DBMS PROJECT
ONLINE STUDENT PORTAL

Problem Statement

In this project, we aim to design a database management system to store information on an Online students' portal. This will manage the students' information during online semester.

The database stores unique log in information for each student which helps them to access the portal. Every student may provide their profile information which includes Name, roll number, current course pursued by them. The database also includes the information about the subject opted by individual student. This may also include the credits as well the useful materials the students may require for their academics.

The database is made useful for the faculties. The contact details of faculties along with their profile can be maintained using this database. The database also records the Attendance (in percentage) maintained for the faculty reference.

The database also contains the information regarding the exams conducted throughout the academic year. This may include both minor tests as well as major exams. The database also allows students to submit their Assignments for different subjects before the respective deadlines. This may also include Lab assignments.

The database records the date of submission for the late submitters. The students may also showcase their achievements by putting forward the projects made by them in groups or individually. A student may have made multiple projects. Finally, this database aims to efficiently manages all the resources for smooth functioning of online semester.

Contents

TABLES

STUDENT

ATTRIBUTE	DATATYPE	CONSTRAINTS
ROLL NUMBER	NUMBER	PRIMARY_KEY NOT NULL
USERID	VARCHAR(40)	FOREIGN_KEY NOT NULL
NAME	VACHAR(40)	NOT NULL
UG/PG	VARCHAR(2)	NOT NULL

PROJECT

ATTRIBUTE	DATATYPE	CONSTRAINTS
PROJECT NAME	VARCHAR(40)	PRIMARY_KEY NOT NULL
SUBJECT	VARCHAR(40)	NOT NULL
YEAR	DATE	NOT NULL

ATTENDANCE

ATTRIBUTE	DATATYPE	CONSTRAINTS
ROLL NUMBER	NUMBER	PRIMARY_KEY NOT NULL
FAC_ID	NUMBER	PRIMAR_KEY NOT NULL
PERCENTAGE	FLOAT(5)	NOT NULL

EXAM

ATTRIBUTE	DATATYPE	CONSTRAINTS
EXAMCODE	VARCHAR(10)	PRIMARY_KEY NOT NULL
NAME	VARCHAR(20)	NOT NULL
DATE	DATE	NOT NULL
TYPE	VARCHAR(6)	NOT NULL
DURATION	TIME	NOT NULL

LOGIN INFO

ATTRIBUTE	DATATYPE	CONSTRAINTS
USERID	VARCHAR(40)	PRIMARY_KEY NOT NULL
PASSWORD	VARCHAR(30)	NOT NULL

MADE

ATTRIBUTE	DATATYPE	CONSTRAINTS
ROLL NUMBER	NUMBER	PRIMARY_KEY NOT NULL
NAME	VARCHAR (40)	PRIMARY_KEY NOT NULL
PROJECT NAME	NUMBER	PRIMARY_KEY NOT NULL

SUBJECT

ATTRIBUTE	DATATYPE	CONSTRAINTS
SUBJECT NAME	VARCHAR(20)	PRIMARY_KEY NOT NULL
RECORDINGS	VARCHAR (100)	NOT NULL
READING MATERIAL	VARCHAR (100)	NOT NULL
CREDITS	SMALLINT	NOT NULL

FACULTY

ATTRIBUTE	DATATYPE	CONSTRAINTS
FAC_ID	NUMBER	PRIMARY_KEY NOT NULL
NAME	VARCHAR (20)	NOT NULL
EMAIL	VARCHAR (100)	NOT NULL
SUBJECT NAME	VARCHAR(20)	FOREIGN_KEY NOT NULL

ASSIGNMENT

ATTRIBUTE	**DATATYPE**	**CONSTRAINTS**
SUBJECT NAME	VARCHAR (20)	PRIMARY_KEY NOT NULL
ASSIGNMENT NAME	VARCHAR (20)	PRIMARY_KEY NOT NULL
LAB/THEORY	VARCHAR (6)	NOT NULL
DEADLINE	DATE	NOT NULL

FEES

ATTRIBUTE	**DATATYPE**	**CONSTRAINTS**
ROLL NUMBER	NUMBER	PRIMARY_KEY NOT NULL
TUITION_FEES	NUMBER	NOT NULL
HOSTEL_FEES	NUMBER	NOT NULL
OTHER_CHARGES	NUMBER	NOT NULL

WORKING OF THE DATABASE

- The student log in the online portal using his username which is unique for each student and his password.
- The student then can see his personal information which includes name, roll number, current course pursued by them.
- According to the stream of the student, s/he can view the information regarding the subject opted by individual student.
- Along with this the students can also create and manage their projects made through the portal
- The student can also look at their upcoming theory/lab assignments and upload them before the deadlines along with the various exams scheduled throughout the year. The database will also record the details of late submitters.
- The student can also view the credits and the useful materials the of the subject like the recording of the online classes and the reading material uploaded by the faculty.
- The student can also view information about the faculty for a particular subject like the name and the email of the faculty, which would help the student get in contact with the teacher for any queries.
- The faculties can also mark the attendance of all students on the database which would be maintained for grading purposes.
- Information regarding fees like tuition fees, other extra charges etc. can also be viewed by the students.

