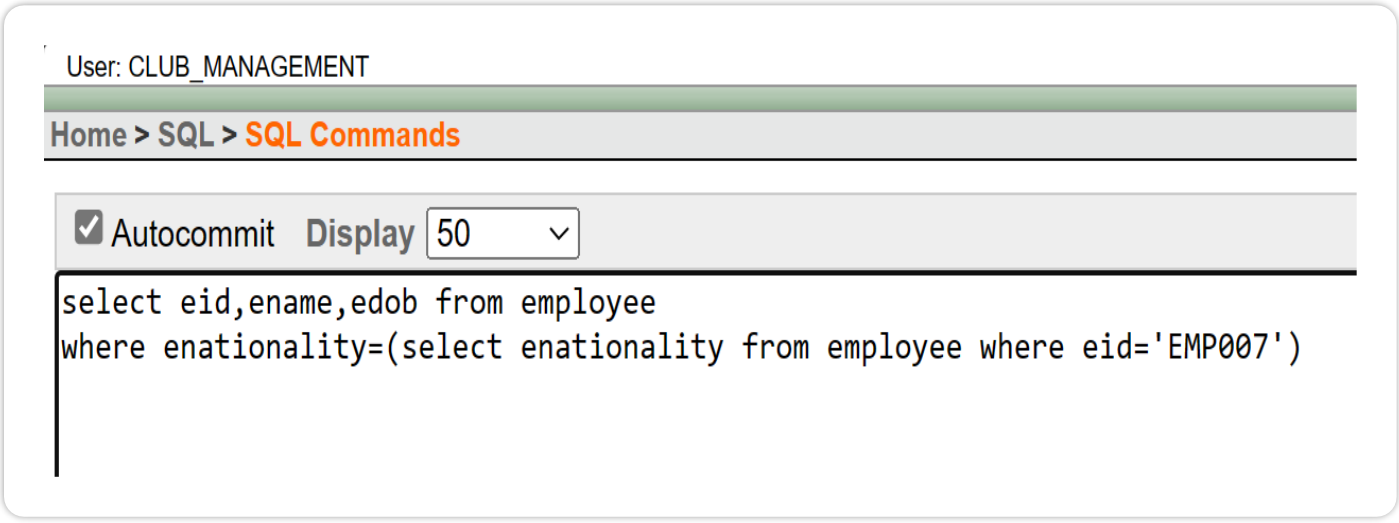
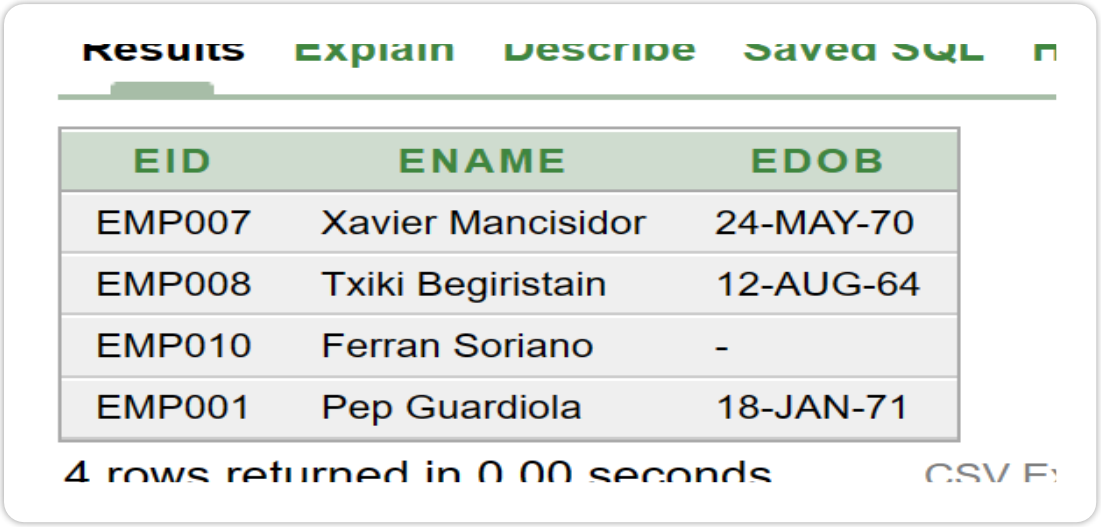


Image 8.4.1: command for single row subquery



EID	ENAME	EDOB
EMP007	Xavier Mancisidor	24-MAY-70
EMP008	Txiki Begiristain	12-AUG-64
EMP010	Ferran Soriano	-
EMP001	Pep Guardiola	18-JAN-71

Image 8.4.2: Single Row Subquery result

8.5.Multiple Row Subquery

Query:

Show the prtnrname, category who have less fund than average asset value.

