**EXAMINATION DATABASE MANAGEMENT SYSTEM FOR STUDENTS**

**A Case Study Submitted to**

**DEPARTMENT**

**of**

**COMPUTER SCIENCE AND SYSTEMS ENGINEERING**

***Submitted by***

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(2021-2022)

**SREE VIDYANIKETHAN ENGINEERING COLLEGE**

**(AUTONOMOUS)**

**Sree Sainath Nagar, Tirupati**

**DEPARTMENT OF COMPUTER SCIENCE AND SYSTEMS ENGINEERING**

**CERTIFICATE**

This is to certify that the Case Study report entitled

**EXAMINATION DATABASE MANAGEMENT SYSTEM FOR STUDENTS**

is the Bonafide work done by

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in the Department of **Computer Science and Systems Engineering**, and submitted to Computer Science and Systems Engineering during the academic year 2021-2022. This work has been carried out under my supervision.

***Guide: Head:***

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Assistant Professor Professor & Head

Dept. of CSSE Dept. of CSSE

**INTERNAL EXAMINER EXTERNAL EXAMINER**

**DEPARTMENT OF COMPUTER SCIENCE AND SYSTEMS ENGINEERING**

**VISION**

To become a centre of excellence in Computer Sciences and Systems Engineering through teaching, training, research and innovation to create quality engineering professionals who can solve the growing complex problems of the society.

**MISSION**

* Established with the cause of development of technical education in advanced computer sciences and engineering with applications to systems there by serving the society and nation.
* Transfer of Knowledge through contemporary curriculum and fostering faculty and student development.
* Create keen interest for research and innovation among students and faculty by understanding the needs of the society and industry.
* Skill development among diversity of students in technical domains and profession for development of systems and processes to meet the demands of the industry and research.
* Imbibing values and ethics in students for prospective and promising engineering profession and develop a sense of respect for all.

**PROGRAM EDUCATIONAL OBJECTIVES**

1. Demonstrate competencies in the Computer Science domain and Management with an ability to comprehend, analyze, design and create software systems for pursuing advanced studies in the areas of interest.

2. Evolve as entrepreneurs or be employed by acquiring required skill sets for developing computer systems and solutions in multi-disciplinary areas.

3. Exhibit progression and professional skill development in Computer programming and systems development with ethical attitude through life-long learning.

**PROGRAM SPECIFIC OUTCOMES**

**PSO1:** Employ Systems Approach to model the solutions for real life problems, design and develop software systems by applying Modern Tools.

**PSO2:** Develop solutions using novel algorithms in High Performance Computing and Data Science.

**PSO3:** Use emerging technologies for providing security and privacy to design, deploy and manage network systems.

**PROGRAM OUTCOMES**

1. Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**II B. Tech. – II Semester**

**(20BT40531) DATABASE MANAGEMENT SYSTEMS LAB**

**COURSE OUTCOMES**

**CO1**. Analyze the requirements of a given database problem and design viable ER-Models for implementation of database.

**CO2**. Create database schemas, select and apply suitable integrity constraints for querying databases using SQL interface.

**CO3.** Develop and interpret PL/SQL blocks to centralize database applications for maintainability and reusability.

**CO4.** Develop database applications for societal applications such as ticket reservation system, employee payroll system using modern tools.

**CO5.** Work independently and communicate effectively in oral and written forms.

**DECLARATION**

We hereby declare that this project report titled “Title” is a genuine work carried out by us, in B.Tech (Computer Science and Systems Engineering) degree course of Jawaharlal Nehru Technological University Anantapur and has not been submitted to any other course or University for the award of any degree by us.

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea / data / fact / source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Signature of the students

1.

2.

3.

4.

5.

**ABSTRACT**

The semester exams database is designed to store information about student exams. The database includes several entities such as Student, Invigilator, Exam, Subject, Department, Exam Room, and Exam Seat.

Students are identified by their unique Student ID and are associated with a Department. Each Department can offer multiple Subjects. Each Exam is associated with a Subject and is held in an Exam Room. Each Exam Room is associated with a Block. Each Exam has one Invigilator and can host multiple Exam Seats. Each Exam Seat is assigned to a specific Student for a specific Exam.

The Semester Exams database is designed to support the scheduling, management, and assessment of exams. It enables the efficient allocation of Exam Rooms and Invigilators, as well as the tracking of Exam attendance. The database can be queried to generate reports on Student performance, Exam attendance, and other relevant metrics.

Overall, the Semester Exams database provides a comprehensive and flexible platform for managing the complexity of exams at the institutional level, allowing educators to make informed decisions based on accurate data.

|  |
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|  |

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# CHAPTER 1. INTRODUCTION

**1.1 Introduction to the topic**

The Examination Database Management System for Students is a mini project designed to streamline and automate the process of managing examinations within an educational institution. This system aims to replace traditional manual methods of exam management with a robust and efficient database-driven approach.

The primary objective of the system is to facilitate the smooth and organized conduct of examinations by providing a centralized platform for storing, managing, and retrieving examination-related information. It covers various aspects of the examination process, including subject management, student registration, scheduling, room allocation, invigilator assignment, and exam material management.

By implementing this Examination Database Management System, educational institutions can eliminate the cumbersome and error-prone manual processes associated with exam management. The system offers several benefits, such as improved efficiency, accuracy, and transparency in managing examination-related tasks. It simplifies the work of administrators, faculty members, and students by providing an intuitive interface to interact with the system.

The Examination Database Management System also offers the potential for future enhancements, such as integration with online examination platforms, advanced reporting and analytics, mobile application support, and adaptive testing methodologies. These improvements can further enhance the system's capabilities and adaptability to meet the evolving needs of educational institutions.

**1.2 Problem Statement**

The Examination Database Management System is developed to address the challenges faced by educational institutions in managing examinations. The current manual and fragmented processes lead to inefficiencies, errors, and lack of transparency. This system aims to automate and streamline the examination management process, replacing manual tasks with an efficient and centralized database system.

The existing manual processes, such as paper-based registration, scheduling, and result management, are time-consuming and prone to errors. The Examination Database Management System eliminates these challenges by providing a centralized platform for managing student records, exam schedules, and room allocations. This ensures accuracy, reduces duplication of efforts, and simplifies the overall examination administration.

Resource utilization is a critical aspect of examination management. The system optimizes the allocation of resources, such as examination rooms, invigilators, and exam materials. By automating the allocation process, conflicts and overlapping schedules are minimized, and resources are utilized efficiently. This leads to cost savings and better utilization of available resources.

**1.3 Objectives**

Automate the process of scheduling exams by storing and managing exam schedules in a centralized database, and

Efficiently allocate exam rooms to students by maintaining a database of available rooms and their capacities.

Streamline the invigilator assignment process by storing invigilator information and assigning them to specific exam rooms, and

Facilitate subject management by organizing subject details, including associated exam schedules, total marks, and semester information.

Simplify the management of study materials by storing and categorizing exam materials with relevant subject references,and

Improve data accuracy, retrieval, and reporting capabilities to enhance decision-making and overall examination process efficiency.

By achieving these objectives, the project aims to enhance the examination management process, reduce manual effort, minimize errors, and provide a more convenient and reliable system for students, faculty, and administrators involved in the examination process.

# CHAPTER 2. DATABASE DESIGN

**2.1 List of Attributes, entities and relationship**

## Entity Name: dept

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| DID | int |
| DNAME | varchar(20) |

## Entity Name: block

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| b\_id | int |
| b\_name | varchar(20) |

## Entity Name: exam\_schedule

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| ex\_id | int |
| ex\_date | date |
| ex\_st\_time | time |
| ex\_en\_time | time |

## Entity Name: subjects

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| sub\_id | Varchar(30)\_ |
| Sub\_name | Varchar(30) |
| Ex\_id | Foreign key references exam\_schedule(ex\_id) |
| Sub\_tmarks | int |
| Sub\_sem | int |

## Entity Name: dep\_sub

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| Sub\_id | Foreign key references subjects(sub\_id) |
| did | Foreign key references dept(sub\_id) |

## Entity Name: exam\_room

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| R\_id | int |
| R\_cap | int |

## 

## Entity Name: block\_room

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| R\_id | Foreign key references exam\_room(r\_id) |
| B\_id | Foreign key references block(b\_id) |
| In\_id | Foreign key references invigilator(invig\_id) |

## Entity Name: student

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| St\_id | Varchar(30) |
| St\_name | Varchar(30) |
| St\_dept | Foreign key references dept(did) |

## Entity Name: exam\_material

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| Material\_id | int |
| Sub\_id | Foreign key references subjects(sub\_id) |
| Material name | Varchar(30) |
| Description | text |

## Entity Name: invigilator

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| Invig\_id | int |
| Invig\_name | Varchar(30) |
| dep | Foreign key references dept(did) |

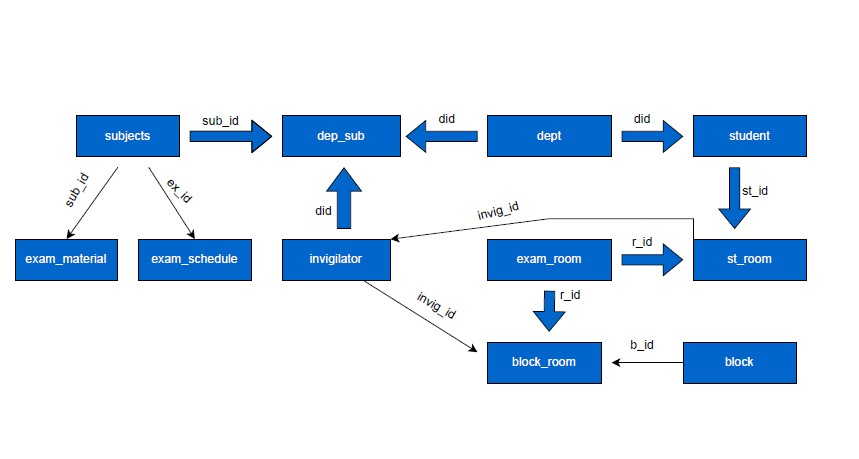
## Entity Name: st\_room

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| St\_id | Foreign key references exam\_room(r\_id) |
| R\_id | Foreign key references student(st\_id) |

## Entity Name: invig\_exam

|  |  |
| --- | --- |
| **Attributes** | **Type** |
| invig\_id | Foreign key references invigilator(invig\_id) |
| Ex\_id | Foreign key references exam\_schedule(ex\_id) |

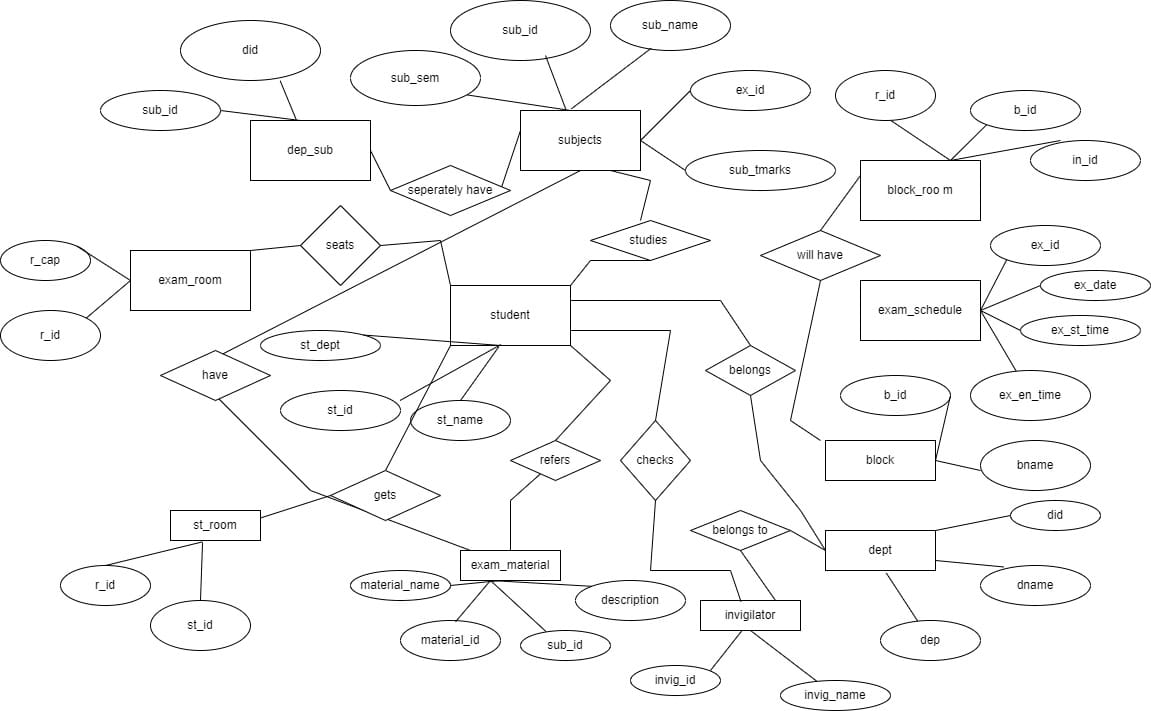
# 2.1.1 Entities and their relationships:



The above diagram is a simple representation of entities which shows the connectivity between all the entities and the relationship between various entities

To know in detail about the types of relationships that exist between all the entities and to know the different attributes that describes about the entity we design ER(entity relation) diagram.

# 2.2 E-R Diagram



**CHAPTER 3. RELATIONAL MODEL**

# 3.1 Database languages

Four categories of database languages :

**1.** **Data definition language (DDL)**

Data definition language (DDL) creates the framework of the database by specifying the database schema, which is the structure that represents the organization of data. Its common uses include the creation and alteration of tables, files, indexes and columns within the database. This language also allows users to rename or drop the existing database or its components.

Here's a list of DDL statements:

• CREATE: Creates a new database or object, such as a table, index or column.

• ALTER: Changes the structure of the database or object.

• DROP: Deletes the database or existing objects.

• RENAME: Renames the database or existing objects.

**2.** **Data manipulation language (DML)**

Data manipulation language (DML) provides operations that handle user requests, offering a way to access and manipulate the data that users store within a database. Its common functions include inserting, updating and retrieving data from the database.