NORMALISATION

1. **LOGIN_INFO**

   USERID->{PASSWORD}
   ON TAKING CLOSURE OF USERID WE GET:- (USERID)+-> R

   PRIMARY KEY –> USERID

   NORMALISATION

   PRIME ATTRIBUTES:- USERID
   NON PRIME ATTRIBUTE:- PASSWORD

   THERE IS **NO PARTIAL DEPENDENCY** THEREFORE THE TABLE IS IN **2NF.** THERE IS **NO TRANSITIVE DEPENDENCY** THEREFORE THE TABLE IS IN **3NF.** ALL DEPENDENCIES ARE FROM **CANDIDATE KEY** THEREFORE THE TABLE IS **BCNF**

2. **STUDENT**

   ROLL_NUMBER -> {NAME, USERID, UG/PG}
   ON PRIMARY CLOSURE OF ROLL_NUMBER WE GET :- (ROLL_NUMBER)+->R

   PRIMARY KEY-> ROLL_NUMBER

   PRIME ATTRIBUTES:- ROLL_NUMBER
   NON-PRIME ATTRIBUTES:- NAME AND UG/PG

   NORMALISATION

   PRIME ATTRIBUTES:- ROLL_NUMBER
   NON-PRIME ATTRIBUTES:- NAME AND UG/PG

   THERE IS A **PARTIAL DEPENDANCY** FROM ROLL NUMBER AND USERID TO FEES

   TO OVERCOME THIS, WE NEED TO DECOMPOSE THIS TABLE

   NEW TABLES

   FEES
   ROLL NUMBER->{ TUTION_FEE, HOSTEL_FEE, OTHER_CHARGES,USERID}
   PRIMARY KEY->ROLL NUMBER

3. **SUBJECT**

SUBJECT_NAME->{RECORDINGS,READING MATERIALS, CREDITS}
ON TAKING CLOSURE OF SUBJECT_NAME WE GET:- (SUBJECT_NAME)+->R

PRIMARY KEY:- SUBJECT_NAME

NORMALISATION

PRIME ATTRIBUTE:- SUBJECT_NAME
NON PRIME ATTRIBUTE:- RECORDINGS,READING MATERIALS, CREDITS

THERE IS **NO PARTIAL DEPENDENCY** THEREFORE THE TABLE IS IN **2NF.** THERE IS **NO TRANSITIVE DEPENDENCY** THEREFORE THE TABLE IS IN **3NF.** ALL DEPENDENCIES ARE FROM **CANDIDATE KEY** THEREFORE THE TABLE IS **BCNF**

4. **FACULTY**

FAC_ID -> {NAME, EMAIL}
ON TAKING CLOSURE OF FAC_ID WE GET :- (FAC_ID)+ -> R

PRIMARY KEY:-FAC_ID

NORMALISATION

PRIME ATTRIBUTE:- FAC_ID
NON PRIME ATTRIBUTE:- NAME, EMAIL

THERE IS **NO PARTIAL DEPENDENCY** THEREFORE THE TABLE IS IN **2NF.** THERE IS **NO TRANSITIVE DEPENDENCY** THEREFORE THE TABLE IS IN **3NF.** ALL DEPENDENCIES ARE FROM **CANDIDATE KEY** THEREFORE THE TABLE IS **BCNF**

5. **EXAM**

EXAM_CODE -> {MARKS, DATE, LENGTH, TYPE}
ON TAKING CLOSURE OF EXAM_CODE WE GET :- (EXAM_CODE)+ -> R

PRIMARY KEY:-EXAM CODE

NORMALISATION

PRIME ATTRIBUTE:- EXAM_CODE
NON PRIME ATTRIBUTE:- MARKS, DATE, LENGTH, TYPE

THERE IS **NO PARTIAL DEPENDENCY** THEREFORE THE TABLE IS IN **2NF.** THERE IS **NO TRANSITIVE DEPENDENCY** THEREFORE THE TABLE IS IN **3NF.** ALL DEPENDENCIES ARE FROM **CANDIDATE KEY** THEREFORE THE TABLE IS **BCNF**

6. **PROJECT**

PROJECT_NAME -> {YEAR,SUBJECT}
ON TAKING CLOSURE OF PROJECT_NAME WE GET:- (PROJECT_NAME)+ -> R

PRIMARY KEY:- PROJECT_NAME

NORMALISATION

PRIME ATTRIBUTE:- PROJECT_NAME
NON PRIME ATTRIBUTE:- YEAR,SUBJECT

THERE IS **NO PARTIAL DEPENDENCY** THEREFORE THE TABLE IS IN **2NF.** THERE IS **NO TRANSITIVE DEPENDENCY** THEREFORE THE TABLE IS IN **3NF.** ALL DEPENDENCIES ARE FROM **CANDIDATE KEY** THEREFORE THE TABLE IS **BCNF**

7. **ASSIGNMENT**

THIS IS A WEAK ENTITY SET, THEREFORE IT FORMS **PRIMARY KEY** WITH THE HELP OF TWO **FOREIGN KEYS**.