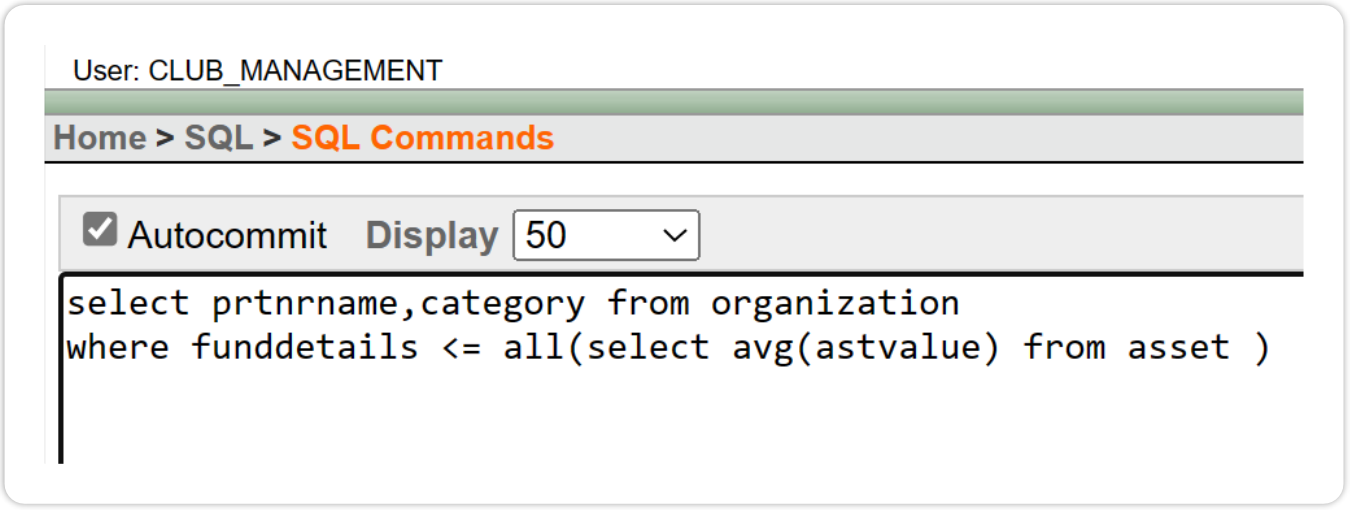


Image 8.5.1: command for multiple row subquery

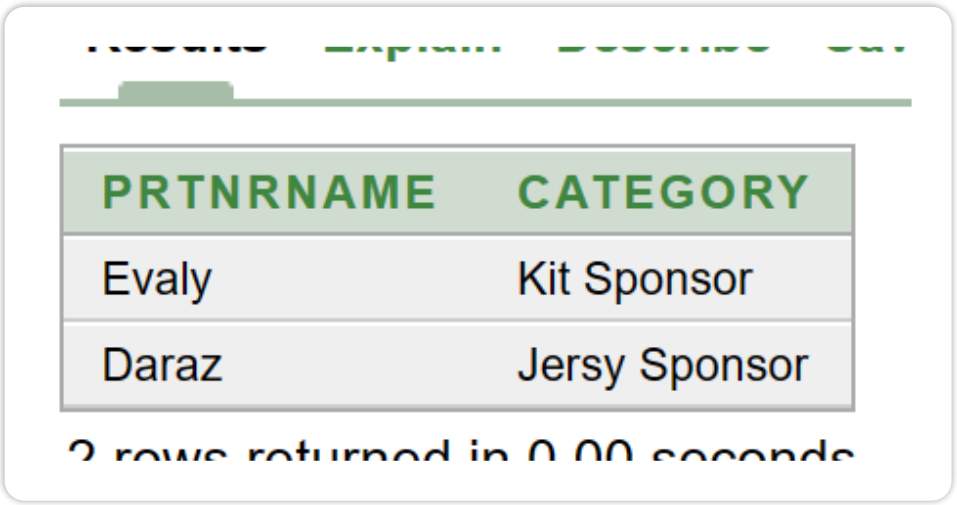


Image 8.5.2: multiple row subquery result

8.6. Joining

8.6.1. Non-Equijoin

Query:

Show the players with their name, physical state and position.

