Name- Sarthak Kadam
Class- SYCS-A
Roll no- 5863
Subject- DBMS

ADMISSION CELL SYSTEM

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Mahatma Education Society's

Pillai College of Arts, Commerce & Science

(Autonomous)

Affiliated to University of Mumbai

NAAC Accredited 'A' grade (3 cycles) Best College Award by University of Mumbai

ISO 9001:2015 Certified

CERTIFICATE

This is to certify that Mst. ***Sarthak Kadam*** *Of* ***S.Y B.Sc. C.S. Semester III*** *has completed the Project work in the Subject of* ***Database Management System*** *during the academic year 2022-23 under the guidance of Prof.* ***Sujatha Shahabade*** *being the partial requirement for the fulfillment of the curriculum of* ***Degree of Bachelor of Science in Computer Science, University of Mumbai.***

Place: New Panvel

Date:

Name & Signature of faculty

Name & Signature of external

INTRODUCTION

We all know that the Admission Cell is dedicated to facilitating the admission process ensuring that every deserving student receives justified opportunities based on their credibility. However, aspirants are required to cater to the eligibility criteria in order to ensure a seamless admission.

This ER (Entity Relationship) diagram represents the model of University Admission Management System (Cell). The entity-relationship diagram of University Admission Cell shows all the visual instrument of database tables and the relations between Admission, Subject, University, Degree, etc. It uses structure data and to define the relationships between structured data groups of University Admission Cell functionalities. The main entities of the University Admission Cell are University, Admission, Student, Subject, Course and Degree.

Working of the System:

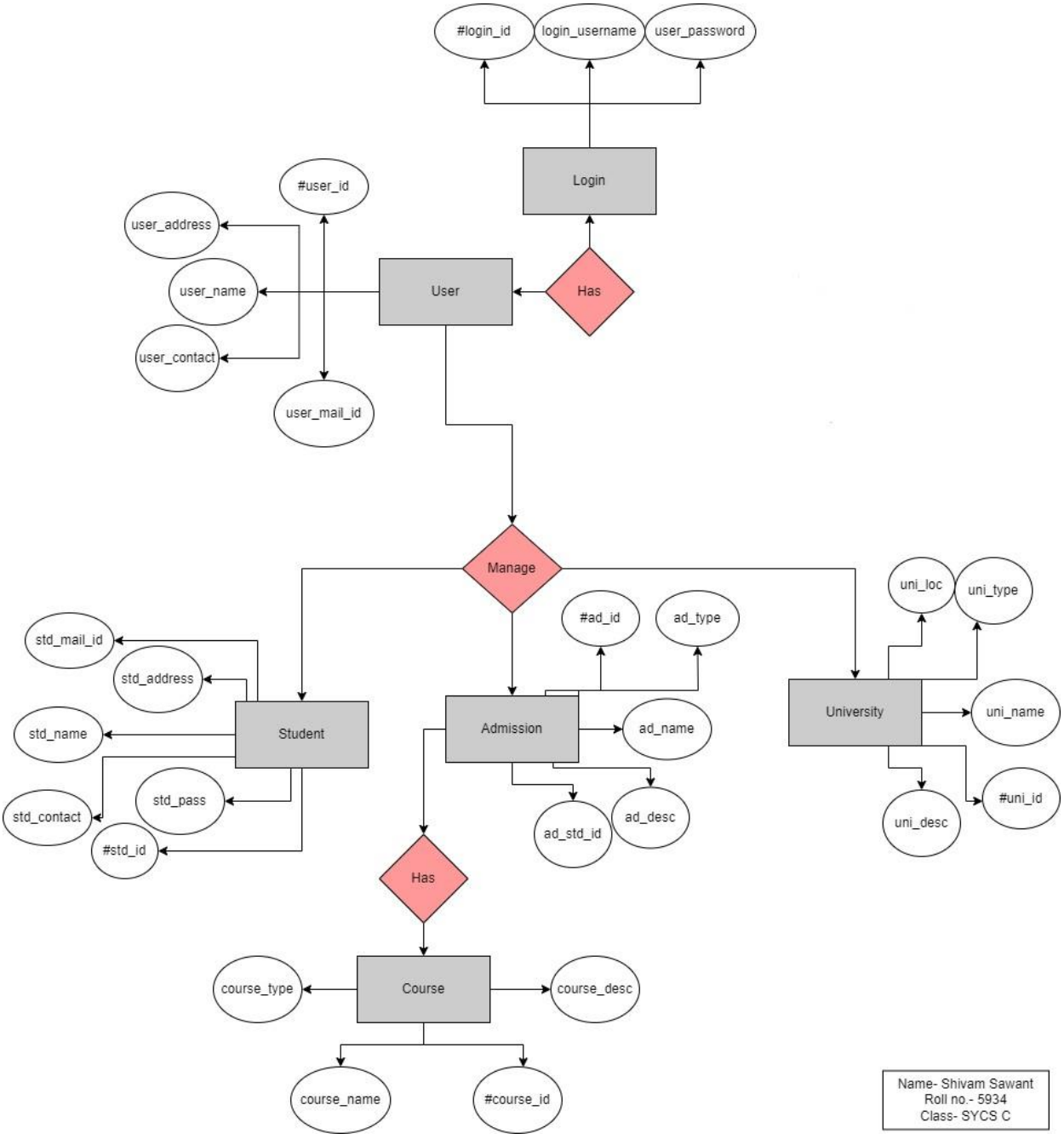
The University Admission Cell works seamlessly which has the following entities (tables):