Here's a list of DML statements:

• INSERT: Adds new data to the existing database table.

• UPDATE: Changes or updates values in the table.

• DELETE: Removes records or rows from the table.

• SELECT: Retrieves data from the table or multiple tables.

**3. Data control language (DCL)**

Data control language (DCL) controls access to the data that users store within a database. Essentially, this language controls the rights and permissions of the database system. It allows users to grant or revoke privileges to the database.

Here's a list of DCL statements:

• GRANT: Gives a user access to the database.

• REVOKE: Removes a user's access to the database.

**4. Transaction control language (TCL)**

Transaction control language (TCL) manages the transactions within a database. Transactions group a set of related tasks into a single, executable task. All the tasks must succeed in order for the transaction to work. Here's a list of TCL statements:

• COMMIT: Carries out a transaction.

• ROLLBACK: Restores a transaction if any tasks fail to execute.

**3.2 Table Description**

Following are the tables along with constraints used **examination** **database management system for students**

1.Table: dept

Purpose: This table stores information about different departments.

Attributes:

DID: An integer that serves as the department's ID.

DNAME: A string (varchar) of maximum length 20 that stores the department's name.

Constraints:

Primary Key: did

2.Table: block

Purpose: This table stores details about blocks.

Attributes:

b\_id: An integer that serves as the block's ID.

b\_name: A string (varchar) of maximum length 20 that stores the block's name.

Constraints:

Primary Key: b\_id

3.Table: exam\_schedule

Purpose: This table stores information about exam schedules.

Attributes:

ex\_id: An integer that serves as the exam schedule's ID.

ex\_date: A date that stores the date of the exam.

ex\_st\_time: A time that stores the start time of the exam.

ex\_en\_time: A time that stores the end time of the exam.

Constraints:

Primary Key: ex\_id

4.Table: subjects

Purpose: This table stores information about subjects.

Attributes:

sub\_id: A string (varchar) of maximum length 30 that serves as the subject's ID.

Sub\_name: A string (varchar) of maximum length 30 that stores the subject's name.

Ex\_id: A foreign key that references the ex\_id attribute in the exam\_schedule table, linking subjects to specific exam schedules.

Sub\_tmarks: An integer that stores the total marks of the subject.

Sub\_sem: An integer that stores the semester of the subject.

Constraints:

Primary Key: sub\_id

Foreign Key: Ex\_id references exam\_schedule(ex\_id)

5.Table: dep\_sub

Purpose: This table establishes the relationship between departments and subjects.

Attributes:

Sub\_id: A foreign key that references the sub\_id attribute in the subjects table, connecting subjects to their respective departments.

did: A foreign key that references the did attribute in the dept table, indicating the department to which the subject belongs.

Constraints:

Foreign Key: Sub\_id references subjects(sub\_id)

Foreign Key: did references dept(DID)

6.Table: exam\_room

Purpose: This table stores information about exam rooms.

Attributes:

R\_id: An integer that serves as the exam room's ID.

R\_cap: An integer that stores the capacity of the exam room.

Constraints:

Primary Key: R\_id

7.Table: block\_room

Purpose: This table establishes the relationship between blocks, exam rooms, and invigilators.

Attributes:

R\_id: A foreign key that references the R\_id attribute in the exam\_room table, connecting exam rooms to specific blocks.

B\_id: A foreign key that references the b\_id attribute in the block table, indicating the block associated with the room.

In\_id: A foreign key that references the invig\_id attribute in the invigilator table, linking invigilators to the respective block rooms.

Constraints:

Foreign Key: R\_id references exam\_room(R\_id)

Foreign Key: B\_id references block(b\_id)

Foreign Key: In\_id references invigilator(invig\_id)

8.Table: student

Purpose: This table stores information about students.

Attributes:

St\_id: A string (varchar) of maximum length 30 that serves as the student's ID.

St\_name: A string (varchar) of maximum length 30 that stores the student's name.

St\_dept: A foreign key that references the did attribute in the dept table, indicating the department to which the student belongs.

Constraints:

Primary Key: St\_id

Foreign Key: St\_dept references dept(DID)

9.Table: exam\_material

Purpose: This table stores information about exam materials.

Attributes:

Material\_id: An integer that serves as the material's ID.

Sub\_id: A foreign key that references the sub\_id attribute in the subjects table, indicating the subject to which the material is related.

Material\_name: A string (varchar) of maximum length 30 that stores the material's name.

Description: A text field that stores the description of the material.

Constraints:

Primary Key: Material\_id

Foreign Key: Sub\_id references subjects(sub\_id)

10.Table: invigilator

Purpose: This table stores information about invigilators.

Attributes:

Invig\_id: An integer that serves as the invigilator's ID.

Invig\_name: A string (varchar) of maximum length 30 that stores the invigilator's name.

dep: A foreign key that references the did attribute in the dept table, indicating the department to which the invigilator belongs.

Constraints:

Primary Key: Invig\_id

Foreign Key: dep references dept(DID)

11.Table: st\_id, r\_id (unclear entity name)

Purpose: The purpose of this table is not clear from the provided information. The names of the attributes suggest it may capture a relationship between student IDs and room IDs, but the specific purpose is unclear.

Attributes:

St\_id: A foreign key that references the r\_id attribute in the exam\_room table.

R\_id: A foreign key that references the st\_id attribute in the student table.

12.Table: invig\_exam

Purpose: This table establishes the relationship between invigilators and exam schedules.

Attributes:

invig\_id: A foreign key that references the invig\_id attribute in the invigilator table, indicating the invigilator assigned to a specific exam.

Ex\_id: A foreign key that references the ex\_id attribute in the exam\_schedule table, linking the exam schedule to the assigned invigilator.

Constraints:

Foreign Key: invig\_id references invigilator(invig\_id)

Foreign Key: Ex\_id references exam\_schedule(ex\_id)

The above descripted information is the brief detailing about the entities

and relations and their attributes.

**3.3 Relational Database Scheme**

The relational database schema for examination database management system for students

database is as follows:

1.dept (DID, DNAME)

2.block (b\_id, b\_name)

3.exam\_schedule (ex\_id, ex\_date, ex\_st\_time, ex\_en\_time)

4.subjects (sub\_id, Sub\_name, Ex\_id, Sub\_tmarks, Sub\_sem)

5.dep\_sub (Sub\_id, did)

6.exam\_room (R\_id, R\_cap)

7.block\_room (R\_id, B\_id, In\_id)

8.student (St\_id, St\_name, St\_dept)

9.exam\_material (Material\_id, Sub\_id, Material\_name, Description)

10.invigilator (Invig\_id, Invig\_name, dep)

11.st\_id\_r\_id (St\_id, R\_id)

12.invig\_exam (invig\_id, Ex\_id)

**3.4 Relational Queries**

/\*create database semister\_exams\*/

/\*create a table department\*/

create table dept(

did int primary key,

dname varchar(20) not null,

);

insert into dept(did,dname)

values(101,'csse'),

(102,'ece'),

(103,'eee'),

(104,'cse'),

(105,'mech'),

(106,'civil')

select \* from dept

Output:

+-----+-------+

| did | dname |

+-----+-------+

| 101 | csse |

| 102 | ece |

| 103 | eee |

| 104 | cse |

| 105 | mech|

| 106 | civil |

+-----+-------+

/\*create a table block\*/

create table block(

b\_id int primary key,

b\_name varchar(20) not null,

);

insert into block(b\_id,b\_name)

values(1401,'M block'),

(1402,'MNS block'),

(1403,'G block'),

(1404,'ME block')

select \* from block

Output:

+------+-----------+

| b\_id | b\_name |

+------+-----------+

| 1401 | M block |

| 1402 | MNS block |

| 1403 | G block |

| 1404 | ME block |

+------+-----------+

/\*create a table exam\_schedule\*/

create table exam\_schedule(

ex\_id int primary key,

ex\_date date not null,

ex\_st\_time time not null,

ex\_en\_time time not null

);

INSERT INTO exam\_schedule(ex\_id, ex\_date, ex\_st\_time,ex\_en\_time)

VALUES

(1, '2023-06-22', '10:00:00','1:00:00'),

(2, '2023-06-24', '10:00:00','1:00:00'),

(3, '2023-06-26','10:00:00','1:00:00'),

(4, '2023-06-28', '10:00:00','1:00:00'),

(5, '2023-06-30', '10:00:00','1:00:00')

**Output:**

+-------+------------+-----------+-----------+

| ex\_id | ex\_date | ex\_st\_time | ex\_en\_time |

+-------+------------+-----------+-----------+

| 1 | 2023-06-22 | 10:00:00 | 1:00:00 |

| 2 | 2023-06-24 | 10:00:00 | 1:00:00 |

| 3 | 2023-06-26 | 10:00:00 | 1:00:00 |

| 4 | 2023-06-28 | 10:00:00 | 1:00:00 |

| 5 | 2023-06-30 | 10:00:00 | 1:00:00 |

+-------+------------+-----------+-----------+

/\* create a table subjects\*/

create table subjects(

sub\_id varchar(30) primary key,

sub\_name varchar(30) not null,

ex\_id int foreign key references exam\_schedule(ex\_id),

sub\_tmarks int not null,

sub\_sem int not null,

);

insert into subjects(sub\_id,sub\_name,ex\_id,sub\_tmarks,sub\_sem)

values('20BT50502','DAA',1,70,2-2),

('20BT12901','DMS',2,70,2-2),

('20BT41501','TOC',3,70,2-2),

('20BT40501','Dbms',4,70,2-2),

('20BT31501','OS',1,70,2-2),

('20BT31201','SE',2,70,2-2),

('20BT40101','EH',1,70,2-2),

('20BT40102','EE',2,70,2-2),

('20BT40103','SM',3,70,2-2),

('20BT40104','SA',4,70,2-2),

('20BT40301','DoM',1,70,2-2),

('20BT40302','EM and MT',2,70,2-2),

('20BT40303','FM and M',3,70,2-2),

('20BT40304','TE-1',4,70,2-2),

('20BT40401','AC',1,70,2-2),

('20BT40402','ECA and D',2,70,2-2),

('20BT40403','L and D IC A',3,70,2-2),

('20BT40404','P and SP',4,70,2-2),

('20BT40405','M and I',5,70,2-2),

('20BT40441','AE',1,70,2-2),

('20BT40201','CS',2,70,2-2),

('20BT40202','DE',3,70,2-2),

('20BT40203','EM-2',4,70,2-2),

('20BT40204','E MTS',5,70,2-2)

**Output:**

+------------+-----------+-------+------------+---------+

| sub\_id | sub\_name | ex\_id | sub\_tmarks | sub\_sem |

+------------+-----------+-------+------------+---------+

| 20BT50502 | DAA | 1 | 70 | 0 |

| 20BT12901 | DMS | 2 | 70 | 0 |

| 20BT41501 | TOC | 3 | 70 | 0 |

| 20BT40501 | Dbms | 4 | 70 | 0 |

| 20BT31501 | OS | 1 | 70 | 0 |

| 20BT31201 | SE | 2 | 70 | 0 |

| 20BT40101 | EH | 1 | 70 | 0 |

| 20BT40102 | EE | 2 | 70 | 0 |

| 20BT40103 | SM | 3 | 70 | 0 |

| 20BT40104 | SA | 4 | 70 | 0 |

| 20BT40301 | DoM | 1 | 70 | 0 |

| 20BT40302 | EM and MT | 2 | 70 | 0 |

| 20BT40303 | FM and M | 3 | 70 | 0 |

| 20BT40304 | TE-1 | 4 | 70 | 0 |

| 20BT40401 | AC | 1 | 70 | 0 |

| 20BT40402 | ECA and D | 2 | 70 | 0 |

| 20BT40403 |L and D IC A| 3 | 70 | 0 |

| 20BT40404 | P and SP | 4 | 70 | 0 |

| 20BT40405 | M and I | 5 | 70 | 0 |

| 20BT40441 | AE | 1 | 70 | 0 |

| 20BT40201 | CS | 2 | 70 | 0 |

| 20BT40202 | DE | 3 | 70 | 0 |

| 20BT40203 | EM-2 | 4 | 70 | 0 |

| 20BT40204 | E MTS | 5 | 70 | 0 |

+------------+-----------+-------+------------+---------+

/\* create a table dept\_sub \*/

create table dep\_sub(

sub\_id varchar(30) foreign key references subjects(sub\_id),

did int foreign key references dept(did)

);

insert into dep\_sub(sub\_id,did)

values('20BT50502', 101),

('20BT12901', 101),

('20BT41501', 101),

('20BT40501', 101),

('20BT41501', 104),

('20BT40501', 104),

('20BT31501', 104),

('20BT31201', 104),

('20BT40101', 106),

('20BT40102', 106),

('20BT40103', 106),

('20BT40104', 106),

('20BT40301', 105),

('20BT40302', 105),

('20BT40303', 105),

('20BT40304', 105),

('20BT40401', 102),

('20BT40402', 102),

('20BT40403', 102),

('20BT40404', 102),

('20BT40405', 102),

('20BT40441', 103),

('20BT40201', 103),

('20BT40202', 103),

('20BT40203', 103),

('20BT40204', 103)

**Output:**

+--------------+-----+

| sub\_id | did |

+--------------+-----+

| 20BT50502 | 101 |

| 20BT12901 | 101 |

| 20BT41501 | 101 |

| 20BT40501 | 101 |

| 20BT41501 | 104 |

| 20BT40501 | 104 |

| 20BT31501 | 104 |

| 20BT31201 | 104 |

| 20BT40101 | 106 |

| 20BT40102 | 106 |

| 20BT40103 | 106 |

| 20BT40104 | 106 |

| 20BT40301 | 105 |

| 20BT40302 | 105 |

| 20BT40303 | 105 |

| 20BT40304 | 105 |

| 20BT40401 | 102 |

| 20BT40402 | 102 |

| 20BT40403 | 102 |

| 20BT40404 | 102 |

| 20BT40405 | 102 |

| 20BT40441 | 103 |

| 20BT40201 | 103 |

| 20BT40202 | 103 |

| 20BT40203 | 103 |

| 20BT40204 | 103 |

+--------------+-----+

/\*create table exam\_room \*/

create table exam\_room(

r\_id int primary key,

r\_cap int null,

);