ASSIGNMENT NAME->{SUBJECT NAME, LAB/THEORY, DATE SUBMITTED}
SUBJECT NAME->{ASSIGNMENT NAME, LAB/THEORY, DATE SUBMITTED}

ON TAKING CLOSURE OF ASSIGNMENT NAME AND SUBJECT NAME WE GET (SUBJECT NAME,ASSIGNMENT NAME)+ -> R

PRIMARY KEY:- ASSIGNMENT NAME SUBJECT NAME

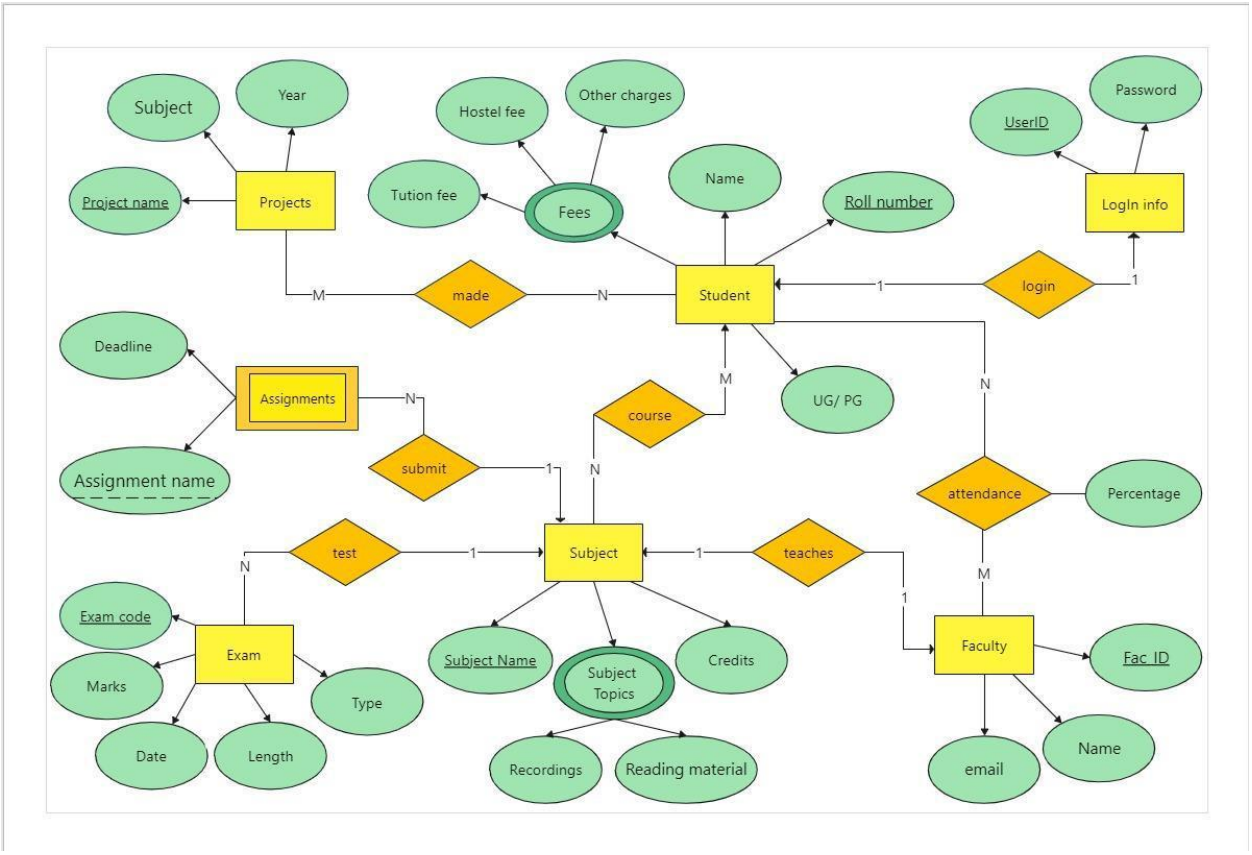
NORMALISATION

PRIME ATTRIBUTES: - (ASSIGNMENT NAME, SUBJECT NAME)
NON-PRIME ATTRIBUTES:- LAB/THEORY DATE SUBMITTED, DEADLINE

THERE IS **NO PARTIAL DEPENDENCY** THEREFORE THE TABLE IS IN **2NF.** THERE IS **NO TRANSITIVE DEPENDENCY** THEREFORE THE TABLE IS IN **3NF.** ALL DEPENDENCIES ARE FROM **CANDIDATE KEY** THEREFORE THE TABLE IS **BCNF**

RELATIONSHIP SCHEMA

ER DIAGRAM


Subject
Year
Projects
Project name
Hostel fee
Other charges
Tution fee
Fees
Name
Roll number
Password
UserID
LogIn info
login
made
Student
M
N
1
Deadline
Assignments
Assignment name
submit
course
UG/ PG
attendance
Percentage
test
Subject
teaches
Exam code
Exam
Marks
Type
Date
Length
Subject Name
Subject Topics
Credits
Recordings
Reading material
Faculty
Fac ID
email
Name