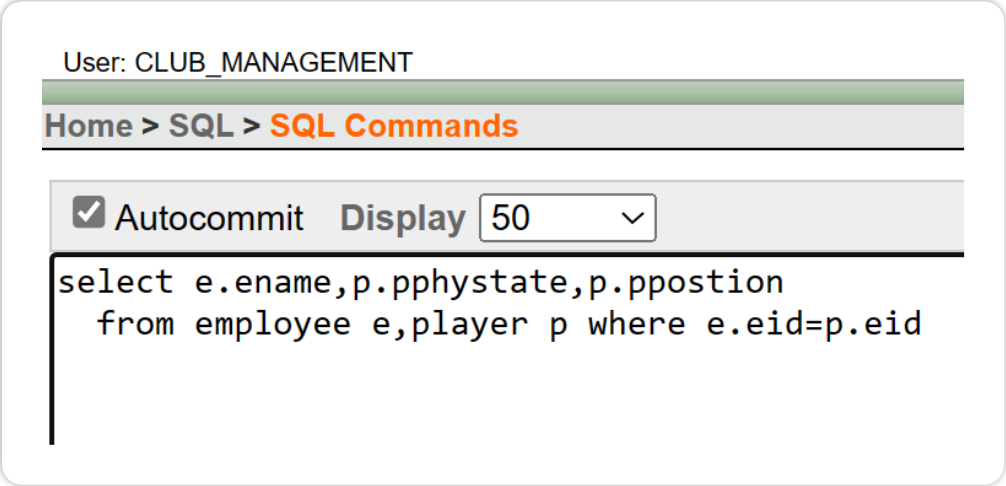
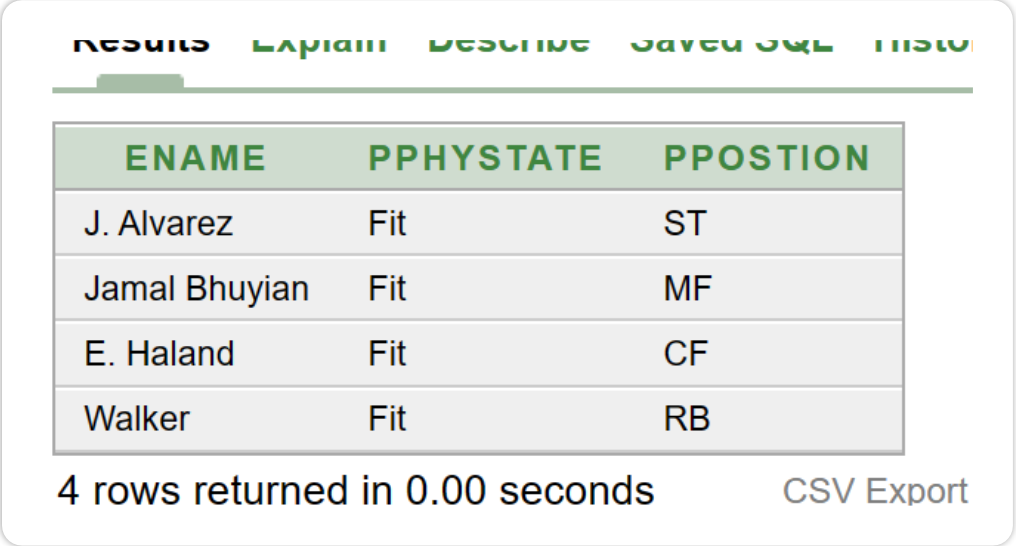


Image 8.6.1.1: command for non-equijoin



ENAME	PPHYSTATE	PPOSTION
J. Alvarez	Fit	ST
Jamal Bhuyian	Fit	MF
E. Haland	Fit	CF
Walker	Fit	RB

4 rows returned in 0.00 seconds CSV Export

Image 8.6.1.2: Non-Equijoin result

8.6.2. Outer join

Query:

Show all employee's name, nationality, and their designation in administration.

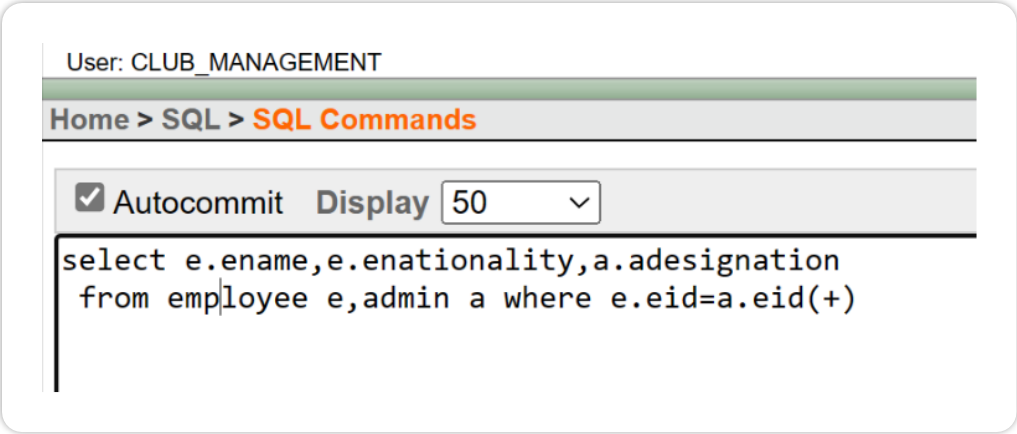


Image 8.6.2.1: command for outer join

ENAME	ENATIONALITY	ADESIGNATION
J. Alvarez	Argentina	-
Sheikh Mansour	UAE	President
Walker	England	-
Tony Book	England	Director
Xavier Mancisidor	Spain	-
Txiki Begiristain	Spain	-
Jamal Bhuyian	Bangladesh	-
Ferran Soriano	Spain	Manager
Pep Guardiola	Spain	-
E. Haland	Norway	-

Image 8.6.2.2: outer join result

8.7. View

Query 1:

Create a simple view of employee name, salary, and their age.