INSERT INTO exam\_room (r\_id, r\_cap)

VALUES

(226, 20),

(227, 20),

(228, 20),

(229, 20),

(607, 30),

(608, 30),

(609, 30),

(610, 30),

(1060, 26),

(1061, 26),

(1062, 26),

(1063, 26),

(2126, 25),

(2127, 25),

(2128, 25),

(2129, 25);

Output:

+------+-------+

| r\_id | r\_cap |

+------+-------+

| 226 | 20 |

| 227 | 20 |

| 228 | 20 |

| 229 | 20 |

| 607 | 30 |

| 608 | 30 |

| 609 | 30 |

| 610 | 30 |

| 1060 | 26 |

| 1061 | 26 |

| 1062 | 26 |

| 1063 | 26 |

| 2126 | 25 |

| 2127 | 25 |

| 2128 | 25 |

| 2129 | 25 |

+------+-------+

/\* create table block\_room\*/

create table block\_room(

r\_id int foreign key references exam\_room(r\_id),

b\_id int foreign key references block(b\_id),

in\_id int foreign key references invigilator(invig\_id));

insert into block\_room(r\_id,b\_id,in\_id)

values

(226, 1401, 1920125601),

(227, 1401, 1920125602),

(228, 1401, 1920125603),

(229, 1401, 1920125604),

(607, 1402, 1920125605),

(608, 1402, 1920125606),

(609, 1402, 1920125607),

(610, 1402, 1920125608),

(2126, 1403, 1920125609),

(2127, 1403, 1920125610),

(2128, 1403, 1920125611),

(2129, 1403, 1920125612),

(1060, 1404, 1920125613),

(1061, 1404, 1920125614),

(1062, 1404, 1920125615),

(1063, 1404, 1920125616);

**OUTPUT:**

+------+-------+-------------+

| r\_id | b\_id | in\_id |

+------+-------+-------------+

| 226 | 1401 | 1920125601 |

| 227 | 1401 | 1920125602 |

| 228 | 1401 | 1920125603 |

| 229 | 1401 | 1920125604 |

| 607 | 1402 | 1920125605 |

| 608 | 1402 | 1920125606 |

| 609 | 1402 | 1920125607 |

| 610 | 1402 | 1920125608 |

| 2126 | 1403 | 1920125609 |

| 2127 | 1403 | 1920125610 |

| 2128 | 1403 | 1920125611 |

| 2129 | 1403 | 1920125612 |

| 1060 | 1404 | 1920125613 |

| 1061 | 1404 | 1920125614 |

| 1062 | 1404 | 1920125615 |

| 1063 | 1404 | 1920125616 |

+------+-------+-------------+

/\*create table student\*/

create table student(

st\_id varchar(30) primary key,

st\_name varchar(30) not null,

st\_dept int foreign key references dept(did)

);

INSERT INTO student(st\_id, st\_name,st\_dept)

VALUES

('21121a1501', 'tharun',101),

('21121a1502', 'thrisha',101),

('21121a1503', 'sasi',101),

('21121a1504', 'avinash',101),

('21121a1505', 'mani',101),

('21121a1506', 'yamini',101),

('21121a1507', 'manoj',101),

('21121a1508', 'sandeep',101),

('21121a1509', 'saikiran',101),

('21121a1510', 'sai kumar',101),

('21121a1511', 'rajeswara',101),

('21121a1512', 'chandrahas',101),

('21121a1513', 'vishnu',101),

('21121a1514', 'amulya',101),

('21121a1515', 'mallesh',101),

('21121a1516', 'kiranami',101),

('21121a1517', 'mukta',101),

('21121a1518', 'tocci',101),

('21121a1519', 'vamsi priya',101),

('21121a1520', 'ranga',101),

('21121a1521', 'hemevalli',101),

('21121a1522', 'lokesk kumar',101),

('21121a1523', 'hyndavi',101),

('21121a1524', 'anwar',101),

('21121a1525', 'navya deepti',101),

('21121a1526', 'sudheer',101),

('21121a1527', 'aswini',101),

('21121a1528', 'sai charan',101),

('21121a1529', 'rakesh',101),

('21121a1530', 'hussain',101),

('21121a1531', 'narmada',101),

('21121a1532', 'gowtham',101),

('21121a1533', 'abhishek',101),

('21121a1534', 'sai kiran yadav',101),

('21121a1535', 'ujwala',101),

('21121a1536', 'willson',101),

('21121a1537', 'sidhartha',101),

('21121a1538', 'mahathi',101),

('21121a1539', 'vandana',101),

('21121a1540', 'lokeshwar',101)

INSERT INTO student (st\_id, st\_name, st\_dept)

VALUES

('21121a1401', 'Ravi Reddy', 102),

('21121a1402', 'Priya Sharma', 102),

('21121a1403', 'Sandeep Naidu', 102),

('21121a1404', 'Ananya Rao', 102),

('21121a1405', 'Vivek Kumar', 102),

('21121a1406', 'Divya Reddy', 102),

('21121a1407', 'Nithya Sharma', 102),

('21121a1408', 'Ajay Naidu', 102),

('21121a1409', 'Priya Rao', 102),

('21121a1410', 'Sandeep Kumar', 102),

('21121a1411', 'Anjali Reddy', 102),

('21121a1412', 'Rohit Sharma', 102),

('21121a1413', 'Neha Naidu', 102),

('21121a1414', 'Rakesh Rao', 102),

('21121a1415', 'Swathi Kumar', 102),

('21121a1416', 'Rajesh Reddy', 102),

('21121a1417', 'Sushma Rao', 102),

('21121a1418', 'Ravi Kumar', 102),

('21121a1419', 'Priya Reddy', 102),

('21121a1420', 'Sandeep Sharma', 102),

('21121a1421', 'Ananya Naidu', 102),

('21121a1422', 'Vivek Rao', 102),

('21121a1423', 'Divya Kumar', 102),

('21121a1424', 'Nithya Reddy', 102),

('21121a1425', 'Ajay Sharma', 102),

('21121a1426', 'Priya Naidu', 102),

('21121a1427', 'Sandeep Rao', 102),

('21121a1428', 'Anjali Kumar', 102),

('21121a1429', 'Rohit Reddy', 102),

('21121a1430', 'Neha Sharma', 102),

('21121a1431', 'Rakesh Naidu', 102),

('21121a1432', 'Swathi Rao', 102),

('21121a1433', 'Rajesh Kumar', 102),

('21121a1434', 'Sushma Reddy', 102),

('21121a1435', 'Ravi Sharma', 102),

('21121a1436', 'Priya Nair', 102),

('21121a1437', 'Sandeep Patel', 102),

('21121a1438', 'Ananya Sharma', 102),

('21121a1439', 'Vivek Nair', 102),

('21121a1440', 'Divya Sharma', 102)

select \* from student

INSERT INTO student (st\_id, st\_name, st\_dept)

VALUES

('21121a0201', 'Safiyah Khan', 103),

('21121a0202', 'Vivek Kumar', 103),

('21121a0203', 'Manoj Reddy', 103),

('21121a0204', 'Abhishek Reddy', 103),

('21121a0205', 'Sarah Thomas', 103),

('21121a0206', 'Praveen Kumar', 103),

('21121a0207', 'Prabhu Raja', 103),

('21121a0208', 'Wilson Mathew', 103),

('21121a0209', 'Ananya Khan', 103),

('21121a0210', 'Nithya Sharma', 103),

('21121a0211', 'Amir Ahmed', 103),

('21121a0212', 'Rohit Reddy', 103),

('21121a0213', 'Neha Patel', 103),

('21121a0214', 'Sofia Joseph', 103),

('21121a0215', 'Anjali Naidu', 103),

('21121a0216', 'Divya Kumar', 103),

('21121a0217', 'Rajesh Mathew', 103),

('21121a0218', 'Sushma Reddy', 103),

('21121a0219', 'Ravi Patel', 103),

('21121a0220', 'Sara Ahmed', 103),

('21121a0221', 'Rakesh Nair', 103),

('21121a0222', 'Prabhu Reddy', 103),

('21121a0223', 'Sandeep Kumar', 103),

('21121a0224', 'Kareem Khan', 103),

('21121a0225', 'Swathi Thomas', 103),

('21121a0226', 'Ananya Khan', 103),

('21121a0227', 'Priya Sharma', 103),

('21121a0228', 'Ajay Naidu', 103),

('21121a0229', 'Neha Patel', 103),

('21121a0230', 'Sandeep Reddy', 103),

('21121a0231', 'Sofia Ahmed', 103),

('21121a0232', 'Praveen Reddy', 103),

('21121a0233', 'Vivek Kumar', 103),

('21121a0234', 'Anjali Patel', 103),

('21121a0235', 'Priya Reddy', 103),

('21121a0236', 'Rohit Khan', 103),

('21121a0237', 'Sara Reddy', 103),

('21121a0238', 'Amanullah Khan', 103),

('21121a0239', 'Christina Mathew', 103),

('21121a0240', 'Rahul Kumar', 103)

INSERT INTO student (st\_id, st\_name, st\_dept)

VALUES

('21121a1101', 'Manoj Reddy', 104),

('21121a1102', 'Abhishek Kumar', 104),

('21121a1103', 'Praveen Naidu', 104),

('21121a1104', 'Prabhu Sharma', 104),

('21121a1105', 'Wilson Rao', 104),

('21121a1106', 'Ayesha Begum', 104),

('21121a1107', 'Fatima Khan', 104),

('21121a1108', 'Sandeep Kumar', 104),

('21121a1109', 'Anita Reddy', 104),

('21121a1110', 'John Christian', 104),

('21121a1111', 'Rajesh Patel', 104),

('21121a1112', 'Sneha Sharma', 104),

('21121a1113', 'Muhammad Khan', 104),

('21121a1114', 'Deepika Naidu', 104),

('21121a1115', 'Hari Prasad', 104),

('21121a1116', 'Sarah Thomas', 104),

('21121a1117', 'Vijay Kumar', 104),

('21121a1118', 'Nisha Reddy', 104),

('21121a1119', 'Priyanka Singh', 104),

('21121a1120', 'Vikram Sharma', 104),

('21121a1121', 'Aisha Siddiqui', 104),

('21121a1122', 'Krishna Kumar', 104),

('21121a1123', 'Shweta Gupta', 104),

('21121a1124', 'Ahmed Ali', 104),

('21121a1125', 'Nandini Reddy', 104),

('21121a1126', 'Kevin Mathew', 104),

('21121a1127', 'Shalini Rao', 104),

('21121a1128', 'Rahul Verma', 104),

('21121a1129', 'Neha Kumari', 104),

('21121a1130', 'Sanjay Singh', 104),

('21121a1131', 'Mehnaz Begum', 104),

('21121a1132', 'Vijay Sharma', 104),

('21121a1133', 'Amrita Patel', 104),

('21121a1134', 'Imran Khan', 104),

('21121a1135', 'Ayesha Siddiqui', 104),

('21121a1136', 'Rahul Sharma', 104),

('21121a1137', 'Riya Nair', 104),

('21121a1138', 'Siddharth Patel', 104),

('21121a1139', 'Zara Khan', 104),

('21121a1140', 'Varun Sharma', 104)

INSERT INTO student (st\_id, st\_name, st\_dept)

VALUES

('21121a1301', 'Aditya Sharma', 105),

('21121a1302', 'Niharika Reddy', 105),

('21121a1303', 'Rajeev Kumar', 105),

('21121a1304', 'Kirti Singh', 105),

('21121a1305', 'Rahul Naidu', 105),

('21121a1306', 'Alisha Verma', 105),

('21121a1307', 'Kunal Sharma', 105),

('21121a1308', 'Pooja Patel', 105),

('21121a1309', 'Arun Reddy', 105),

('21121a1310', 'Shweta Gupta', 105),

('21121a1311', 'Vikram Kumar', 105),

('21121a1312', 'Nisha Verma', 105),

('21121a1313', 'Rahul Patel', 105),

('21121a1314', 'Neha Kumari', 105),

('21121a1315', 'Vivek Singh', 105),

('21121a1316', 'Sneha Naidu', 105),

('21121a1317', 'Akash Sharma', 105),

('21121a1318', 'Kritika Reddy', 105),

('21121a1319', 'Rajesh Verma', 105),

('21121a1320', 'Preeti Patel', 105),

('21121a1321', 'Vishal Kumar', 105),

('21121a1322', 'Divya Sharma', 105),

('21121a1323', 'Rohit Naidu', 105),

('21121a1324', 'Anjali Verma', 105),

('21121a1325', 'Ravi Reddy', 105),

('21121a1326', 'Kavya Singh', 105),

('21121a1327', 'Rahul Kumar', 105),

('21121a1328', 'Neha Verma', 105),

('21121a1329', 'Ajay Patel', 105),

('21121a1330', 'Riya Kumari', 105),

('21121a1331', 'Siddharth Naidu', 105),

('21121a1332', 'Priya Sharma', 105),

('21121a1333', 'Vikas Reddy', 105),

('21121a1334', 'Nisha Verma', 105),

('21121a1335', 'Ravi Patel', 105),

('21121a1336', 'Anjali Kumari', 105),

('21121a1337', 'Rahul Naidu', 105),

('21121a1338', 'Pooja Verma', 105),

('21121a1339', 'Kunal Reddy', 105),

('21121a1340', 'Alisha Singh', 105);

INSERT INTO student (st\_id, st\_name, st\_dept)