- **University Entity:** Attributes of University are uni_id, uni_name, uni_type & uni_addr
- **Admission Entity:** Attributes of Admission are adm_id, adm_std_id, adm_name & adm_type
- **Student Entity:** Attributes of Student are std_id, std_clg_id, std_name, std_contact & std_mail
- **Subject Entity:** Attributes of Subject are sb_id, sb_course_id, sb_std_id, sb_name & sb_type
- **Course Entity:** Attributes of Course are course_id, course_std_id, course_name, course_year & course_type

Description of University Admission Management System Database:

- The details of University is store into the University tables respective with all tables.
- Each entity (Degree, Student, Course, Admission, University) contains primary key and unique keys.
- The entity Student, Course has binded with University, Admission entities with foreign key.
- There is one-to-one and one-to-many relationships available between Course, Subject, Degree, University.
- All the entities University, Course, Student, Degree are normalized and reduce duplicacy of records.
- We have implemented indexing on each tables of University Admission Management System tables for fast query execution.

E-R Diagram:


#login_id
login_username
user_password
Login
#user_id
user_address
user_name
user_contact
user_mail_id
User
Has
Manage
uni_loc
uni_type
#ad_id
ad_type
std_mail_id
std_address
std_name
std_contact
std_pass
#std_id
Student
Admission
ad_name
ad_std_id
ad_desc
University
uni_name
#uni_id
uni_desc
Has
course_type
Course
course_desc
course_name
#course_id
Name- Shivam Sawant
Roll no.- 5934
Class- SYCS C

Tables:

1. UNIVERSITY

Attribute	Datatype	Constraint
uni_id	Varchar(5)	PRIMARY KEY
uni_name	Char(20)	-
uni_type	Char(10)	-
uni_addr	Varchar(15)	NOT NULL

2. ADMISSION

Attribute	Datatype	Constraint
adm_id	Varchar(5)	-
adm_std_id	Varchar(5)	PRIMARY KEY
adm_name	Char(20)	-
adm_type	Char(10)	-

3. STUDENT

Attribute	Datatype	Constraint
std_id	Varchar(5)	PRIMARY KEY FOREIGN KEY
std_clg_id	Int	-
std_name	Char(20)	-
std_contact	Number(10)	NOT NULL
std_mail	Varchar(25)	-

4. SUBJECT

Attribute	Datatype	Constraint
sb_id	Varchar(5)	NOT NULL
sb_course_id	Varchar(5)	PRIMARY KEY
sb_std_id	Varchar(5)	FOREIGN KEY
sb_name	Char(20)	-
sb_type	Char(15)	-

5. COURSE

Attribute	Datatype	Constraint
course_id	Varchar(5)	FOREIGN KEY
course_std_id	Varchar(5)	-
course_name	Char(20)	-
course_year	Number(1)	NOT NULL
course_type	Char(15)	-

QUERIES:

- Creating **UNIVERSITRY** table:

```
SQL> create table UNIVERSITY
  2  (uni_id varchar(5) PRIMARY KEY,
  3  uni_name char(20),
  4  uni_type char(10),
  5  uni_addr varchar(15) NOT NULL
  6  );

Table created.

SQL> insert into university values('D01', 'Mumbai', 'State', 'Maharashtra');

1 row created.

SQL> insert into university values('A12', 'Delhi', 'Central', 'New Delhi');

1 row created.

SQL> insert into university values('B20', 'Kolkata', 'State', 'West Bengal');

1 row created.

SQL> insert into university values('F92', 'Banaras', 'Central', 'Uttar Pradesh');

1 row created.

SQL> insert into university values('O07', 'IISC', 'State', 'Karnataka');

1 row created.

SQL> select * from UNIVERSITY;

UNI_I UNI_NAME             UNI_TYPE   UNI_ADDR
----- -------------------- ---------- ---------------
D01   Mumbai               State      Maharashtra
A12   Delhi                Central    New Delhi
B20   Kolkata              State      West Bengal
F92   Banaras              Central    Uttar Pradesh
O07   IISC                 State      Karnataka
```