SQL OPERATIONS

Creation of Tables

```
CREATE TABLE LOGIN_INFO
(   USERID VARCHAR(40)  PRIMARY KEY NOT NULL,
    PASSWORD_ VARCHAR(30) NOT NULL
);

CREATE TABLE STUDENT
(   USERID  VARCHAR2(40)  NOT NULL,
    S_NAME VARCHAR2(40) NOT NULL,
    ROLL_NUMBER NUMBER PRIMARY KEY NOT NULL,
    UG_PG      VARCHAR(2) NOT NULL,
    FOREIGN KEY (USERID) REFERENCES LOGIN_INFO(USERID)
);


CREATE TABLE FEES
(   ROLL_NUMBER NUMBER NOT NULL,
    FOREIGN KEY (ROLL_NUMBER) REFERENCES STUDENT(ROLL_NUMBER),
    TUTION_FEE NUMBER NOT NULL,
    HOSTEL_FEE NUMBER NOT NULL,
    OTHER_CHARGES NUMBER NOT NULL,
    PRIMARY KEY (ROLL_NUMBER)
);


CREATE TABLE SUBJECT
(   SUBJECT_NAME VARCHAR(40)  PRIMARY KEY NOT NULL,
    RECORDINGS VARCHAR(100) NOT NULL,
    READING_MATERIAL VARCHAR(100) NOT NULL,
    CREDITS SMALLINT NOT  NULL
);


CREATE TABLE EXAM
(   SUBJECT VARCHAR(40) NOT NULL,
    EXAM_CODE VARCHAR(6) PRIMARY KEY NOT NULL,
    MARKS NUMBER NOT NULL,
    EXAM_DATE DATE NOT NULL,
    LENGHT VARCHAR(7) NOT NULL,
    TYPE_ VARCHAR(7) NOT NULL,
    FOREIGN KEY (SUBJECT) REFERENCES SUBJECT(SUBJECT_NAME)
);
```

```
CREATE TABLE COURSE
(   ROLL_NUMBER NUMBER NOT NULL,
    SUBJECT_NAME VARCHAR2(40) NOT NULL,
    FOREIGN KEY (ROLL_NUMBER) REFERENCES STUDENT(ROLL_NUMBER),
    FOREIGN KEY (SUBJECT_NAME) REFERENCES SUBJECT(SUBJECT_NAME),
    PRIMARY KEY(SUBJECT_NAME,ROLL_NUMBER)
);

CREATE TABLE PROJECTS
(   PROJECT_NAME VARCHAR2(40) PRIMARY KEY NOT NULL,
    SUBJECT VARCHAR2(40) NOT NULL,
    YEAR_ INT NOT NULL
);


CREATE TABLE MADE
(   ROLL_NUMBER NUMBER NOT NULL,
    PROJECT_NAME VARCHAR2(40) NOT NULL,
    FOREIGN KEY (ROLL_NUMBER) REFERENCES STUDENT(ROLL_NUMBER),
    FOREIGN KEY (PROJECT_NAME) REFERENCES PROJECTS(PROJECT_NAME)
);


CREATE TABLE FACULTY
(   FAC_ID NUMBER PRIMARY KEY NOT NULL,
    FAC_NAME VARCHAR(20) NOT NULL,
    EMAIL VARCHAR(100) NOT NULL,
    SUBJECT_NAME VARCHAR(40)  NOT NULL,
    FOREIGN KEY (SUBJECT_NAME) REFERENCES SUBJECT(SUBJECT_NAME)
);


CREATE TABLE ATTENDANCE
(   ROLL_NUMBER NUMBER NOT NULL,
    FAC_ID NUMBER NOT NULL,
    PERCENTAGE NUMBER NOT NULL,
    FOREIGN KEY (ROLL_NUMBER) REFERENCES STUDENT(ROLL_NUMBER),
    FOREIGN KEY (FAC_ID) REFERENCES FACULTY(FAC_ID)
);
```