VALUES

('21121a1201', 'Aman Gupta', 106),

('21121a1202', 'Riya Sharma', 106),

('21121a1203', 'Prateek Patel', 106),

('21121a1204', 'Anjali Reddy', 106),

('21121a1205', 'Vikram Kumar', 106),

('21121a1206', 'Neha Verma', 106),

('21121a1207', 'Rahul Naidu', 106),

('21121a1208', 'Sneha Sharma', 106),

('21121a1209', 'Akash Reddy', 106),

('21121a1210', 'Kirti Patel', 106),

('21121a1211', 'Vivek Verma', 106),

('21121a1212', 'Riya Naidu', 106),

('21121a1213', 'Ankit Sharma', 106),

('21121a1214', 'Nisha Reddy', 106),

('21121a1215', 'Ravi Kumar', 106),

('21121a1216', 'Alisha Patel', 106),

('21121a1217', 'Rahul Sharma', 106),

('21121a1218', 'Pooja Reddy', 106),

('21121a1219', 'Siddharth Kumar', 106),

('21121a1220', 'Priya Verma', 106),

('21121a1221', 'Kunal Naidu', 106),

('21121a1222', 'Riya Sharma', 106),

('21121a1223', 'Ravi Patel', 106),

('21121a1224', 'Anjali Kumar', 106),

('21121a1225', 'Aman Reddy', 106),

('21121a1226', 'Neha Gupta', 106),

('21121a1227', 'Rahul Sharma', 106),

('21121a1228', 'Sneha Patel', 106),

('21121a1229', 'Akash Reddy', 106),

('21121a1230', 'Kirti Verma', 106),

('21121a1231', 'Vivek Naidu', 106),

('21121a1232', 'Riya Sharma', 106),

('21121a1233', 'Ankit Reddy', 106),

('21121a1234', 'Nisha Patel', 106),

('21121a1235', 'Ravi Kumar', 106),

('21121a1236', 'Alisha Reddy', 106),

('21121a1237', 'Rahul Sharma', 106),

('21121a1238', 'Pooja Patel', 106),

('21121a1239', 'Siddharth Reddy', 106),

('21121a1240', 'Priya Kumar', 106);

**Output:**

+-----------+----------------+---------+

| st\_id | st\_name | st\_dept |

+-----------+----------------+---------+

| 21121a1501| tharun | 101 |

| 21121a1502| thrisha | 101 |

| 21121a1503| sasi | 101 |

| 21121a1504| avinash | 101 |

| 21121a1505| mani | 101 |

| 21121a1506| yamini | 101 |

| 21121a1507| manoj | 101 |

| 21121a1508| sandeep | 101 |

| 21121a1509| saikiran | 101 |

| 21121a1510| sai kumar | 101 |

| 21121a1511| rajeswara | 101 |

| 21121a1512| chandrahas | 101 |

| 21121a1513| vishnu | 101 |

| 21121a1514| amulya | 101 |

| 21121a1515| mallesh | 101 |

| 21121a1516| kiranami | 101 |

| 21121a1517| mukta | 101 |

| 21121a1518| tocci | 101 |

| 21121a1519| vamsi priya | 101 |

| 21121a1520| ranga | 101 |

| 21121a1521| hemevalli | 101 |

| 21121a1522| lokesk kumar | 101 |

| 21121a1523| hyndavi | 101 |

| 21121a1524| anwar | 101 |

| 21121a1525| navya deepti | 101 |

| 21121a1526| sudheer | 101 |

| 21121a1527| aswini | 101 |

| 21121a1528| sai charan | 101 |

| 21121a1529| rakesh | 101 |

| 21121a1530| hussain | 101 |

| 21121a1531| narmada | 101 |

| 21121a1532| gowtham | 101 |

| 21121a1533| abhishek | 101 |

| 21121a1534|sai kiran yadav | 101 |

| 21121a1535| ujwala | 101 |

| 21121a1536| willson | 101 |

| 21121a1537| sidhartha | 101 |

| 21121a1538| mahathi | 101 |

| 21121a1539| vandana | 101 |

| 21121a1540| lokeshwar | 101 |

| 21121a1401 | Ravi Reddy | 102 |

| 21121a1402 | Priya Sharma | 102 |

| 21121a1403 | Sandeep Naidu | 102 |

| 21121a1404 | Ananya Rao | 102 |

| 21121a1405 | Vivek Kumar | 102 |

| 21121a1406 | Divya Reddy | 102 |

| 21121a1407 | Nithya Sharma | 102 |

| 21121a1408 | Ajay Naidu | 102 |

| 21121a1409 | Priya Rao | 102 |

| 21121a1410 | Sandeep Kumar | 102 |

| 21121a1411 | Anjali Reddy | 102 |

| 21121a1412 | Rohit Sharma | 102 |

| 21121a1413 | Neha Naidu | 102 |

| 21121a1414 | Rakesh Rao | 102 |

| 21121a1415 | Swathi Kumar | 102 |

| 21121a1416 | Rajesh Reddy | 102 |

| 21121a1417 | Sushma Rao | 102 |

| 21121a1418 | Ravi Kumar | 102 |

| 21121a1419 | Priya Reddy | 102 |

| 21121a1420 | Sandeep Sharma | 102 |

| 21121a1421 | Ananya Naidu | 102 |

| 21121a1422 | Vivek Rao | 102 |

| 21121a1423 | Divya Kumar | 102 |

| 21121a1424 | Nithya Reddy | 102 |

| 21121a1425 | Ajay Sharma | 102 |

| 21121a1426 | Priya Naidu | 102 |

| 21121a1427 | Sandeep Rao | 102 |

| 21121a1428 | Anjali Kumar | 102 |

| 21121a1429 | Rohit Reddy | 102 |

| 21121a1430 | Neha Sharma | 102 |

| 21121a1431 | Rakesh Naidu | 102 |

| 21121a1432 | Swathi Rao | 102 |

| 21121a1433 | Rajesh Kumar | 102 |

| 21121a1434 | Sushma Reddy | 102 |

| 21121a1435 | Ravi Sharma | 102 |

| 21121a1436 | Priya Nair | 102 |

| 21121a1437 | Sandeep Patel | 102 |

| 21121a1438 | Ananya Sharma | 102 |

| 21121a1439 | Vivek Nair | 102 |

| 21121a1440 | Divya Sharma | 102 |

| 21121a0201 | Safiyah Khan | 103 |

| 21121a0202 | Vivek Kumar | 103 |

| 21121a0203 | Manoj Reddy | 103 |

| 21121a0204 | Abhishek Reddy | 103 |

| 21121a0205 | Sarah Thomas | 103 |

| 21121a0206 | Praveen Kumar | 103 |

| 21121a0207 | Prabhu Raja | 103 |

| 21121a0208 | Wilson Mathew | 103 |

| 21121a0209 | Ananya Khan | 103 |

| 21121a0210 | Nithya Sharma | 103 |

| 21121a0211 | Amir Ahmed | 103 |

| 21121a0212 | Rohit Reddy | 103 |

| 21121a0213 | Neha Patel | 103 |

| 21121a0214 | Sofia Joseph | 103 |

| 21121a0215 | Anjali Naidu | 103 |

| 21121a0216 | Divya Kumar | 103 |

| 21121a0217 | Rajesh Mathew | 103 |

| 21121a0218 | Sushma Reddy | 103 |

| 21121a0219 | Ravi Patel | 103 |

| 21121a0220 | Sara Ahmed | 103 |

| 21121a0221 | Rakesh Nair | 103 |

| 21121a0222 | Prabhu Reddy | 103 |

| 21121a0223 | Sandeep Kumar | 103 |

| 21121a0224 | Kareem Khan | 103 |

| 21121a0225 | Swathi Thomas | 103 |

| 21121a0226 | Ananya Khan | 103 |

| 21121a0227 | Priya Sharma | 103 |

| 21121a0228 | Ajay Naidu | 103 |

| 21121a0229 | Neha Patel | 103 |

| 21121a0230 | Sandeep Reddy | 103 |

| 21121a0231 | Sofia Ahmed | 103 |

| 21121a0232 | Praveen Reddy | 103 |

| 21121a0233 | Vivek Kumar | 103 |

| 21121a0234 | Anjali Patel | 103 |

| 21121a0235 | Priya Reddy | 103 |

| 21121a0236 | Rohit Khan | 103 |

| 21121a0237 | Sara Reddy | 103 |

| 21121a0238 | Amanullah Khan | 103 |

| 21121a0239 | Christina Mathew | 103 |

| 21121a0240 | Rahul Kumar | 103 |

| 21121a1101 | Manoj Reddy | 104 |

| 21121a1102 | Abhishek Kumar | 104 |

| 21121a1103 | Praveen Naidu | 104 |

| 21121a1104 | Prabhu Sharma | 104 |

| 21121a1105 | Wilson Rao | 104 |

| 21121a1106 | Ayesha Begum | 104 |

| 21121a1107 | Fatima Khan | 104 |

| 21121a1108 | Sandeep Kumar | 104 |

| 21121a1109 | Anita Reddy | 104 |

| 21121a1110 | John Christian | 104 |

| 21121a1111 | Rajesh Patel | 104 |

| 21121a1112 | Sneha Sharma | 104 |

| 21121a1113 | Muhammad Khan | 104 |

| 21121a1114 | Deepika Naidu | 104 |

| 21121a1115 | Hari Prasad | 104 |

| 21121a1116 | Sarah Thomas | 104 |

| 21121a1117 | Vijay Kumar | 104 |

| 21121a1118 | Nisha Reddy | 104 |

| 21121a1119 | Priyanka Singh | 104 |

| 21121a1120 | Vikram Sharma | 104 |

| 21121a1121 | Aisha Siddiqui | 104 |

| 21121a1122 | Krishna Kumar | 104 |

| 21121a1123 | Shweta Gupta | 104 |

| 21121a1124 | Ahmed Ali | 104 |

| 21121a1125 | Nandini Reddy | 104 |

| 21121a1126 | Kevin Mathew | 104 |

| 21121a1127 | Shalini Rao | 104 |

| 21121a1128 | Rahul Verma | 104 |

| 21121a1129 | Neha Kumari | 104 |

| 21121a1130 | Sanjay Singh | 104 |

| 21121a1131 | Mehnaz Begum | 104 |

| 21121a1132 | Vijay Sharma | 104 |

| 21121a1133 | Amrita Patel | 104 |

| 21121a1134 | Imran Khan | 104 |

| 21121a1135 | Ayesha Siddiqui | 104 |

| 21121a1136 | Rahul Sharma | 104 |

| 21121a1137 | Riya Nair | 104 |

| 21121a1138 | Siddharth Patel | 104 |

| 21121a1139 | Zara Khan | 104 |

| 21121a1140 | Varun Sharma | 104 |

| 21121a1301 | Aditya Sharma | 105 |

| 21121a1302 | Niharika Reddy | 105 |

| 21121a1303 | Rajeev Kumar | 105 |

| 21121a1304 | Kirti Singh | 105 |

| 21121a1305 | Rahul Naidu | 105 |

| 21121a1306 | Alisha Verma | 105 |

| 21121a1307 | Kunal Sharma | 105 |

| 21121a1308 | Pooja Patel | 105 |

| 21121a1309 | Arun Reddy | 105 |

| 21121a1310 | Shweta Gupta | 105 |

| 21121a1311 | Vikram Kumar | 105 |

| 21121a1312 | Nisha Verma | 105 |

| 21121a1313 | Rahul Patel | 105 |

| 21121a1314 | Neha Kumari | 105 |

| 21121a1315 | Vivek Singh | 105 |

| 21121a1316 | Sneha Naidu | 105 |

| 21121a1317 | Akash Sharma | 105 |

| 21121a1318 | Kritika Reddy | 105 |

| 21121a1319 | Rajesh Verma | 105 |

| 21121a1320 | Preeti Patel | 105 |

| 21121a1321 | Vishal Kumar | 105 |

| 21121a1322 | Divya Sharma | 105 |

| 21121a1323 | Rohit Naidu | 105 |

| 21121a1324 | Anjali Verma | 105 |

| 21121a1325 | Ravi Reddy | 105 |

| 21121a1326 | Kavya Singh | 105 |

| 21121a1327 | Rahul Kumar | 105 |

| 21121a1328 | Neha Verma | 105 |

| 21121a1329 | Ajay Patel | 105 |

| 21121a1330 | Riya Kumari | 105 |

| 21121a1331 | Siddharth Naidu | 105 |

| 21121a1332 | Priya Sharma | 105 |

| 21121a1333 | Vikas Reddy | 105 |

| 21121a1334 | Nisha Verma | 105 |

| 21121a1335 | Ravi Patel | 105 |

| 21121a1336 | Anjali Kumari | 105 |

| 21121a1337 | Rahul Naidu | 105 |

| 21121a1338 | Pooja Verma | 105 |

| 21121a1339 | Kunal Reddy | 105 |

| 21121a1340 | Alisha Singh | 105 |

| 21121a1201 | Aman Gupta | 106 |

| 21121a1202 | Riya Sharma | 106 |

| 21121a1203 | Prateek Patel | 106 |

| 21121a1204 | Anjali Reddy | 106 |

| 21121a1205 | Vikram Kumar | 106 |

| 21121a1206 | Neha Verma | 106 |

| 21121a1207 | Rahul Naidu | 106 |

| 21121a1208 | Sneha Sharma | 106 |

| 21121a1209 | Akash Reddy | 106 |

| 21121a1210 | Kirti Patel | 106 |

| 21121a1211 | Vivek Verma | 106 |

| 21121a1212 | Riya Naidu | 106 |

| 21121a1213 | Ankit Sharma | 106 |

| 21121a1214 | Nisha Reddy | 106 |

| 21121a1215 | Ravi Kumar | 106 |

| 21121a1216 | Alisha Patel | 106 |

| 21121a1217 | Rahul Sharma | 106 |

| 21121a1218 | Pooja Reddy | 106 |

| 21121a1219 | Siddharth Kumar | 106 |

| 21121a1220 | Priya Verma | 106 |

| 21121a1221 | Kunal Naidu | 106 |

| 21121a1222 | Riya Sharma | 106 |

| 21121a1223 | Ravi Patel | 106 |

| 21121a1224 | Anjali Kumar | 106 |

| 21121a1225 | Aman Reddy | 106 |

| 21121a1226 | Neha Gupta | 106 |

| 21121a1227 | Rahul Sharma | 106 |

| 21121a1228 | Sneha Patel | 106 |

| 21121a1229 | Akash Reddy | 106 |

| 21121a1230 | Kirti Verma | 106 |

| 21121a1231 | Vivek Naidu | 106 |

| 21121a1232 | Riya Sharma | 106 |

| 21121a1233 | Ankit Reddy | 106 |

| 21121a1234 | Nisha Patel | 106 |

| 21121a1235 | Ravi Kumar | 106 |

| 21121a1236 | Alisha Reddy | 106 |

| 21121a1237 | Rahul Sharma | 106 |

**|** 21121a1238 | Pooja Patel | 106 |

| 21121a1239 | Siddharth Reddy | 106 |

| 21121a1240 | Priya Kumar | 106 |

+-------------+------------------+---------+

CREATE TABLE exam\_material (

material\_id INT PRIMARY KEY,

sub\_id VARCHAR(30) foreign key references subjects(sub\_id),

material\_name VARCHAR(70) NOT NULL,

description TEXT,

);