- Creating **ADMISSION** table:

```
SQL> create table ADMISSION
  2  (adm_id varchar(5),
  3  adm_std_id varchar(5) PRIMARY KEY,
  4  adm_name char (20),
  5  adm_type char(10)
  6  );

Table created.

SQL> insert into admission values('A01', 'S101', 'Saif', 'Regular');

1 row created.

SQL> insert into admission values('A02', 'S102', 'Aman', 'Rolling');

1 row created.

SQL> insert into admission values('A03', 'S103', 'Suraj', 'Early');

1 row created.

SQL> insert into admission values('A04', 'S104', 'Anup', 'Regular');

1 row created.

SQL> insert into admission values('A05', 'S105', 'Sarthak', 'Regular');

1 row created.

SQL> select * from ADMISSION;

ADM_I ADM_S ADM_NAME             ADM_TYPE
----- ----- -------------------- ----------
A01   S101  Saif                 Regular
A02   S102  Aman                 Rolling
A03   S103  Suraj                Early
A04   S104  Anup                 Regular
A05   S105  Sarthak              Regular
```

- Creating **STUDENT** table:

```
SQL> create table STUDENT
  2  (std_id varchar(5) PRIMARY KEY,
  3  constraint stddid foreign key(std_id) references ADMISSION(adm_std_id),
  4  std_clg_id int,
  5  std_name char(20),
  6  std_contact number(10) NOT NULL,
  7  std_mail varchar(25)
  8  );

Table created.

SQL> insert into student values('S101', '1024', 'Saif', 9823745784, 'saif123@gmail.com');

1 row created.

SQL> insert into student values('S102', '2574', 'Aman', 9812665878, 'aman456@gmail.com');

1 row created.

SQL> insert into student values('S103', '5631', 'Suraj', 9934785693, 'srj789@gmail.com');

1 row created.

SQL> insert into student values('S104', '3663', 'Anup', 8293847569, 'anp123@gmail.com');

1 row created.

SQL> insert into student values('S105', '5276', 'Sarthak', 9924248854, 'srth162@gmail.com');

1 row created.

SQL> select * from STUDENT;

STD_I STD_CLG_ID STD_NAME             STD_CONTACT STD_MAIL
----- ---------- -------------------- ----------- -------------------------
S101        1024 Saif                 9823745784 saif123@gmail.com
S102        2574 Aman                 9812665878 aman456@gmail.com
S103        5631 Suraj                9934785693 srj789@gmail.com
S104        3663 Anup                 8293847569 anp123@gmail.com
S105        5276 Sarthak              9924248854 srth162@gmail.com
```

- Creating **SUBJECT** table:

```
SQL> create table SUBJECT
  2  (sb_id varchar(5) NOT NULL,
  3  sb_course_id varchar(5) PRIMARY KEY,
  4  sb_std_id varchar(5),
  5  constraint sbstdid foreign key(sb_std_id) references STUDENT(std_id),
  6  sb_name char(20),
  7  sb_type char(15)
  8  );

Table created.

SQL> insert into subject values('B01', 'SC1', 'S101', 'DBMS', 'Managing');

1 row created.

SQL> insert into subject values('B02', 'SC2', 'S102', 'Java', 'Language');

1 row created.

SQL> insert into subject values('B03', 'SC3', 'S103', 'Html', 'Web Dev');

1 row created.

SQL> insert into subject values('B04', 'SC4', 'S104', 'Alegbra', 'Maths');

1 row created.

SQL> insert into subject values('B05', 'SC5', 'S105', 'Soft Skills', 'Communication');

1 row created.

SQL> select * from SUBJECT;

SB_ID SB_CO SB_ST SB_NAME              SB_TYPE
----- ----- ----- -------------------- ---------------
B01   SC1   S101  DBMS                 Managing
B02   SC2   S102  Java                 Language
B03   SC3   S103  Html                 Web Dev
B04   SC4   S104  Alegbra              Maths
B05   SC5   S105  Soft Skills          Communication
```