Insertion of Values

```
INSERT INTO LOGIN_INFO
VALUES('singh_197110@student.nitw.ac.in', 'SINGH0123');
INSERT INTO LOGIN_INFO
VALUES('bhatia_197123@student.nitw.ac.in', 'BHATIA4567');
INSERT INTO LOGIN_INFO
VALUES('patel_197242@student.nitw.ac.in', 'PATEL1430');
INSERT INTO LOGIN_INFO
VALUES('pradhan_196125@student.nitw.ac.in', 'PRAD43210');
INSERT INTO LOGIN_INFO
VALUES('verma_196137@student.nitw.ac.in', 'ADITYA6789');
INSERT INTO LOGIN_INFO
VALUES('sahani_198209@student.nitw.ac.in', 'SAHANI9876');
INSERT INTO LOGIN_INFO VALUES
('chhaje_197238@student.nitw.ac.in', 'CHHAJED7238');
INSERT INTO LOGIN_INFO VALUES
('balai_197254@student.nitw.ac.in', 'BALAI7254');
INSERT INTO LOGIN_INFO VALUES
('mishra_197258@student.nitw.ac.in', 'MISHRA7258');
INSERT INTO LOGIN_INFO VALUES
('johar_197264@student.nitw.ac.in', 'JOHAR7264');
INSERT INTO LOGIN_INFO VALUES('khan_198101@student.nitw.ac.in','KHAN8101');


INSERT INTO STUDENT VALUES ('singh_197110@student.nitw.ac.in','NAVJOT
SINGH',197110,'UG');
INSERT INTO STUDENT VALUES ('bhatia_197123@student.nitw.ac.in','TANMAY
BHATIYA',197123,'UG');
INSERT INTO STUDENT VALUES ('patel_197242@student.nitw.ac.in','HARSH
PATEL',197242,'UG');
INSERT INTO STUDENT VALUES ('pradhan_196125@student.nitw.ac.in','BINOD
PRADHAN',196125,'PG');
INSERT INTO STUDENT VALUES ('verma_196137@student.nitw.ac.in','RAM GOPAL
VERMA',196137,'PG');
INSERT INTO STUDENT VALUES ('sahani_198209@student.nitw.ac.in','AMANDEEP
SAHANI',198209,'PG');
INSERT INTO STUDENT VALUES ('chhaje_197238@student.nitw.ac.in','RAICHAND
CHHAJED',197238,'UG');
INSERT INTO STUDENT VALUES ('balai_197254@student.nitw.ac.in','ANAND
BALAI',197254,'UG');
INSERT INTO STUDENT VALUES ('khan_198101@student.nitw.ac.in','GENGHIS
KHAN',198101,'PG');
INSERT INTO STUDENT VALUES ('mishra_197258@student.nitw.ac.in','PRATIK
MISHRA',197258,'UG');
INSERT INTO STUDENT VALUES ('johar_197264@student.nitw.ac.in','RUHI
JOHAR',197264,'UG');
```

```
INSERT INTO FEES VALUES(197110, 132000, 47000, 5200);
INSERT INTO FEES VALUES(197123, 132000, 48000, 5000);
INSERT INTO FEES VALUES(197242, 325000, 50000, 5250);
INSERT INTO FEES VALUES(196125, 100000, 10000, 2100);
INSERT INTO FEES VALUES(196137, 325000, 50000, 5100);
INSERT INTO FEES VALUES(198209, 132000, 50000, 5000);
INSERT INTO FEES VALUES(197238, 100000, 10000, 2100);
INSERT INTO FEES VALUES(197254, 50000, 10000, 1000);
INSERT INTO FEES VALUES(198101, 325000, 50000, 5100);
INSERT INTO FEES VALUES(197258, 132000, 48000, 5000);
INSERT INTO FEES VALUES(197264, 50000, 10000, 1000);


INSERT INTO SUBJECT VALUES('INTEGRATED CIRCUITS',
'https://drive.google.com/drive/folders/1JNyBtJ','https://second-
lms.nitwcloud.in/moodle/pluginfile.php/content/1/bjeswb1.pdf',3);
INSERT INTO SUBJECT VALUES('MODELLING THEORY',
'https://professional.mit.edu/modeling-and-optimization-machine-
learning','https://drive.google.com/file/d/1s5govFb6sodB7jEETkWD2bw/view',3);
INSERT INTO SUBJECT VALUES('DIGITAL ELECTRONICS',
'https://www.tinkercad.com/dashboard?type=circuits','https://drive.google.com
/file/d/2xXErGeeb_Q/view',3);
INSERT INTO SUBJECT VALUES('OBJECT ORIENTED PROGRAMMING',
'https://drive.google.com/file/1ZHDbmM4uk7InX/view','https://second-
lms.nitwcloud.in/moodle/mod/url/view.php',3);
INSERT INTO SUBJECT VALUES('DATA STRUCTURES',
'https://drive.google.com/drive/folders/1JNyBtJ','https://lms.moodle.in/1/mod
/url/view.php/bjeswb1.mov',3);
INSERT INTO SUBJECT VALUES('DATA STRUCTURES LAB',
'https://drive.google.com/drive/folders/bDS14K','https://lms.moodle.in/1/mod/
url/view.php/bjeswb1.mov',2);
INSERT INTO SUBJECT VALUES('DATA MANAGEMENT',
'https://drive.google.com/drive/folders/1FC1u0K','https://second-
lms.nitwcloud.in/moodle/pluginfile.php/content/1/bjeswb1.pdf',3);
INSERT INTO SUBJECT VALUES('DATA MANAGEMENT LAB',
'https://drive.google.com/drive/folders/Gr8qTH','https://lms.moodle.in/1/mod/
url/view.php/bjeswb1.mov',1);
INSERT INTO SUBJECT VALUES('COMPUTER ARCHITECTURE',
'https://drive.google.com/drive/folders/W3rDEd','https://lms.moodle.in/1/mod/
url/view.php/bjeswb1.mov',1);
INSERT INTO SUBJECT VALUES('NETWORK ANALYSIS',
'https://drive.google.com/drive/folders/UsD0e2W','https://lms.moodle.in/1/mod