INSERT INTO exam\_material (material\_id, sub\_id, material\_name, description)

VALUES

(1, '20BT50502', 'DAA Exam Guide', 'Comprehensive guide on algorithm design techniques'),

(2, '20BT12901', 'DMS Study Notes', 'Introduction to discrete mathematics concepts'),

(3, '20BT41501', 'TOC Textbook', 'Exploration of automata theory and formal languages'),

(4, '20BT40501', 'DBMS Reference Manual', 'Fundamental principles of database management systems'),

(5, '20BT31501', 'OS Study Materials', 'Operating system concepts and functionalities'),

(6, '20BT31201', 'Software Engineering Handbook', 'Software engineering methodologies and practices'),

(7, '20BT40101', 'Electrical Circuits Guide', 'Fundamental concepts of electrical circuits and devices'),

(8, '20BT40102', 'Electronic Engineering Basics', 'Introduction to electronic engineering principles'),

(9, '20BT40103', 'Semiconductor Devices Handbook', 'Study of semiconductor devices and their applications'),

(10, '20BT40104', 'Signals and Systems Primer', 'Introduction to signals and systems analysis'),

(11, '20BT40301', 'Data Organization and Manipulation Book', 'Mathematical foundations of data organization and manipulation'),

(12, '20BT40302', 'Electromagnetism Textbook', 'Study of electromagnetism and magnetic fields'),

(13, '20BT40303', 'Fluid Mechanics Guide', 'Introduction to fluid mechanics and material science'),

(14, '20BT40304', 'Thermodynamics and Energy Conversion Book', 'Study of thermodynamics and energy conversion systems'),

(15, '20BT40401', 'Analog Circuits Handbook', 'Fundamental principles of analog circuits and systems'),

(16, '20BT40402', 'Electronic Communications Guide', 'Introduction to electronic communications and antennas'),

(17, '20BT40403', 'Logic Design Textbook', 'Study of logic design and integrated circuit applications'),

(18, '20BT40404', 'Power Systems Handbook', 'Introduction to power systems and renewable energy sources'),

(19, '20BT40405', 'Microprocessors and Interfacing Book', 'Fundamental principles of microprocessors and interfacing'),

(20, '20BT40441', 'Aerospace Engineering Basics', 'Introduction to aerospace engineering principles'),

(21, '20BT40201', 'Computer Science Fundamentals', 'Introduction to computer science concepts and programming'),

(22, '20BT40202', 'Data Engineering Essentials', 'Fundamental principles of data engineering and analytics'),

(23, '20BT40203', 'Electromagnetic Waves Handbook', 'Study of electromagnetic waves and transmission lines'),

(24, '20BT40204', 'Mobile Telecommunications Guide', 'Introduction to mobile telecommunications systems');

+-------------+-----------+-----------------------------+-------------------------------------------------+

| material\_id | sub\_id | material\_name | description |

+-------------+-----------+-----------------------------+-------------------------------------------------+

| 1 | 20BT50502 | DAA Exam Guide | Comprehensive guide on algorithm design techniques |

| 2 | 20BT12901 | DMS Study Notes | Introduction to discrete mathematics concepts |

| 3 | 20BT41501 | TOC Textbook | Exploration of automata theory and formal languages |

| 4 | 20BT40501 | DBMS Reference Manual | Fundamental principles of database management systems |

| 5 | 20BT31501 | OS Study Materials | Operating system concepts and functionalities |

| 6 | 20BT31201 | Software Engineering Handbook | Software engineering methodologies and practices |

| 7 | 20BT40101 | Electrical Circuits Guide | Fundamental concepts of electrical circuits and devices |

| 8 | 20BT40102 | Electronic Engineering Basics | Introduction to electronic engineering principles |

| 9 | 20BT40103 | Semiconductor Devices Handbook | Study of semiconductor devices and their applications |

| 10 | 20BT40104 | Signals and Systems Primer | Introduction to signals and systems analysis |

| 11 | 20BT40301 | Data Organization and Manipulation Book | Mathematical foundations of data organization and manipulation |

| 12 | 20BT40302 | Electromagnetism Textbook | Study of electromagnetism and magnetic fields |

| 13 | 20BT40303 | Fluid Mechanics Guide | Introduction to fluid mechanics and material science |

| 14 | 20BT40304 | Thermodynamics and Energy Conversion Book | Study of thermodynamics and energy conversion systems |

| 15 | 20BT40401 | Analog Circuits Handbook | Fundamental principles of analog circuits and systems |

| 16 | 20BT40402 | Electronic Communications Guide | Introduction to electronic communications and antennas |

| 17 | 20BT40403 | Logic Design Textbook | Study of logic design and integrated circuit applications |

| 18 | 20BT40404 | Power Systems Handbook | Introduction to power systems and renewable energy sources |

| 19 | 20BT40405 | Microprocessors and Interfacing Book | Fundamental principles of microprocessors and interfacing |

| 20 | 20BT40441 | Aerospace Engineering Basics | Introduction to aerospace engineering principles |

| 21 | 20BT40201 | Computer Science Fundamentals | Introduction to computer science concepts and programming |

| 22 | 20BT40202 | Data Engineering Essentials | Fundamental principles of data engineering and analytics |

| 23 | 20BT40203 | Electromagnetic Waves Handbook | Study of electromagnetic waves and transmission lines |

| 24 | 20BT40204 | Mobile Telecommunications Guide | Introduction to mobile telecommunications systems |

);

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create table invigilator(

invig\_id int primary key,

invig\_name varchar(30) not null,

dep int foreign key references dept(did)

);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125601, 'Basheer', 104);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125602, 'Shilpa', 104);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125603, 'Chengamma', 104);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125604, 'Jhoshna', 104);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125605, 'Bharat', 104);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125606, 'Yogendra prasad', 101);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125607, 'Ramu', 101);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125608, 'Dhanalakshmi', 101);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125609, 'Sandeep kumar', 101);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125610, 'Siva kumar', 105);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125611, 'Trinad', 105);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125612, 'Balakrishna', 105);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125613, 'Mishra', 103);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125614, 'Sunil', 103);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125615, 'Venkatesh', 103);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125616, 'Venkatadri', 102);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125617, 'sujatha', 102);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125618, 'Manohar', 102);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125619, 'Kalpana', 106);

INSERT INTO invigilator (invig\_id, invig\_name, dep) VALUES (1920125620, 'Nirmala', 106);

Select \* from invigilator

+-----------+---------------+-----+

| invig\_id | invig\_name | dep |

+-----------+---------------+-----+

| 1920125601| Basheer | 104 |

| 1920125602| Shilpa | 104 |

| 1920125603| Chengamma | 104 |

| 1920125604| Jhoshna | 104 |

| 1920125605| Bharat | 104 |

| 1920125606|Yogendra prasad| 101 |

| 1920125607| Ramu | 101 |

| 1920125608| Dhanalakshmi | 101 |

| 1920125609| Sandeep kumar| 101 |

| 1920125610| Siva kumar | 105 |

| 1920125611| Trinad | 105 |

| 1920125612| Balakrishna | 105 |

| 1920125613| Mishra | 103 |

| 1920125614| Sunil | 103 |

| 1920125615| Venkatesh | 103 |

| 1920125616| Venkatadri | 102 |

| 1920125617| sujatha | 102 |

| 1920125618| Manohar | 102 |

| 1920125619| Kalpana | 106 |

| 1920125620| Nirmala | 106 |

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create table st\_room(

r\_id int foreign key references exam\_room(r\_id),

st\_id varchar(30) foreign key references student(st\_id)

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insert into st\_room(st\_id,r\_id)

VALUES

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alter table st\_room

add invig\_id int foreign key references invigilator(invig\_id)

update st\_room set invig\_id = 1920125604

where r\_id=609

update st\_room set invig\_id = 1920125612

where r\_id=610

update st\_room set invig\_id = 1920125610

where r\_id=227

update st\_room set invig\_id = 1920125620

where r\_id=228

update st\_room set invig\_id = 1920125619

where r\_id=2126

update st\_room set invig\_id = 1920125611

where r\_id=2127

update st\_room set invig\_id = 1920125606

where r\_id=1060

update st\_room set invig\_id = 1920125607

where r\_id=1061

update st\_room set invig\_id = 1920125612

where r\_id=610

update st\_room set invig\_id = 1920125602

where r\_id=226

update st\_room set invig\_id = 1920125605

where r\_id=608

update st\_room set invig\_id = 1920125611

where r\_id=2127

select \* from st\_room

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| st\_id | r\_id | invig\_id |

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| 228 | 21121a1423 | 1920125620|