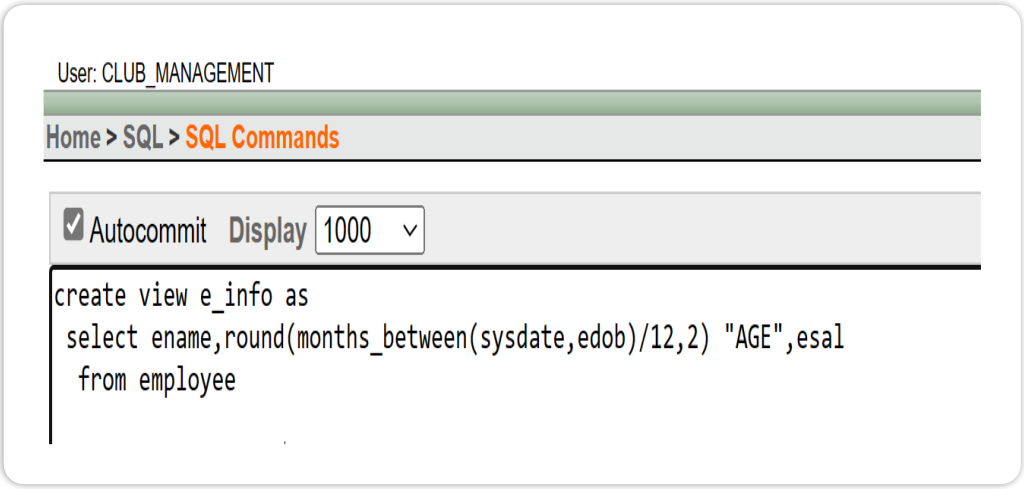
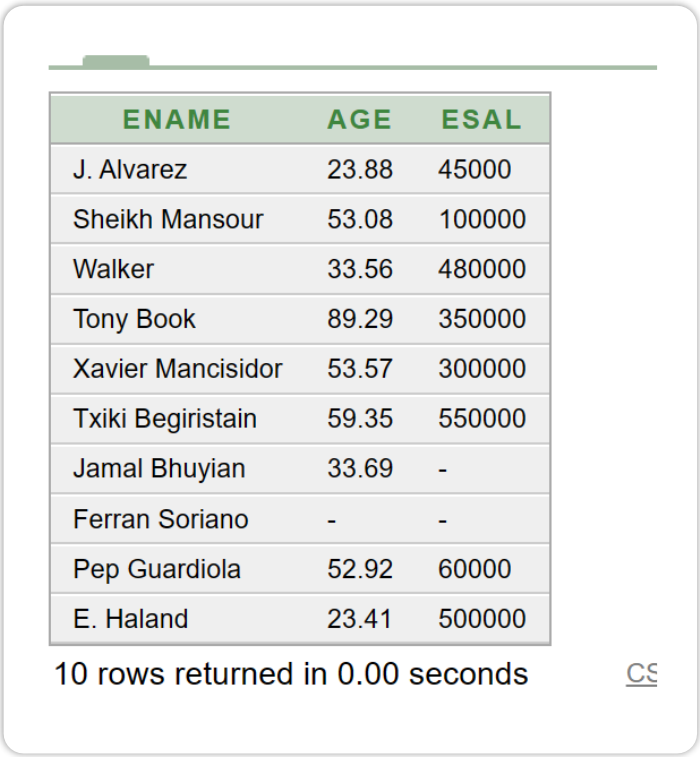


Image 8.7.1: command for simple view



ENAME	AGE	ESAL
J. Alvarez	23.88	45000
Sheikh Mansour	53.08	100000
Walker	33.56	480000
Tony Book	89.29	350000
Xavier Mancisidor	53.57	300000
Txiki Begiristain	59.35	550000
Jamal Bhuyian	33.69	-
Ferran Soriano	-	-
Pep Guardiola	52.92	60000
E. Haland	23.41	500000

10 rows returned in 0.00 seconds

Image 8.7.2: simple view result

Query 2:

Create a complex view as player info of player name, join date, position, and physical state.

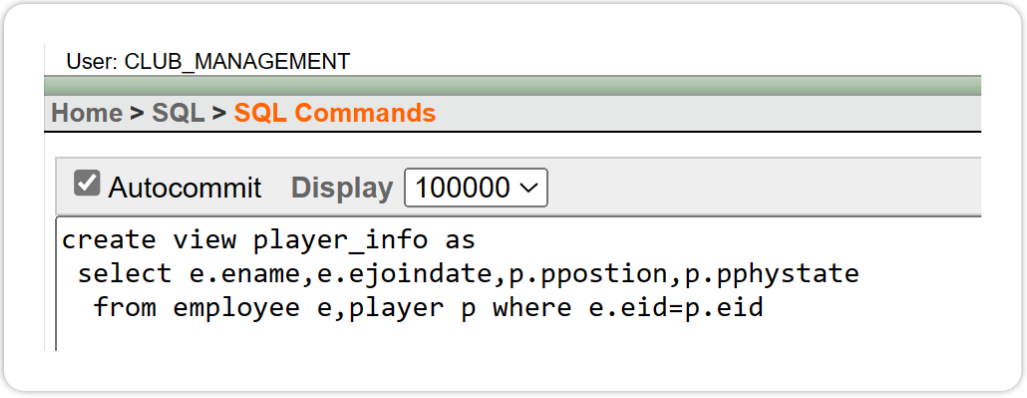
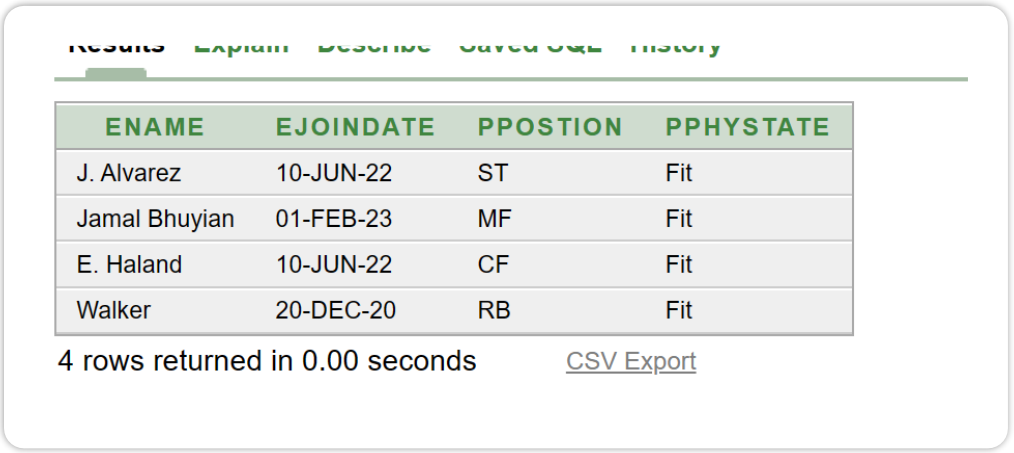