/url/view.php/bjeswb1.mov',2);


INSERT INTO EXAM VALUES ('DATA STRUCTURES LAB','DSL100',10,'30-APR-2021','20
MIN','QUIZ');
```

```
INSERT INTO EXAM VALUES ('DATA STRUCTURES','DSA101',50,'10-MAY-
2021','3 HRS','END SEM');
INSERT INTO EXAM VALUES ('DATA MANAGEMENT','DBM302',20,'23-APR-2021','30
MIN','MINOR');
INSERT INTO EXAM VALUES ('OBJECT ORIENTED PROGRAMMING','OOP201',30,'28-FEB-
2021','2 HRS','MID SEM');
INSERT INTO EXAM VALUES ('MODELLING THEORY','MOT321',15,'30-JAN-2021','20
MIN','MINOR');
INSERT INTO EXAM VALUES ('MODELLING THEORY','MOT321',15,'10-FEB-2021','20
MIN','MINOR');
INSERT INTO EXAM VALUES ('INTEGRATED CIRCUITS','ICA105',50,'30-MAY-2021','3
HRS','END SEM');
INSERT INTO EXAM VALUES ('COMPUTER ARCHITECTURE','CA208',50,'17-MAY-2021','3
HRS','END SEM');
INSERT INTO EXAM VALUES ('NETWORK ANALYSIS','NA230',50,'12-MAY-
2021','3 HRS','END SEM');
INSERT INTO EXAM VALUES ('DIGITAL ELECTRONICS','DLD111',50,'25-MAY-2021','3
HRS','END SEM');


INSERT INTO ASSIGNMENT VALUES('DATA STRUCTURES LAB','STACKS AND QUEUES','20-
OCT-2020');
INSERT INTO ASSIGNMENT VALUES('DATA MANAGEMENT LAB','PL/SQL','20-APR-2021');
INSERT INTO ASSIGNMENT VALUES('OBJECT ORIENTED PROGRAMMING','INTERFACES','26-
FEB-2021');
INSERT INTO ASSIGNMENT VALUES('MODELLING THEORY','GENETIC ALGORITHMS','16-
MAR-2021');
INSERT INTO ASSIGNMENT VALUES('INTEGRATED CIRCUITS','WROKING OF IC555','11-
JAN-2021');
INSERT INTO ASSIGNMENT VALUES('DIGITAL ELECTRONICS','REGISTER CIRCUITS','10-
DEC-2020');
INSERT INTO ASSIGNMENT VALUES('COMPUTER ARCHITECTURE','PIPELINING','21-APR-
2020');
INSERT INTO ASSIGNMENT VALUES('DATA STRUCTURES','HEAPS','12-DEC-2020');
INSERT INTO ASSIGNMENT VALUES('DATA MANAGEMENT','NORMALSATION','20-APR-
2021');


INSERT INTO COURSE VALUES(197110,'INTEGRATED CIRCUITS');
INSERT INTO COURSE VALUES(197110,'OBJECT ORIENTED PROGRAMMING');
INSERT INTO COURSE VALUES(197110,'DATA STRUCTURES');
INSERT INTO COURSE VALUES(197123,'OBJECT ORIENTED PROGRAMMING');
INSERT INTO COURSE VALUES(197123,'DATA STRUCTURES LAB'); INSERT
INTO COURSE VALUES(197123,'MODELLING THEORY'); INSERT INTO COURSE
VALUES(197242,'COMPUTER ARCHITECTURE');
INSERT INTO COURSE VALUES(197242,'DATA MANAGEMENT');
INSERT INTO COURSE VALUES(196125,'DIGITAL ELECTRONICS');
INSERT INTO COURSE VALUES(196125,'INTEGRATED CIRCUITS');
INSERT INTO COURSE VALUES(196125,'OBJECT ORIENTED PROGRAMMING');
INSERT INTO COURSE VALUES(196137,'DATA MANAGEMENT LAB');
```

```
INSERT INTO COURSE VALUES(196137,'INTEGRATED CIRCUITS');
INSERT INTO COURSE VALUES(196137,'NETWORK ANALYSIS'); INSERT
INTO COURSE VALUES(198209,'DATA STRUCTURES LAB'); INSERT
INTO COURSE VALUES(198209,'MODELLING THEORY'); INSERT INTO
COURSE VALUES(198209,'COMPUTER ARCHITECTURE'); INSERT INTO
COURSE VALUES(198209,'DATA MANAGEMENT'); INSERT INTO COURSE
VALUES(197238,'INTEGRATED CIRCUITS'); INSERT INTO COURSE
VALUES(197238,'NETWORK ANALYSIS'); INSERT INTO COURSE
VALUES(197238,'COMPUTER ARCHITECTURE'); INSERT INTO COURSE
VALUES(197254,'DATA MANAGEMENT'); INSERT INTO COURSE
VALUES(197254,'DIGITAL ELECTRONICS'); INSERT INTO COURSE
VALUES(197254,'INTEGRATED CIRCUITS'); INSERT INTO COURSE
VALUES(198101,'DATA MANAGEMENT LAB'); INSERT INTO COURSE
VALUES(198101,'DATA STRUCTURES LAB'); INSERT INTO COURSE
VALUES(198101,'MODELLING THEORY'); INSERT INTO COURSE
VALUES(197258,'DATA MANAGEMENT'); INSERT INTO COURSE
VALUES(197258,'DATA STRUCTURES');
INSERT INTO COURSE VALUES(197258,'OBJECT ORIENTED PROGRAMMING');
INSERT INTO COURSE VALUES(197264,'OBJECT ORIENTED PROGRAMMING');
INSERT INTO COURSE VALUES(197264,'INTEGRATED CIRCUITS'); INSERT
INTO COURSE VALUES(197264,'MODELLING THEORY');


INSERT INTO PROJECTS VALUES('Running Time for Sorting
Problem','Algorithms Analysis', '2018');
INSERT INTO PROJECTS VALUES('Facial Emotion Recognition','Application of
Deep Learning', '2020');
INSERT INTO PROJECTS VALUES('Honest Review Website','Web Development and
Designing', '2017');
INSERT INTO PROJECTS VALUES('Aquarium Simulation using
Graphics','Computer Graphics and Applications', '2020');
INSERT INTO PROJECTS VALUES('Stack Based Text Editor','Data Structures
and Algorithms', '2017');
INSERT INTO PROJECTS VALUES('Graphical Evaluation Review