| 228 | 21121a1424 | 1920125620|

| 228 | 21121a1425 | 1920125620|

| 228 | 21121a1426 | 1920125620|

| 228 | 21121a1427 | 1920125620|

| 228 | 21121a1428 | 1920125620|

| 228 | 21121a1429 | 1920125620|

| 228 | 21121a1430 | 1920125620|

| 228 | 21121a1431 | 1920125620|

| 228 | 21121a1432 | 1920125620|

| 228 | 21121a1433 | 1920125620|

| 228 | 21121a1434 | 1920125620|

| 228 | 21121a1435 | 1920125620|

| 228 | 21121a1436 | 1920125620|

| 228 | 21121a1437 | 1920125620|

| 228 | 21121a1438 | 1920125620|

| 228 | 21121a1439 | 1920125620|

| 228 | 21121a1440 | 1920125620|

| 2126 | 21121a0201 | 1920125619|

| 2126 | 21121a0202 | 1920125619|

| 2126 | 21121a0203 | 1920125619|

| 2126 | 21121a0204 | 1920125619|

| 2126 | 21121a0205 | 1920125619|

| 2126 | 21121a0206 | 1920125619|

| 2126 | 21121a0207 | 1920125619|

| 2126 | 21121a0208 | 1920125619|

| 2126 | 21121a0209 | 1920125619|

| 2126 | 21121a0210 | 1920125619|

| 2126 | 21121a0211 | 1920125619|

| 2126 | 21121a0212 | 1920125619|

| 2126 | 21121a0213 | 1920125619|

| 2126 | 21121a0214 | 1920125619|

| 2126 | 21121a0215 | 1920125619|

| 2126 | 21121a0216 | 1920125619|

| 2126 | 21121a0217 | 1920125619|

| 2126 | 21121a0218 | 1920125619|

| 2126 | 21121a0219 | 1920125619|

| 2126 | 21121a0220 | 1920125619|

| 2126 | 21121a0221 | 1920125619|

| 2126 | 21121a0222 | 1920125619|

| 2126 | 21121a0223 | 1920125619|

| 2126 | 21121a0224 | 1920125619|

| 2126 | 21121a0225 | 1920125619|

| 2127 | 21121a0226 | 1920125611|

| 2127 | 21121a0227 | 1920125611|

| 2127 | 21121a0228 | 1920125611|

| 2127 | 21121a0229 | 1920125611|

| 2127 | 21121a0230 | 1920125611|

| 2127 | 21121a0231 | 1920125611|

| 2127 | 21121a0232 | 1920125611|

| 2127 | 21121a0233 | 1920125611|

| 2127 | 21121a0234 | 1920125611|

| 2127 | 21121a0235 | 1920125611|

| 2127 | 21121a0236 | 1920125611|

| 2127 | 21121a0237 | 1920125611|

| 2127 | 21121a0238 | 1920125611|

| 2127 | 21121a0239 | 1920125611|

| 2127 | 21121a0240 | 1920125611|

| 1060 | 21121a1101 | 1920125606|

| 1060 | 21121a1102 | 1920125606|

| 1060 | 21121a1103 | 1920125606|

| 1060 | 21121a1104 | 1920125606|

| 1060 | 21121a1105 | 1920125606|

| 1060 | 21121a1106 | 1920125606|

| 1060 | 21121a1107 | 1920125606|

| 1060 | 21121a1108 | 1920125606|

| 1060 | 21121a1109 | 1920125606|

| 1060 | 21121a1110 | 1920125606|

| 1060 | 21121a1111 | 1920125606|

| 1060 | 21121a1112 | 1920125606|

| 1060 | 21121a1113 | 1920125606|

| 1060 | 21121a1114 | 1920125606|

| 1060 | 21121a1115 | 1920125606|

| 1060 | 21121a1116 | 1920125606|

| 1060 | 21121a1117 | 1920125606|

| 1060 | 21121a1118 | 1920125606|

| 1060 | 21121a1119 | 1920125606|

| 1060 | 21121a1120 | 1920125606|

| 1060 | 21121a1121 | 1920125606|

| 1060 | 21121a1122 | 1920125606|

| 1060 | 21121a1123 | 1920125606|

| 1060 | 21121a1124 | 1920125606|

| 1060 | 21121a1125 | 1920125606|

| 1060 | 21121a1126 | 1920125606|

| 1061 | 21121a1127 | 1920125607|

| 1061 | 21121a1128 | 1920125607|

| 1061 | 21121a1129 | 1920125607|

| 1061 | 21121a1130 | 1920125607|

| 1061 | 21121a1131 | 1920125607|

| 1061 | 21121a1132 | 1920125607|

| 1061 | 21121a1133 | 1920125607|

| 1061 | 21121a1134 | 1920125607|

| 1061 | 21121a1135 | 1920125607|

| 1061 | 21121a1136 | 1920125607|

| 1061 | 21121a1137 | 1920125607|

| 1061 | 21121a1138 | 1920125607|

| 1061| 21121a1139 | 1920125607|

| 1061 | 21121a1140 | 1920125607|

| 610 | 21121a1301 | 1920125612|

| 610 | 21121a1302 | 1920125612|

| 610 | 21121a1303 | 1920125612|

| 610 | 21121a1304 | 1920125612|

| 610 | 21121a1305 | 1920125612|

| 610 | 21121a1306 | 1920125612|

| 610 | 21121a1307 | 1920125612|

| 610 | 21121a1308 | 1920125612|

| 610 | 21121a1309 | 1920125612|

| 610 | 21121a1310 | 1920125612|

| 610 | 21121a1311 | 1920125612|

| 610 | 21121a1312 | 1920125612|

| 610 | 21121a1313 | 1920125612|

| 610 | 21121a1314 | 1920125612|

| 610 | 21121a1315 | 1920125612|

| 610 | 21121a1316 | 1920125612|

| 610 | 21121a1317 | 1920125612|

| 610 | 21121a1318 | 1920125612|

| 610 | 21121a1319 | 1920125612|

| 610 | 21121a1320 | 1920125612|

| 226 | 21121a1321 | 1920125602|

| 226 | 21121a1322 | 1920125602|

| 226 | 21121a1323 | 1920125602|

| 226 | 21121a1324 | 1920125602|

| 226 | 21121a1325 | 1920125602|

| 226 | 21121a1326 | 1920125602|

| 226 | 21121a1327 | 1920125602|

| 226 | 21121a1328 | 1920125602|

| 226 | 21121a1329 | 1920125602|

| 226 | 21121a1330 | 1920125602|

| 226 | 21121a1331 | 1920125602|

| 226 | 21121a1332 | 1920125602|

| 226 | 21121a1333 | 1920125602|

| 226 | 21121a1334 | 1920125602|

| 226 | 21121a1335 | 1920125602|

| 226 | 21121a1336 | 1920125602|

| 226 | 21121a1337 | 1920125602|

| 226 | 21121a1338 | 1920125602|

| 226 | 21121a1339 | 1920125602|

| 226 | 21121a1340 | 1920125602|

| 608 | 21121a1201| 1920125605|

| 608 | 21121a1202| 1920125605|

| 608 | 21121a1203| 1920125605|

| 608 | 21121a1204| 1920125605|

| 608 | 21121a1205| 1920125605|

| 608 | 21121a1206| 1920125605|

| 608 | 21121a1207| 1920125605|

| 608 | 21121a1208| 1920125605|

| 608 | 21121a1209| 1920125605|

| 608 | 21121a1210| 1920125605|

| 608 | 21121a1211| 1920125605|

| 608 | 21121a1212| 1920125605|

| 608 | 21121a1213| 1920125605|

| 608 | 21121a1214| 1920125605|

| 608 | 21121a1215| 1920125605|

| 608 | 21121a1216| 1920125605|

| 608 | 21121a1217| 1920125605|

| 608 | 21121a1218| 1920125605|

| 608 | 21121a1219| 1920125605|

| 608 | 21121a1220| 1920125605|

| 608 | 21121a1221| 1920125605|

| 608 | 21121a1222| 1920125605|

| 608 | 21121a1223| 1920125605|

| 608 | 21121a1224| 1920125605|

| 608 | 21121a1225| 1920125605|

| 608 | 21121a1226| 1920125605|

| 608 | 21121a1227| 1920125605|

| 608 | 21121a1228| 1920125605|

| 608 | 21121a1229| 1920125605|

| 608 | 21121a1230| 1920125605|

| 2127 | 21121a1231| 1920125611|

| 2127 | 21121a1232| 1920125611|

| 2127 | 21121a1233| 1920125611|

| 2127 | 21121a1234| 1920125611|

| 2127 | 21121a1235| 1920125611|

| 2127 | 21121a1236| 1920125611|

| 2127 | 21121a1237| 1920125611|

| 2127 | 21121a1238| 1920125611|

| 2127 | 21121a1239| 1920125611|

| 2127 | 21121a1240| 1920125611|

+-------+-----------+-----------+

**SQL QUERIES:**

--1.Retrieve the subject name and the corresponding exam date for each subject:

SELECT s.sub\_name, es.ex\_date

FROM subjects s

JOIN exam\_schedule es ON s.ex\_id = es.ex\_id;

/\*output

sub\_name ex\_date

DMS 2023-06-24

SE 2023-06-24

OS 2023-06-22

EH 2023-06-22

EE 2023-06-24

SM 2023-06-26

SA 2023-06-28

CS 2023-06-24

DE 2023-06-26

EM-2 2023-06-28

E MTS 2023-06-30

DoM 2023-06-22

EM and MT 2023-06-24

FM and M 2023-06-26

TE-1 2023-06-28

AC 2023-06-22

ECA and D 2023-06-24

L and D IC A 2023-06-26

P and SP 2023-06-28

M and I 2023-06-30

AE 2023-06-22

DBMS 2023-06-28

TOC 2023-06-26

DAA 2023-06-22

\*/

--2.Retrieve the list of subjects offered by the "csse" department:

SELECT s.sub\_id, s.sub\_name

FROM subjects s

JOIN dep\_sub ds ON s.sub\_id = ds.sub\_id

JOIN dept d ON ds.did = d.did

WHERE d.dname = 'csse';

/\*output

sub\_id sub\_name

20BT50502 DAA

20BT12901 DMS

20BT41501 TOC

20BT40501 DBMS

\*/

--3.Retrieve the schedule of exams along with the subject names for the "2-2" semester:

SELECT es.ex\_date, es.ex\_st\_time, es.ex\_en\_time, s.sub\_name

FROM exam\_schedule es

JOIN subjects s ON es.ex\_id = s.ex\_id

WHERE s.sub\_sem = 2-2;

/\*output

ex\_date ex\_st\_time ex\_en\_time sub\_name

2023-06-24 10:00:00.0000000 01:00:00.0000000 DMS

2023-06-24 10:00:00.0000000 01:00:00.0000000 SE

2023-06-22 10:00:00.0000000 01:00:00.0000000 OS

2023-06-22 10:00:00.0000000 01:00:00.0000000 EH

2023-06-24 10:00:00.0000000 01:00:00.0000000 EE

2023-06-26 10:00:00.0000000 01:00:00.0000000 SM

2023-06-28 10:00:00.0000000 01:00:00.0000000 SA

2023-06-24 10:00:00.0000000 01:00:00.0000000 CS

2023-06-26 10:00:00.0000000 01:00:00.0000000 DE

2023-06-28 10:00:00.0000000 01:00:00.0000000 EM-2

2023-06-30 10:00:00.0000000 01:00:00.0000000 E MTS

2023-06-22 10:00:00.0000000 01:00:00.0000000 DoM

2023-06-24 10:00:00.0000000 01:00:00.0000000 EM and MT

2023-06-26 10:00:00.0000000 01:00:00.0000000 FM and M

2023-06-28 10:00:00.0000000 01:00:00.0000000 TE-1

2023-06-22 10:00:00.0000000 01:00:00.0000000 AC

2023-06-24 10:00:00.0000000 01:00:00.0000000 ECA and D

2023-06-26 10:00:00.0000000 01:00:00.0000000 L and D IC A

2023-06-28 10:00:00.0000000 01:00:00.0000000 P and SP

2023-06-30 10:00:00.0000000 01:00:00.0000000 M and I

2023-06-22 10:00:00.0000000 01:00:00.0000000 AE

2023-06-28 10:00:00.0000000 01:00:00.0000000 DBMS

2023-06-26 10:00:00.0000000 01:00:00.0000000 TOC

2023-06-22 10:00:00.0000000 01:00:00.0000000 DAA

\*/

--4.Retrieve the block names along with the corresponding exam room capacities:

SELECT b.b\_name, er.r\_cap,er.r\_id

FROM block\_room br

JOIN block b ON br.b\_id = b.b\_id

JOIN exam\_room er ON br.r\_id = er.r\_id;

/\*output

b\_name r\_cap r\_id

M block 20 226

M block 20 227

M block 20 228

M block 20 229

MNS block 30 607

MNS block 30 608

MNS block 30 609

MNS block 30 610

G block 25 2126

G block 25 2127

G block 25 2128

G block 25 2129

ME block 26 1060

ME block 26 1061

ME block 26 1062

ME block 26 1063

\*/

--5.Retrieve the department name, subject name, and student names for all subjects offered by the "ece" department:

SELECT d.dname, s.sub\_name, st.st\_name

FROM dept d

JOIN dep\_sub ds ON d.did = ds.did

JOIN subjects s ON ds.sub\_id = s.sub\_id

JOIN student st ON d.did = st.st\_dept

WHERE d.dname = 'ece';

/\*output

dname sub\_name st\_name

ece AC Ravi Reddy

ece ECA and D Ravi Reddy

ece L and D IC A Ravi Reddy

ece P and SP Ravi Reddy

ece M and I Ravi Reddy

ece AC Priya Sharma

ece ECA and D Priya Sharma

ece L and D IC A Priya Sharma

ece P and SP Priya Sharma

ece M and I Priya Sharma

ece AC Sandeep Naidu

ece ECA and D Sandeep Naidu

ece L and D IC A Sandeep Naidu

ece P and SP Sandeep Naidu

ece M and I Sandeep Naidu

ece AC Ananya Rao

ece ECA and D Ananya Rao

ece L and D IC A Ananya Rao

ece P and SP Ananya Rao

ece M and I Ananya Rao

ece AC Vivek Kumar

ece ECA and D Vivek Kumar

ece L and D IC A Vivek Kumar

ece P and SP Vivek Kumar

ece M and I Vivek Kumar

ece AC Divya Reddy

ece ECA and D Divya Reddy

ece L and D IC A Divya Reddy

ece P and SP Divya Reddy

ece M and I Divya Reddy

ece AC Nithya Sharma

ece ECA and D Nithya Sharma

ece L and D IC A Nithya Sharma

ece P and SP Nithya Sharma

ece M and I Nithya Sharma

ece AC Ajay Naidu

ece ECA and D Ajay Naidu

ece L and D IC A Ajay Naidu

ece P and SP Ajay Naidu

ece M and I Ajay Naidu

ece AC Priya Rao

ece ECA and D Priya Rao

ece L and D IC A Priya Rao

ece P and SP Priya Rao

ece M and I Priya Rao

ece AC Sandeep Kumar

ece ECA and D Sandeep Kumar

ece L and D IC A Sandeep Kumar

ece P and SP Sandeep Kumar

ece M and I Sandeep Kumar

ece AC Anjali Reddy

ece ECA and D Anjali Reddy

ece L and D IC A Anjali Reddy

ece P and SP Anjali Reddy

ece M and I Anjali Reddy

ece AC Rohit Sharma

ece ECA and D Rohit Sharma

ece L and D IC A Rohit Sharma

ece P and SP Rohit Sharma

ece M and I Rohit Sharma

ece AC Neha Naidu

ece ECA and D Neha Naidu

ece L and D IC A Neha Naidu

ece P and SP Neha Naidu

ece M and I Neha Naidu

ece AC Rakesh Rao

ece ECA and D Rakesh Rao

ece L and D IC A Rakesh Rao

ece P and SP Rakesh Rao

ece M and I Rakesh Rao

ece AC Swathi Kumar

ece ECA and D Swathi Kumar

ece L and D IC A Swathi Kumar

ece P and SP Swathi Kumar

ece M and I Swathi Kumar

ece AC Rajesh Reddy

ece ECA and D Rajesh Reddy

ece L and D IC A Rajesh Reddy

ece P and SP Rajesh Reddy

ece M and I Rajesh Reddy

ece AC Sushma Rao

ece ECA and D Sushma Rao

ece L and D IC A Sushma Rao

ece P and SP Sushma Rao

ece M and I Sushma Rao

ece AC Ravi Kumar

ece ECA and D Ravi Kumar

ece L and D IC A Ravi Kumar

ece P and SP Ravi Kumar

ece M and I Ravi Kumar

ece AC Priya Reddy

ece ECA and D Priya Reddy

ece L and D IC A Priya Reddy

ece P and SP Priya Reddy

ece M and I Priya Reddy

ece AC Sandeep Sharma

ece ECA and D Sandeep Sharma

ece L and D IC A Sandeep Sharma

ece P and SP Sandeep Sharma

ece M and I Sandeep Sharma

ece AC Ananya Naidu

ece ECA and D Ananya Naidu

ece L and D IC A Ananya Naidu

ece P and SP Ananya Naidu

ece M and I Ananya Naidu

ece AC Vivek Rao

ece ECA and D Vivek Rao

ece L and D IC A Vivek Rao

ece P and SP Vivek Rao

ece M and I Vivek Rao

ece AC Divya Kumar

ece ECA and D Divya Kumar

ece L and D IC A Divya Kumar

ece P and SP Divya Kumar

ece M and I Divya Kumar

ece AC Nithya Reddy

ece ECA and D Nithya Reddy

ece L and D IC A Nithya Reddy

ece P and SP Nithya Reddy

ece M and I Nithya Reddy

ece AC Ajay Sharma

ece ECA and D Ajay Sharma

ece L and D IC A Ajay Sharma

ece P and SP Ajay Sharma

ece M and I Ajay Sharma

ece AC Priya Naidu

ece ECA and D Priya Naidu

ece L and D IC A Priya Naidu

ece P and SP Priya Naidu

ece M and I Priya Naidu

ece AC Sandeep Rao

ece ECA and D Sandeep Rao

ece L and D IC A Sandeep Rao

ece P and SP Sandeep Rao

ece M and I Sandeep Rao

ece AC Anjali Kumar

ece ECA and D Anjali Kumar

ece L and D IC A Anjali Kumar

ece P and SP Anjali Kumar

ece M and I Anjali Kumar

ece AC Rohit Reddy

ece ECA and D Rohit Reddy

ece L and D IC A Rohit Reddy

ece P and SP Rohit Reddy

ece M and I Rohit Reddy

ece AC Neha Sharma

ece ECA and D Neha Sharma

ece L and D IC A Neha Sharma

ece P and SP Neha Sharma

ece M and I Neha Sharma

ece AC Rakesh Naidu

ece ECA and D Rakesh Naidu

ece L and D IC A Rakesh Naidu

ece P and SP Rakesh Naidu

ece M and I Rakesh Naidu

ece AC Swathi Rao

ece ECA and D Swathi Rao

ece L and D IC A Swathi Rao

ece P and SP Swathi Rao

ece M and I Swathi Rao

ece AC Rajesh Kumar

ece ECA and D Rajesh Kumar

ece L and D IC A Rajesh Kumar

ece P and SP Rajesh Kumar

ece M and I Rajesh Kumar

ece AC Sushma Reddy

ece ECA and D Sushma Reddy

ece L and D IC A Sushma Reddy

ece P and SP Sushma Reddy

ece M and I Sushma Reddy

ece AC Ravi Sharma

ece ECA and D Ravi Sharma

ece L and D IC A Ravi Sharma

ece P and SP Ravi Sharma

ece M and I Ravi Sharma

ece AC Priya Nair

ece ECA and D Priya Nair

ece L and D IC A Priya Nair

ece P and SP Priya Nair

ece M and I Priya Nair

ece AC Sandeep Patel

ece ECA and D Sandeep Patel

ece L and D IC A Sandeep Patel

ece P and SP Sandeep Patel

ece M and I Sandeep Patel

ece AC Ananya Sharma

ece ECA and D Ananya Sharma

ece L and D IC A Ananya Sharma

ece P and SP Ananya Sharma

ece M and I Ananya Sharma

ece AC Vivek Nair

ece ECA and D Vivek Nair

ece L and D IC A Vivek Nair

ece P and SP Vivek Nair

ece M and I Vivek Nair

ece AC Divya Sharma

ece ECA and D Divya Sharma

ece L and D IC A Divya Sharma

ece P and SP Divya Sharma

ece M and I Divya Sharma

\*/

--6.Retrieve the list of subjects along with the count of students enrolled for each subject:

SELECT s.sub\_name, COUNT(st.st\_id) AS enrolled\_students

FROM subjects s

LEFT JOIN dep\_sub ds ON s.sub\_id = ds.sub\_id

LEFT JOIN student st ON ds.did = st.st\_dept

GROUP BY s.sub\_name;

/\*output

sub\_name enrolled\_students

DoM 40

TOC 80

DBMS 80

ECA and D 40

SE 40

TE-1 40

DMS 40

FM and M 40

AC 40

P and SP 40

DAA 40

SM 40

EE 40

DE 40

CS 40

AE 40

EM and MT 40

OS 40

EM-2 40

SA 40

M and I 40

L and D IC A 40

E MTS 40

EH 40

\*/

--7.Retrieve the list of subjects offered by the "csse" department or the "ece" department:

SELECT s.sub\_name

FROM subjects s

JOIN dep\_sub ds ON s.sub\_id = ds.sub\_id

JOIN dept d ON ds.did = d.did

WHERE d.dname = 'csse'

UNION

SELECT s.sub\_name

FROM subjects s

JOIN dep\_sub ds ON s.sub\_id = ds.sub\_id

JOIN dept d ON ds.did = d.did

WHERE d.dname = 'ece';

/\*output

sub\_name

AC

DAA

DBMS

DMS

ECA and D

L and D IC A

M and I

P and SP

TOC

\*/

--8.Retrieve the room id, branch id and invigilator id for room id greater than 2126:

select \* from block\_room

where r\_id>2126

/\*output

r\_id b\_id in\_id

2127 1403 1920125610

2128 1403 1920125611

2129 1403 1920125612

\*/

--9.Retrieve the departments along with the count of subjects offered by each department:

SELECT d.did, d.dname, COUNT(s.sub\_id) AS subject\_count

FROM dept d

LEFT JOIN dep\_sub ds ON d.did = ds.did

LEFT JOIN subjects s ON ds.sub\_id = s.sub\_id

GROUP BY d.did, d.dname

/\*output

did dname subject\_count

101 csse 4

102 ece 5

103 eee 5

104 cse 4

105 mech 4

106 civil 4

\*/

--10.Retrieve the block names along with the count of rooms in each block:

SELECT b.b\_id, b.b\_name, COUNT(br.r\_id) AS room\_count

FROM block b

LEFT JOIN block\_room br ON b.b\_id = br.b\_id

GROUP BY b.b\_id, b.b\_name

/\*output

b\_id b\_name room\_count

1401 M block 4

1402 MNS block 4

1403 G block 4

1404 ME block 4

\*/

--11.Retrieve the list of students who are enrolled in either the "csse" department or the "ece" department:

SELECT st.st\_name

FROM student st

JOIN dept d ON st.st\_dept = d.did

WHERE d.dname = 'csse'

UNION

SELECT st.st\_name

FROM student st

JOIN dept d ON st.st\_dept = d.did

WHERE d.dname = 'ece';

/\*output

st\_name

abhishek

Ajay Naidu

Ajay Sharma

amulya

Ananya Naidu

Ananya Rao

Ananya Sharma

Anjali Kumar

Anjali Reddy

anwar

aswini

avinash

chandrahas

Divya Kumar

Divya Reddy

Divya Sharma

gowtham

hemevalli

hussain

hyndavi

kiranami

lokeshwar

lokesk kumar

mahathi

mallesh

mani

manoj

mukta

narmada

navya deepti

Neha Naidu

Neha Sharma

Nithya Reddy

Nithya Sharma

Priya Naidu

Priya Nair

Priya Rao

Priya Reddy

Priya Sharma

Rajesh Kumar

Rajesh Reddy

rajeswara

rakesh

Rakesh Naidu

Rakesh Rao

ranga

Ravi Kumar

Ravi Reddy

Ravi Sharma

Rohit Reddy

Rohit Sharma

sai charan

sai kiran yadav

sai kumar

saikiran

sandeep

Sandeep Kumar

Sandeep Naidu

Sandeep Patel

Sandeep Rao

Sandeep Sharma

sasi

sidhartha

sudheer

Sushma Rao

Sushma Reddy

Swathi Kumar

Swathi Rao

tharun

thrisha

tocci

ujwala

vamsi priya

vandana

vishnu

Vivek Kumar

Vivek Nair

Vivek Rao

willson

yamini

\*/

--12.Retrieve the departments that have more than 3 subjects offered:

SELECT d.did, d.dname, COUNT(s.sub\_id) AS subject\_count

FROM dept d

LEFT JOIN dep\_sub ds ON d.did = ds.did

LEFT JOIN subjects s ON ds.sub\_id = s.sub\_id

GROUP BY d.did, d.dname

HAVING COUNT(s.sub\_id) > 3

/\*output

did dname subject\_count

101 csse 4

102 ece 5

103 eee 5

104 cse 4

105 mech 4

106 civil 4

\*/

--13.Retrieve the number of students enrolled in each department:

SELECT d.dname, COUNT(\*) AS student\_count

FROM student st

JOIN dept d ON st.st\_dept = d.did

GROUP BY d.dname;

/\*output

dname student\_count

civil 40

cse 40

csse 40

ece 40

eee 40

mech 40

\*/

--14.Retrieve the departments that have more than 5 subjects:

SELECT d.did, d.dname, COUNT(s.sub\_id) AS subject\_count

FROM dept d

JOIN dep\_sub ds ON d.did = ds.did

JOIN subjects s ON ds.sub\_id = s.sub\_id

GROUP BY d.did, d.dname

HAVING COUNT(s.sub\_id) >=5;

/\*output

did dname subject\_count

102 ece 5

103 eee 5

\*/

--15.Retrieve the subject name and the corresponding exam date for each subject:

SELECT s.sub\_name, es.ex\_date

FROM subjects s

JOIN exam\_schedule es ON s.ex\_id = es.ex\_id;

/\*output

sub\_name ex\_date

DMS 2023-06-24

SE 2023-06-24

OS 2023-06-22

EH 2023-06-22

EE 2023-06-24

SM 2023-06-26

SA 2023-06-28

CS 2023-06-24

DE 2023-06-26

EM-2 2023-06-28

E MTS 2023-06-30

DoM 2023-06-22

EM and MT 2023-06-24

FM and M 2023-06-26

TE-1 2023-06-28

AC 2023-06-22

ECA and D 2023-06-24

L and D IC A 2023-06-26

P and SP 2023-06-28

M and I 2023-06-30

AE 2023-06-22

DBMS 2023-06-28

TOC 2023-06-26

DAA 2023-06-22

\*/

--16.Retrieve the invigilator name, department name, and block number for each invigilator:

SELECT i.invig\_name, d.dname,b.b\_id

FROM invigilator i

JOIN dept d ON i.dep= d.did

JOIN block\_room b ON i.invig\_id = b.in\_id;

/\*output

invig\_name dname b\_id

Basheer cse 1401

Shilpa cse 1401

Chengamma cse 1401

Jhoshna cse 1401

Bharat cse 1402

Yogendra prasad csse 1402

Ramu csse 1402

Dhanalakshmi csse 1402

Sandeep kumar csse 1403

Siva kumar mech 1403

Trinad mech 1403

Balakrishna mech 1403

Mishra eee 1404

Sunil eee 1404

Venkatesh eee 1404

Venkatadri ece 1404

\*/

--17.Retrieve the departments along with the count of students in each department:

SELECT d.did, d.dname, COUNT(s.st\_id) AS student\_count

FROM dept d

LEFT JOIN student s ON d.did = s.st\_dept

GROUP BY d.did, d.dname

ORDER BY d.did;

/\*output

did dname student\_count

101 csse 40

102 ece 40

103 eee 40

104 cse 40

105 mech 40

106 civil 40

\*/

--18.Retrieve the exam schedule sorted by date:

SELECT ex\_id, ex\_date, ex\_st\_time, ex\_en\_time

FROM exam\_schedule

ORDER BY ex\_date;

/\*output

ex\_id ex\_date ex\_st\_time ex\_en\_time

1 2023-06-22 10:00:00.0000000 01:00:00.0000000

2 2023-06-24 10:00:00.0000000 01:00:00.0000000

3 2023-06-26 10:00:00.0000000 01:00:00.0000000

4 2023-06-28 10:00:00.0000000 01:00:00.0000000

5 2023-06-30 10:00:00.0000000 01:00:00.0000000

\*/

--19.Find the total number of departments:

SELECT COUNT(\*) AS total\_departments FROM dept;

/\*output

total\_departments

6

\*/

--20.Calculate the average room capacity:

SELECT AVG(r\_cap) AS average\_capacity FROM exam\_room;

/\*output

average\_capacity

25

\*/

--21.Find the minimum room capacity:

SELECT MIN(r\_cap) AS min\_capacity FROM exam\_room;

/\*output

min\_capacity

20

\*/

--22.Calculate the total number of subjects:

SELECT COUNT(\*) AS total\_subjects FROM subjects;

/\*output

total\_subjects

24

\*/

--23.Find the highest room capacity among all blocks:

SELECT MAX(r\_cap) AS max\_capacity FROM exam\_room JOIN block\_room ON exam\_room.r\_id = block\_room.r\_id;

/\*output

max\_capacity

30

\*/

--24.Calculate the total number of students in a specific department:

SELECT COUNT(\*) AS total\_students FROM student WHERE st\_dept = 101;

/\*output

total\_students

40

\*/

--25.Determine the highest marks among all subjects:

SELECT MAX(sub\_tmarks) AS highest\_marks FROM subjects;

/\*output

highest\_marks

70

\*/

--26.Retrieve the exam rooms along with their capacities in descending order:

SELECT r\_id, r\_cap

FROM exam\_room

ORDER BY r\_cap DESC;

/\*output

r\_id r\_cap

607 30

608 30

609 30

610 30

1060 26

1061 26

1062 26

1063 26

2126 25

2127 25

2128 25

2129 25

226 20

227 20

228 20

229 20

\*/

--27.Calculate the total number of subjects for a specific department:

SELECT COUNT(\*) AS total\_subjects FROM dep\_sub WHERE did = 101;

/\*output

total\_subjects

4

\*/

--28.Retrieve the exam rooms that have at least one invigilator assigned to them:

SELECT er.r\_id, er.r\_cap

FROM exam\_room er

JOIN block\_room br ON er.r\_id = br.r\_id

WHERE br.in\_id IS NOT NULL;

/\*output

r\_id r\_cap

226 20

227 20

228 20

229 20

607 30

608 30

609 30

610 30

2126 25

2127 25

2128 25

2129 25

1060 26

1061 26

1062 26

1063 26

\*/

--29.Retrieve the students who have the same department as the subject 'DAA':

SELECT st.st\_id, st.st\_name

FROM student st

JOIN dept d ON st.st\_dept = d.did

JOIN dep\_sub ds ON d.did = ds.did

JOIN subjects s ON ds.sub\_id = s.sub\_id

WHERE s.sub\_name = 'DAA';

/\*output

st\_id st\_name

21121a1501 tharun

21121a1502 thrisha

21121a1503 sasi

21121a1504 avinash

21121a1505 mani

21121a1506 yamini

21121a1507 manoj

21121a1508 sandeep

21121a1509 saikiran

21121a1510 sai kumar

21121a1511 rajeswara

21121a1512 chandrahas

21121a1513 vishnu

21121a1514 amulya

21121a1515 mallesh

21121a1516 kiranami

21121a1517 mukta

21121a1518 tocci

21121a1519 vamsi priya

21121a1520 ranga

21121a1521 hemevalli

21121a1522 lokesk kumar

21121a1523 hyndavi

21121a1524 anwar

21121a1525 navya deepti

21121a1526 sudheer

21121a1527 aswini

21121a1528 sai charan

21121a1529 rakesh

21121a1530 hussain

21121a1531 narmada

21121a1532 gowtham

21121a1533 abhishek

21121a1534 sai kiran yadav

21121a1535 ujwala

21121a1536 willson

21121a1537 sidhartha

21121a1538 mahathi

21121a1539 vandana

21121a1540 lokeshwar

\*/

--30.Retrieve the blocks and their corresponding exam rooms:

SELECT b.b\_id, b.b\_name, r.r\_id, r.r\_cap

FROM block b

JOIN block\_room br ON b.b\_id = br.b\_id

JOIN exam\_room r ON br.r\_id = r.r\_id;