Image 8.7.3: command for complex view



ENAME	EJOINDATE	PPOSTION	PPHYSTATE
J. Alvarez	10-JUN-22	ST	Fit
Jamal Bhuyian	01-FEB-23	MF	Fit
E. Haland	10-JUN-22	CF	Fit
Walker	20-DEC-20	RB	Fit

4 rows returned in 0.00 seconds CSV Export

Image 8.7.4: Complex view result

9. Database Connection

9.1.MD.LUTFUL KABIR (22-49135-3)

1) Needed tools.

MySQL Java Connector: Downloaded the MySQL Java Connector JAR file from the official MySQL website. This connector enables Java programs to interact with MySQL databases.
XAMPP: XAMPP is a development environment that includes Apache, MariaDB (MySQL replacement), Perl, and PHP. Install XAMPP to create a local server for testing the database operations.

2) Setting up the environment

- Installed XAMPP and started both the Apache and MySQL services through the XAMPP control panel. Accessed the MySQL admin panel to manage my databases.
- Launched the MySQL admin panel.
- Created a new database named club_management that will be used in this project.
- Inside the newly created database, one table named employee with relevant columns to store data, also Defined data types.
- Populated the tables with relevant data to perform operations on.

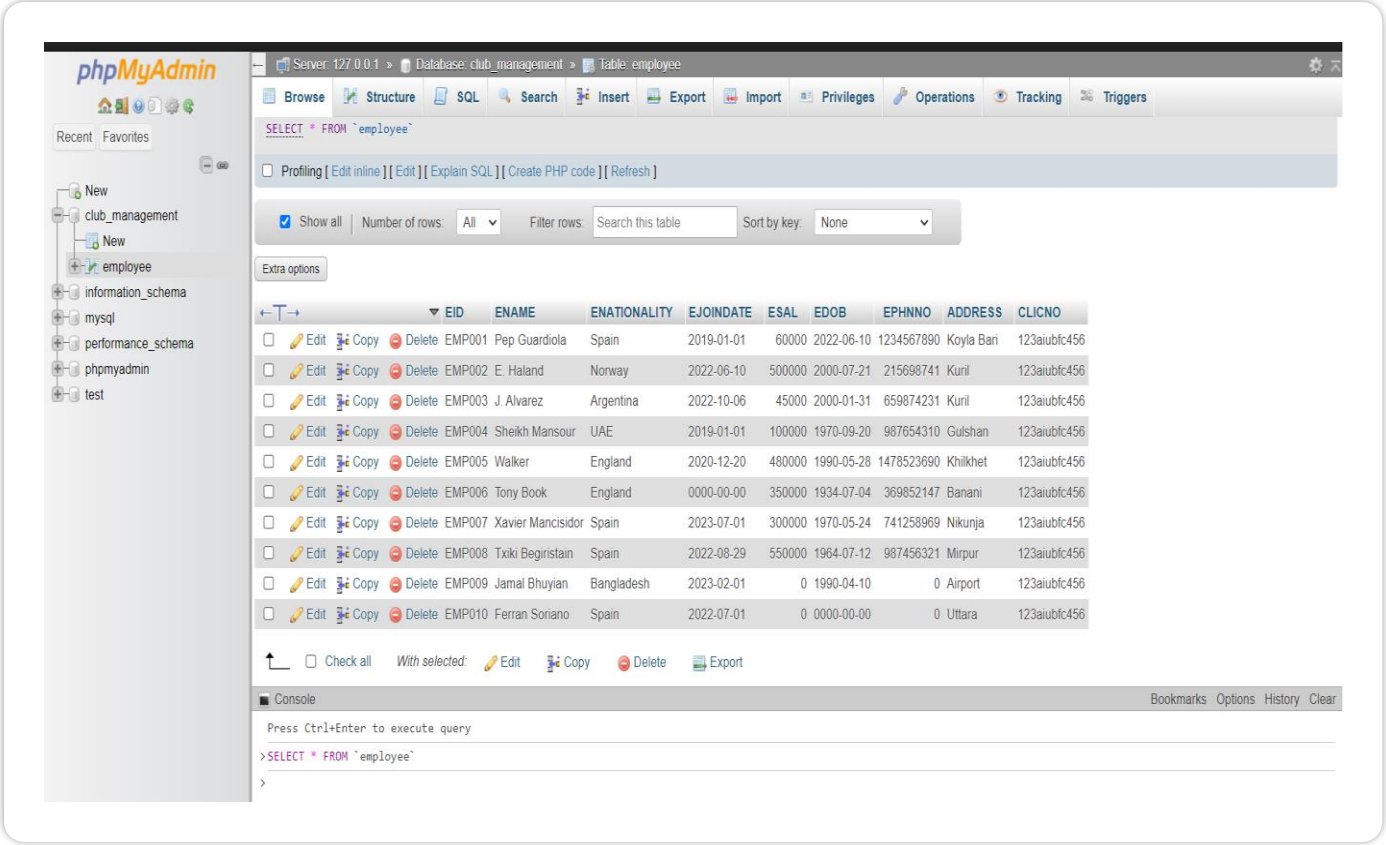


Image 9.1.1: created table in SQL PhpMyAdmin

3) Writing the java code

- Chosen an Integrated Development Environment (IDE) of my choice. I used visual studio code for Java development.
- In my Java code, loaded the MySQL Java Connector driver by importing the JAR file into my project and using the **Class.forName()** method to register it.
- Used the **DriverManager.getConnection()** method to establish a connection to my MySQL database by providing the appropriate URL, username, and password. My username was root and there was no password set.
- After establishing the connection, created a **Statement** or **CreatedStatement** object to execute SQL queries.
- Used the created statement to execute SQL queries like SELECT, INSERT, UPDATE, or DELETE. Captured the necessary results.
- Used the **ResultSet** object to retrieve and process the data.
- Performed necessary operations on the data retrieved from the database.