Technique','Network analysis: Project Management', '2020');
INSERT INTO PROJECTS VALUES('Language Translator in Python
Project','Deep Learning', '2019');
INSERT INTO PROJECTS VALUES('Chatbot Using Deep Learning','Deep Learning',
'2021');
INSERT INTO PROJECTS VALUES('SMS Controlled Robot','Electronics
and Communication with AI', '2018');


INSERT INTO MADE VALUES(197110, 'SMS Controlled Robot');
INSERT INTO MADE VALUES(197110, 'Stack Based Text Editor');
INSERT INTO MADE VALUES(197123, 'Aquarium Simulation using Graphics');
INSERT INTO MADE VALUES(197123, 'Running Time for Sorting Problem');
INSERT INTO MADE VALUES(197242, 'Stack Based Text Editor');
INSERT INTO MADE VALUES(197242, 'Honest Review Website');
INSERT INTO MADE VALUES(197242, 'Graphical Evaluation Review Technique');
```

```
INSERT INTO MADE VALUES(196125, 'Aquarium Simulation using Graphics');
INSERT INTO MADE VALUES(196137, 'Language Translator in Python
Project'); INSERT INTO MADE VALUES(196137, 'SMS Controlled Robot');
INSERT INTO MADE VALUES(196137, 'Honest Review Website'); INSERT
INTO MADE VALUES(198209, 'Chatbot Using Deep Learning'); INSERT
INTO MADE VALUES(198209, 'Facial Emotion Recognition'); INSERT
INTO MADE VALUES(198209, 'SMS Controlled Robot'); INSERT INTO
MADE VALUES(197238, 'Facial Emotion Recognition');
INSERT INTO MADE VALUES(197238, 'Language Translator in Python Project');
INSERT INTO MADE VALUES(197238, 'Graphical Evaluation Review Technique');
INSERT INTO MADE VALUES(197254, 'Facial Emotion Recognition'); INSERT
INTO MADE VALUES(198101, 'Stack Based Text Editor');
INSERT INTO MADE VALUES(198101, 'Running Time for Sorting Problem');
INSERT INTO MADE VALUES(198101, 'Aquarium Simulation using
Graphics'); INSERT INTO MADE VALUES(197258, 'Running Time for Sorting
Problem'); INSERT INTO MADE VALUES(197258, 'Honest Review Website');
INSERT INTO MADE VALUES(197258, 'Chatbot Using Deep Learning');
INSERT INTO MADE VALUES(197264, 'SMS Controlled Robot');
INSERT INTO MADE VALUES(197264, 'Aquarium Simulation using Graphics');


INSERT INTO FACULTY VALUES (210078,'RAMESH VERMA',
'r_verma@nitw.ac.in','NETWORK ANALYSIS');
INSERT INTO FACULTY VALUES (210031,'NEHA SAXENA',
'n_saxena@nitw.ac.in','MODELLING THEORY');
INSERT INTO FACULTY VALUES (210052,'SHREYA KOHLI',
'p_kohli@nitw.ac.in','COMPUTER ARCHITECTURE');
INSERT INTO FACULTY VALUES (210047,'MAHENDRA PAL','m_pal@nitw.ac.in','DIGITAL
ELECTRONICS');
INSERT INTO FACULTY VALUES (210024,'KAPIL RANA ',
'k_rana@nitw.ac.in','INTEGRATED CIRCUITS');
INSERT INTO FACULTY VALUES (210009,'SEBASTIAN BATTENY',
's_batteny@nitw.ac.in','DATA STRUCTURES');
INSERT INTO FACULTY VALUES (210010,'MARK STEWART',
'm_stewart@nitw.ac.in','DATA STRUCTURES LAB');
INSERT INTO FACULTY VALUES (210066,'RAMA SINDE','r_sinde@nitw.ac.in','OBJECT
ORIENTED PROGRAMMING');
INSERT INTO FACULTY VALUES (210042,'SHEKHAR KHURESHI',
's_khureshi@nitw.ac.in','DATA MANAGEMENT');
INSERT INTO FACULTY VALUES (210090,'SHAKSHI SEN', 's_sen@nitw.ac.in','DATA
MANAGEMENT');


INSERT INTO ATTENDANCE VALUES (197110, 210078, 88);
INSERT INTO ATTENDANCE VALUES (197110, 210047, 63);
INSERT INTO ATTENDANCE VALUES (197123, 210024, 94);
INSERT INTO ATTENDANCE VALUES (197123, 210042, 85);
INSERT INTO ATTENDANCE VALUES (197123, 210090, 59);
INSERT INTO ATTENDANCE VALUES (197242, 210052, 90);
INSERT INTO ATTENDANCE VALUES (197242, 210031, 88);
```

```
INSERT INTO ATTENDANCE VALUES (196125, 210009, 58);
INSERT INTO ATTENDANCE VALUES (196125, 210010, 85);
INSERT INTO ATTENDANCE VALUES (196137, 210042, 80);
INSERT INTO ATTENDANCE VALUES (196137, 210090, 61);
INSERT INTO ATTENDANCE VALUES (196137, 210024, 89);
INSERT INTO ATTENDANCE VALUES (198209, 210031, 94);
INSERT INTO ATTENDANCE VALUES (197238, 210066, 83);
INSERT INTO ATTENDANCE VALUES (197238, 210052, 96);
INSERT INTO ATTENDANCE VALUES (197254, 210042, 87);
INSERT INTO ATTENDANCE VALUES (197254, 210090, 91);
INSERT INTO ATTENDANCE VALUES (198101, 210078, 80);
INSERT INTO ATTENDANCE VALUES (197258, 210009, 93);
INSERT INTO ATTENDANCE VALUES (197258, 210010, 86);
INSERT INTO ATTENDANCE VALUES (197264, 210024, 78);
INSERT INTO ATTENDANCE VALUES (197264, 210047, 92);
```