- Creating **COURSE** table:

```
SQL> create table COURSE
  2  (course_id varchar(5),
  3  constraint csid foreign key(course_id) references SUBJECT (sb_course_id),
  4  course_std_id varchar(5),
  5  course_name char(20),
  6  course_year number(1) NOT NULL,
  7  course_type char (15)
  8  );

Table created.

SQL> insert into course values('SC1', 'S101', 'BSc CS', 3, 'UG');

1 row created.

SQL> insert into course values('SC2', 'S102', 'BSc IT', 3, 'UG');

1 row created.

SQL> insert into course values('SC3', 'S103', 'MSc CS', 2, 'PG');

1 row created.

SQL> insert into course values('SC4', 'S104', 'BSc BMM', 3, 'UG');

1 row created.

SQL> insert into course values('SC5', 'S105', 'Engineering', 2, 'Diploma');

1 row created.

SQL> select * from COURSE;

COURS COURS COURSE_NAME          COURSE_YEAR COURSE_TYPE
----- ----- -------------------- ----------- ---------------
SC1   S101  BSc CS                         3 UG
SC2   S102  BSc IT                         3 UG
SC3   S103  MSc CS                         2 PG
SC4   S104  BSc BMM                        3 UG
SC5   S105  Engineering                    2 Diploma
```

Different Types of Queries:

1. Select using **where clause**:

```
SQL> select adm_name
  2  from ADMISSION
  3  where adm_type='Regular';

ADM_NAME
--------------------
Saif
Anup
Sarthak
```

2. Changing the name of COURSE table using **alter query**:

```
SQL> alter table COURSE
  2  rename to COURSES;

Table altered.

SQL> select * from COURSES;

COURS COURS COURSE_NAME          COURSE_YEAR COURSE_TYPE
----- ----- -------------------- ----------- ---------------
SC1   S101  BSc CS                         3 UG
SC2   S102  BSc IT                         3 UG
SC3   S103  MSc CS                         2 PG
SC4   S104  BSc BMM                        3 UG
SC5   S105  Engineering                    2 Diploma
```

3. Changing subject type ‘Communication’ to ‘PD’ using **update query**:

```
SQL> update SUBJECT
  2  set sb_type='PD'
  3  where sb_id='B05';

1 row updated.

SQL> select * from SUBJECT;

SB_ID SB_CO SB_ST SB_NAME              SB_TYPE
----- ----- ----- -------------------- ---------------
B01   SC1   S101  DBMS                 Managing
B02   SC2   S102  Java                 Language
B03   SC3   S103  Html                 Web Dev
B04   SC4   S104  Alegbra              Maths
B05   SC5   S105  Soft Skills          PD
```

4. Deleting 5th row of COURSES table using **delete query**:

```
SQL> delete from COURSES
  2  where course_id='SC5';

1 row deleted.

SQL> select * from COURSES;

COURS COURS COURSE_NAME          COURSE_YEAR COURSE_TYPE
----- ----- -------------------- ----------- ---------------
SC1   S101  BSc CS                          3 UG
SC2   S102  BSc IT                          3 UG
SC3   S103  MSc CS                          2 PG
SC4   S104  BSc BMM                         3 UG
```

5. Creating a view table named ‘DEGREE’ with Create **view query**:

```
SQL> create view DEGREE as
  2  select course_name, course_year, course_type
  3  from COURSES;

View created.

SQL> select * from DEGREE;

COURSE_NAME          COURSE_YEAR COURSE_TYPE
-------------------- ----------- ---------------
BSc CS                         3 UG
BSc IT                         3 UG
MSc CS                         2 PG
BSc BMM                        3 UG
```

6. Displaying Admission name in ascending order using **Order by query**:

```
SQL> select adm_name
  2  from ADMISSION
  3  order by adm_name asc;

ADM_NAME
--------------------
Aman
Anup
Saif
Sarthak
Suraj
```

7. Displaying ‘Number of ID’s’ column from UNIVERSITY table using **Group by query**:

```
SQL> select uni_id, count(*) as "Number of ID's"
  2  from UNIVERSITY
  3  group by uni_id;

UNI_I Number of ID's
----- --------------
D01                1
A12                1
B20                1
F92                1
O07                1
```

8. Displaying Course name whose Course type is ‘UG’ using **Subquery**:

```
SQL> select course_name
  2  from COURSES
  3  where course_type in (select course_type
  4  from COURSES
  5  where course_type='UG');

COURSE_NAME
--------------------
BSc CS
BSc IT
BSc BMM
```

9. Displaying Admission name and their Subjects using **Outer join**:

```
SQL> select adm_name, sb_name
  2  from ADMISSION left outer join SUBJECT
  3  on adm_std_id=sb_std_id;

ADM_NAME             SB_NAME
-------------------- --------------------
Saif                 DBMS
Aman                 Java
Suraj                Html
Anup                 Alegbra
Sarthak              Soft Skills
```

10. Deleting COURSES table using **Drop query**:

```
SQL> drop table COURSES;

Table dropped.
```