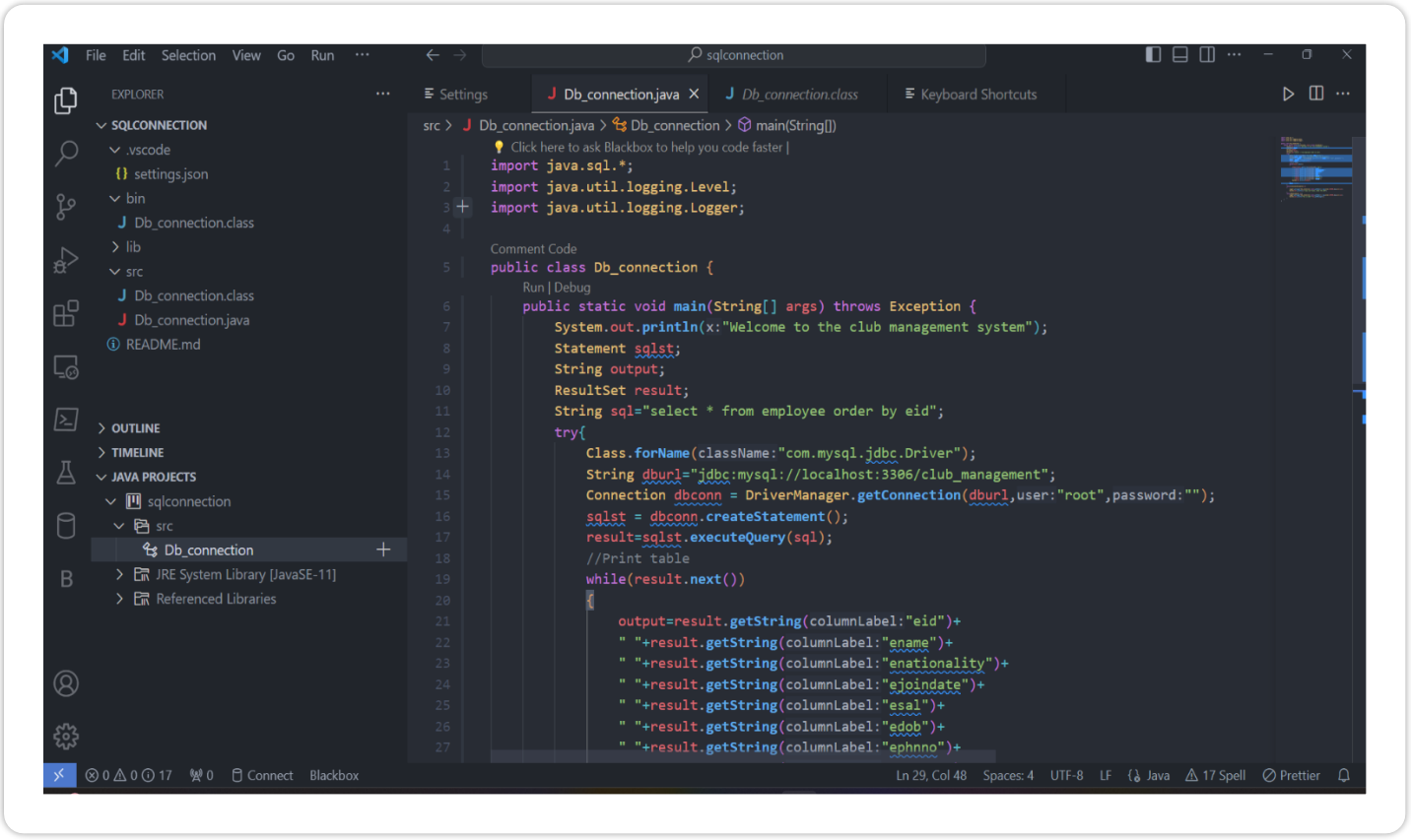


Image 9.1.2: java connection with SQL

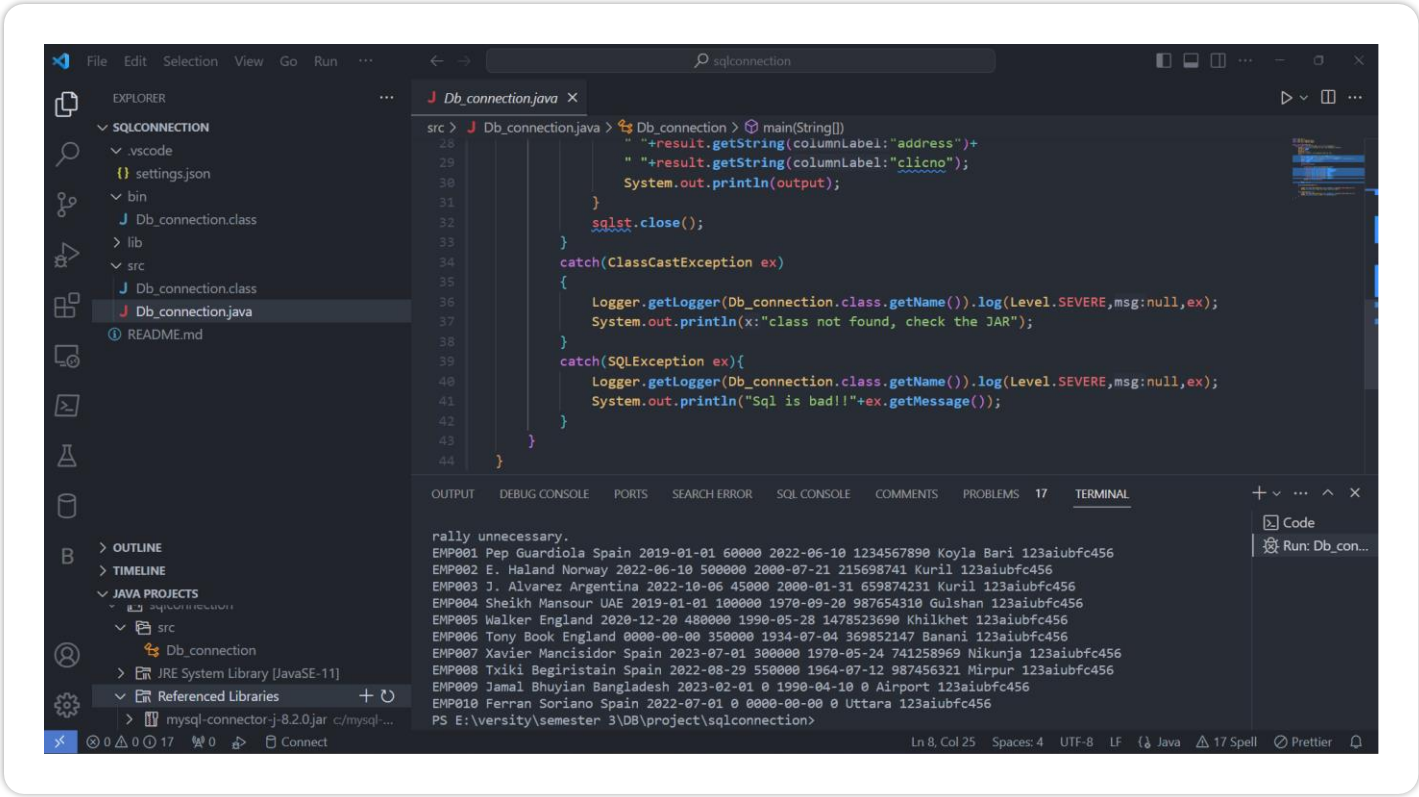


Image 9.1.3: Result of connected SQL with java

4) Close resources

After executing the operations, ensured to close the ResultSet, Statement, and Connection objects using the **.close()** method to release resources properly.