SQL QUERIES

1.Display the details of the student profile with the entered user id and password

```
SELECT S_NAME, S.ROLL_NUMBER, UG_PG, TUTION_FEE, HOSTEL_FEE, OTHER_CHARGES
FROM ((STUDENT S INNER JOIN LOGIN_INFO L ON S.USERID=L.USERID)
INNER JOIN FEES F ON S.ROLL_NUMBER=F.ROLL_NUMBER)
WHERE (L.USERID='patel_197242@student.nitw.ac.in'
AND L.PASSWORD_='PATEL1430');
```

	S_NAME	ROLL_NUMBER	UG_PG	TUTION_FEE	HOSTEL_FEE	OTHER_CHARGES
1	HARSH PATEL	197242	UG	325000	50000	5250

Wrong password entered:

```
SELECT S_NAME, S.ROLL_NUMBER, UG_PG, TUTION_FEE, HOSTEL_FEE,
OTHER_CHARGES FROM ((STUDENT S INNER JOIN LOGIN_INFO L ON
S.USERID=L.USERID) INNER JOIN FEES F ON S.ROLL_NUMBER=F.ROLL_NUMBER)
WHERE (L.USERID='patel_197242@student.nitw.ac.in' AND L.PASSWORD_=
'PATEL1234');
```

	S_NAME	ROLL_N...	UG_PG	TUTION...	HOSTEL...	OTHER_...

2.Show all the details of all the projects made by roll number 197258.

```
SELECT S.ROLL_NUMBER, P.PROJECT_NAME, P.SUBJECT, P.YEAR_
FROM ((STUDENT S INNER JOIN MADE M ON S.ROLL_NUMBER= M.ROLL_NUMBER)
INNER JOIN PROJECTS P ON P.PROJECT_NAME=M.PROJECT_NAME)
WHERE S.ROLL_NUMBER=197258;
```

	ROLL_NU...	PROJECT_NAME	SUBJECT	YEAR_
1	197258	Running Time for Sorting Problem	Algorithms Analysis	2018
2	197258	Honest Review Website	Web Development and Designing	2017
3	197258	Chatbot Using Deep Learning	Deep Learning	2021

3.Display the details of all the students taught by faculty with faculty id 210047.

```
SELECT S.ROLL_NUMBER, S.S_NAME,  F.SUBJECT_NAME, S.UG_PG
FROM ((STUDENT S INNER JOIN ATTENDANCE A ON S.ROLL_NUMBER= A.ROLL_NUMBER)
INNER JOIN FACULTY F ON F.FAC_ID= A.FAC_ID)
WHERE F.FAC_ID= 210047;
```

	ROLL_NUMBER	S_NAME	SUBJECT_NAME	UG_PG
1	197110	NAVJOT SINGH	DIGITAL ELECTRONICS	UG
2	197264	RUHI JOHAR	DIGITAL ELECTRONICS	UG

4.The minimum attendance percentage a student must maintain to be able to appear for the exams is 80%. List the names of the students along with their attendance percentages who are NOT eligible for exam. Also mention the corresponding faculty name and the subject name.

```
SELECT S.ROLL_NUMBER, S_NAME, PERCENTAGE,  FAC_NAME, SUBJECT_NAME
FROM ((STUDENT S INNER JOIN ATTENDANCE A ON S.ROLL_NUMBER=A.ROLL_NUMBER)
INNER JOIN FACULTY F ON A.FAC_ID= F.FAC_ID)
WHERE PERCENTAGE<80;
```

	ROLL_NUMBER	S_NAME	PERCENTAGE	FAC_NAME	SUBJECT_NAME
1	197110	NAVJOT SINGH	63	MAHENDRA PAL	DIGITAL ELECTRONICS
2	197123	TANMAY BHATIYA	59	SHAKSHI SEN	DATA MANAGEMENT
3	196125	BINOD PRADHAN	58	SEBASTIAN BATTENY	DATA STRUCTURES
4	196137	RAM GOPAL VERMA	61	SHAKSHI SEN	DATA MANAGEMENT
5	197264	RUHI JOHAR	78	KAPIL RANA	INTEGRATED CIRCUITS

5. Display the course that was chosen by maximum number of students

```
SELECT SUBJECT_NAME,COUNT(*) AS NUMBER_OF_TIMES FROM COURSE GROUP BY
SUBJECT_NAME HAVING COUNT(SUBJECT_NAME)=(SELECT MAX(COUNT(SUBJECT_NAME))
FROM COURSE GROUP BY SUBJECT_NAME);
```

	SUBJECT_NAME	NUMBER_OF_TIMES
1	INTEGRATED CIRCUITS	6