9.2.MD. JUBAER AMIN JISHAN (22-49265-3)

1. Tools:
   a) Connector: Download mysql java connector JAR file from mysql website for creating interactions of java programs with the database.
   b) XAMPP: For creating a local server & database testing purpose need to install XAMPP software.
2. Environmental Setup: Install xampp & launch mysql and apache and go to mysql admin panel for creating the database.
3. Connecting Database: Write the java code in any IDE (I used Visual Studio Code). Attach the connector JAR file a reference library. Then launch the programme it will connect with the database & show the data in the terminal.
4. Close: FInally close the connection

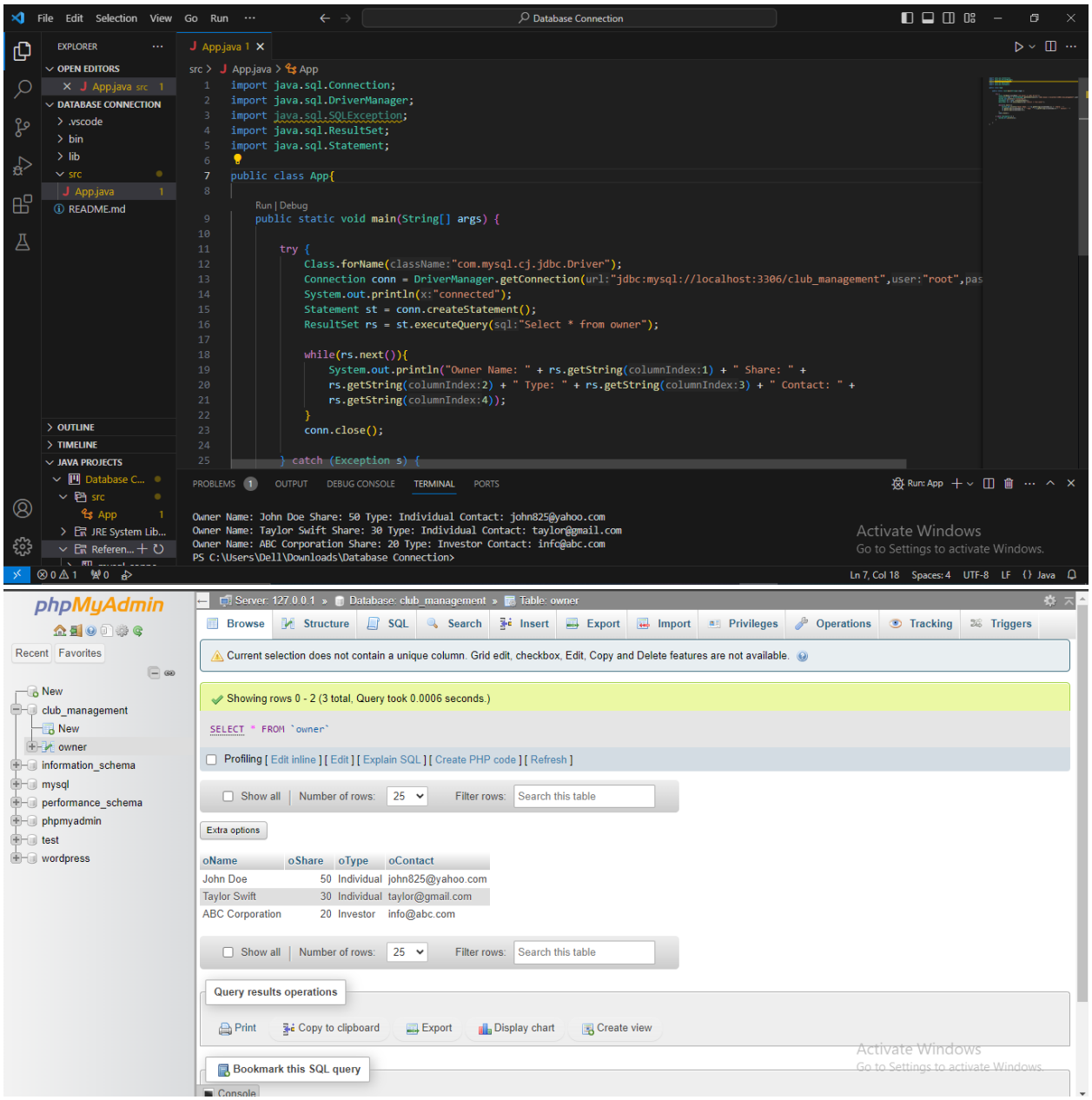


Image 9.2.1: Java connection

Conclusion

In essence, the Club Management Database System marks an important role for managing a club information. Its unparalleled adaptability is finely tuned to optimize the data structuring according to the club requirement. As a result, DBMS becomes a catalyst for unburdening leaders from administrative complexities, allowing them to channel their energies towards strategic initiatives that propel the club forward.

Furthermore, DBMS operates within a secure environment, safeguarding the confidentiality of critical data. The provision of real-time access and insightful reporting amplifies the decision-making capabilities of club leaders, empowering them to navigate challenges with clarity and precision.

In the broader context, DBML transcends its role as a mere operational tool, it emerges as a transformative force that not only streamlines day-to-day club activities but also cultivates an environment conducive to growth. As clubs navigate the ever-evolving landscape, DBMS positions them strategically for sustained success, providing a robust foundation for enhanced organization, communication, and overall prosperity.