/\*output

b\_id b\_name r\_id r\_cap

1401 M block 226 20

1401 M block 227 20

1401 M block 228 20

1401 M block 229 20

1402 MNS block 607 30

1402 MNS block 608 30

1402 MNS block 609 30

1402 MNS block 610 30

1403 G block 2126 25

1403 G block 2127 25

1403 G block 2128 25

1403 G block 2129 25

1404 ME block 1060 26

1404 ME block 1061 26

1404 ME block 1062 26

1404 ME block 1063 26

\*/

--31.Retrieve the subjects and their corresponding departments:

SELECT s.sub\_id, s.sub\_name, d.dname

FROM subjects s

JOIN dep\_sub ds ON s.sub\_id = ds.sub\_id

JOIN dept d ON ds.did = d.did;

/\*output

sub\_id sub\_name dname

20BT50502 DAA csse

20BT12901 DMS csse

20BT41501 TOC csse

20BT40501 DBMS csse

20BT41501 TOC cse

20BT40501 DBMS cse

20BT31501 OS cse

20BT31201 SE cse

20BT40101 EH civil

20BT40102 EE civil

20BT40103 SM civil

20BT40104 SA civil

20BT40301 DoM mech

20BT40302 EM and MT mech

20BT40303 FM and M mech

20BT40304 TE-1 mech

20BT40401 AC ece

20BT40402 ECA and D ece

20BT40403 L and D IC A ece

20BT40404 P and SP ece

20BT40405 M and I ece

20BT40441 AE eee

20BT40201 CS eee

20BT40202 DE eee

20BT40203 EM-2 eee

20BT40204 E MTS eee

\*/

--32.Retrieve the exam rooms that have a capacity greater than 25:

SELECT r\_id, r\_cap

FROM exam\_room

WHERE r\_cap > 25;

/\*output

r\_id r\_cap

607 30

608 30

609 30

610 30

1060 26

1061 26

1062 26

1063 26

\*/

--33.Retrieve the blocks that have at least 2 exam rooms:

SELECT b.b\_id, b.b\_name, COUNT(br.r\_id) AS room\_count

FROM block b

JOIN block\_room br ON b.b\_id = br.b\_id

GROUP BY b.b\_id, b.b\_name

HAVING COUNT(br.r\_id) >= 2;

/\*output

b\_id b\_name room\_count

1401 M block 4

1402 MNS block 4

1403 G block 4

1404 ME block 4

\*/

--34.Determine the number of students in each department:

SELECT st\_dept, COUNT(\*) AS student\_count

FROM student

GROUP BY st\_dept;

/\*output

st\_dept student\_count

101 40

102 40

103 40

104 40

105 40

106 40

\*/

--35.Retrieve the number of invigilators assigned to each exam room:

SELECT er.r\_id, COUNT(br.in\_id) AS invigilator\_count

FROM exam\_room er

JOIN block\_room br ON er.r\_id = br.r\_id

GROUP BY er.r\_id;

/\*output

r\_id invigilator\_count

226 1

227 1

228 1

229 1

607 1

608 1

609 1

610 1

1060 1

1061 1

1062 1

1063 1

2126 1

2127 1

2128 1

2129 1

\*/

--36.Retrieve the average capacity of exam rooms in each block:

SELECT b.b\_id, b.b\_name, AVG(er.r\_cap) AS avg\_capacity

FROM block b

JOIN block\_room br ON b.b\_id = br.b\_id

JOIN exam\_room er ON br.r\_id = er.r\_id

GROUP BY b.b\_id, b.b\_name;

/\*output

b\_id b\_name avg\_capacity

1401 M block 20

1402 MNS block 30

1403 G block 25

1404 ME block 26

\*/

--37.Retrieve the number of students in each department:

SELECT d.did, d.dname, COUNT(st.st\_id) AS student\_count

FROM dept d

JOIN student st ON d.did = st.st\_dept

GROUP BY d.did, d.dname;

/\*output

did dname student\_count

101 csse 40

102 ece 40

103 eee 40

104 cse 40

105 mech 40

106 civil 40

\*/

--38.Retrieve the total marks for each subject:

SELECT s.sub\_id, s.sub\_name, SUM(s.sub\_tmarks) AS total\_marks

FROM subjects s

GROUP BY s.sub\_id, s.sub\_name;

/\*output

sub\_id sub\_name total\_marks

20BT12901 DMS 70

20BT31201 SE 70

20BT31501 OS 70

20BT40101 EH 70

20BT40102 EE 70

20BT40103 SM 70

20BT40104 SA 70

20BT40201 CS 70

20BT40202 DE 70

20BT40203 EM-2 70

20BT40204 E MTS 70

20BT40301 DoM 70

20BT40302 EM and MT 70

20BT40303 FM and M 70

20BT40304 TE-1 70

20BT40401 AC 70

20BT40402 ECA and D 70

20BT40403 L and D IC A 70

20BT40404 P and SP 70

20BT40405 M and I 70

20BT40441 AE 70

20BT40501 DBMS 70

20BT41501 TOC 70

20BT50502 DAA 70

\*/

--39.Retrieve the number of subjects in each department:

SELECT d.did, d.dname, COUNT(s.sub\_id) AS subject\_count

FROM dept d

JOIN dep\_sub ds ON d.did = ds.did

JOIN subjects s ON ds.sub\_id = s.sub\_id

GROUP BY d.did, d.dname;

/\*output

did dname subject\_count

101 csse 4

102 ece 5

103 eee 5

104 cse 4

105 mech 4

106 civil 4

\*/

--40.Retrieve the names of students who belong to either department 101, department 103, or department 105:

SELECT st\_name FROM student WHERE st\_dept = 101

UNION

SELECT st\_name FROM student WHERE st\_dept = 103

UNION

SELECT st\_name FROM student WHERE st\_dept = 105;

/\*output

st\_name

abhishek

Abhishek Reddy

Aditya Sharma

Ajay Naidu

Ajay Patel

Akash Sharma

Alisha Singh

Alisha Verma

Amanullah Khan

Amir Ahmed

amulya

Ananya Khan

Anjali Kumari

Anjali Naidu

Anjali Patel

Anjali Verma

anwar

Arun Reddy

aswini

avinash

chandrahas

Christina Mathew

Divya Kumar

Divya Sharma

gowtham

hemevalli

hussain

hyndavi

Kareem Khan

Kavya Singh

kiranami

Kirti Singh

Kritika Reddy

Kunal Reddy

Kunal Sharma

lokeshwar

lokesk kumar

mahathi

mallesh

mani

manoj

Manoj Reddy

mukta

narmada

navya deepti

Neha Kumari

Neha Patel

Neha Verma

Niharika Reddy

Nisha Verma

Nithya Sharma

Pooja Patel

Pooja Verma

Prabhu Raja

Prabhu Reddy

Praveen Kumar

Praveen Reddy

Preeti Patel

Priya Reddy

Priya Sharma

Rahul Kumar

Rahul Naidu

Rahul Patel

Rajeev Kumar

Rajesh Mathew

Rajesh Verma

rajeswara

rakesh

Rakesh Nair

ranga

Ravi Patel

Ravi Reddy

Riya Kumari

Rohit Khan

Rohit Naidu

Rohit Reddy

Safiyah Khan

sai charan

sai kiran yadav

sai kumar

saikiran

sandeep

Sandeep Kumar

Sandeep Reddy

Sara Ahmed

Sara Reddy

Sarah Thomas

sasi

Shweta Gupta

Siddharth Naidu

sidhartha

Sneha Naidu

Sofia Ahmed

Sofia Joseph

sudheer

Sushma Reddy

Swathi Thomas

tharun

thrisha

tocci

ujwala

vamsi priya

vandana

Vikas Reddy

Vikram Kumar

Vishal Kumar

vishnu

Vivek Kumar

Vivek Singh

willson

Wilson Mathew

yamini

\*/

--41.Retrieve the names of students who belong to department 101 and id 21121a1533:

SELECT st\_name FROM student WHERE st\_dept = 101

INTERSECT

SELECT st\_name FROM student WHERE st\_id = '21121a1533';

/\*output

st\_name

abhishek

\*/

--42.Retrieve to determine which exam the "Civil" department is going to write on June 22, 2023

SELECT e.ex\_id, e.ex\_date, e.ex\_st\_time, e.ex\_en\_time, s.sub\_name

FROM exam\_schedule e

JOIN subjects s ON e.ex\_id = s.ex\_id

JOIN dep\_sub ds ON s.sub\_id = ds.sub\_id

JOIN dept d ON ds.did = d.did

WHERE d.dname = 'civil' AND e.ex\_date = '2023-06-22';

/\*output

ex\_id ex\_date ex\_st\_time ex\_en\_time sub\_name

1 2023-06-22 10:00:00.0000000 01:00:00.0000000 EH

\*/

--43.Retrieve the names of students who belong to the same department as student 'saikiran':

SELECT st\_name

FROM student

WHERE st\_dept = (SELECT st\_dept FROM student WHERE st\_name = 'saikiran');

/\*output

st\_name

tharun

thrisha

sasi

avinash

mani

yamini

manoj

sandeep

saikiran

sai kumar

rajeswara

chandrahas

vishnu

amulya

mallesh

kiranami

mukta

tocci

vamsi priya

ranga

hemevalli

lokesk kumar

hyndavi

anwar

navya deepti

sudheer

aswini

sai charan

rakesh

hussain

narmada

gowtham

abhishek

sai kiran yadav

ujwala

willson

sidhartha

mahathi

vandana

lokeshwar

\*/

--44.Retrieve the subjects offered by a specific department:

SELECT s.sub\_name

FROM subjects s

JOIN dep\_sub ds ON s.sub\_id = ds.sub\_id

JOIN dept d ON ds.did = d.did

WHERE d.dname = 'csse';

/\*output

sub\_name

DAA

DMS

TOC

DBMS

\*/

--45.Create a view to display the details of students in department 101:

CREATE VIEW view\_dept101 AS

SELECT \* FROM student WHERE st\_dept = 101;

/\*output

st\_id st\_name st\_dept

21121a1501 tharun 101

21121a1502 thrisha 101

21121a1503 sasi 101

21121a1504 avinash 101

21121a1505 mani 101

21121a1506 yamini 101

21121a1507 manoj 101

21121a1508 sandeep 101

21121a1509 saikiran 101

21121a1510 sai kumar 101

21121a1511 rajeswara 101

21121a1512 chandrahas 101

21121a1513 vishnu 101

21121a1514 amulya 101

21121a1515 mallesh 101

21121a1516 kiranami 101

21121a1517 mukta 101

21121a1518 tocci 101

21121a1519 vamsi priya 101

21121a1520 ranga 101

21121a1521 hemevalli 101

21121a1522 lokesk kumar 101

21121a1523 hyndavi 101

21121a1524 anwar 101

21121a1525 navya deepti 101

21121a1526 sudheer 101

21121a1527 aswini 101

21121a1528 sai charan 101

21121a1529 rakesh 101

21121a1530 hussain 101

21121a1531 narmada 101

21121a1532 gowtham 101

21121a1533 abhishek 101

21121a1534 sai kiran yadav 101

21121a1535 ujwala 101

21121a1536 willson 101

21121a1537 sidhartha 101

21121a1538 mahathi 101

21121a1539 vandana 101

21121a1540 lokeshwar 101

\*/

--46.Create a view to display the names of students and their respective departments:

CREATE VIEW view\_student\_dept AS

SELECT st\_name, st\_dept FROM student;

/\*output

st\_name st\_dept

Safiyah Khan 103

Vivek Kumar 103

Manoj Reddy 103

Abhishek Reddy 103

Sarah Thomas 103

Praveen Kumar 103

Prabhu Raja 103

Wilson Mathew 103

Ananya Khan 103

Nithya Sharma 103

Amir Ahmed 103

Rohit Reddy 103

Neha Patel 103

Sofia Joseph 103

Anjali Naidu 103

Divya Kumar 103

Rajesh Mathew 103

Sushma Reddy 103

Ravi Patel 103

Sara Ahmed 103

Rakesh Nair 103

Prabhu Reddy 103

Sandeep Kumar 103

Kareem Khan 103

Swathi Thomas 103

Ananya Khan 103

Priya Sharma 103

Ajay Naidu 103

Neha Patel 103

Sandeep Reddy 103

Sofia Ahmed 103

Praveen Reddy 103

Vivek Kumar 103

Anjali Patel 103

Priya Reddy 103

Rohit Khan 103

Sara Reddy 103

Amanullah Khan 103

Christina Mathew 103

Rahul Kumar 103

Manoj Reddy 104

Abhishek Kumar 104

Praveen Naidu 104

Prabhu Sharma 104

Wilson Rao 104

Ayesha Begum 104

Fatima Khan 104

Sandeep Kumar 104

Anita Reddy 104

John Christian 104

Rajesh Patel 104

Sneha Sharma 104

Muhammad Khan 104

Deepika Naidu 104

Hari Prasad 104

Sarah Thomas 104

Vijay Kumar 104

Nisha Reddy 104

Priyanka Singh 104

Vikram Sharma 104

Aisha Siddiqui 104

Krishna Kumar 104

Shweta Gupta 104

Ahmed Ali 104

Nandini Reddy 104

Kevin Mathew 104

Shalini Rao 104

Rahul Verma 104

Neha Kumari 104

Sanjay Singh 104

Mehnaz Begum 104

Vijay Sharma 104

Amrita Patel 104

Imran Khan 104

Ayesha Siddiqui 104

Rahul Sharma 104

Riya Nair 104

Siddharth Patel 104

Zara Khan 104

Varun Sharma 104

Aman Gupta 106

Riya Sharma 106

Prateek Patel 106

Anjali Reddy 106

Vikram Kumar 106

Neha Verma 106

Rahul Naidu 106

Sneha Sharma 106

Akash Reddy 106

Kirti Patel 106

Vivek Verma 106

Riya Naidu 106

Ankit Sharma 106

Nisha Reddy 106

Ravi Kumar 106

Alisha Patel 106

Rahul Sharma 106

Pooja Reddy 106

Siddharth Kumar 106

Priya Verma 106

Kunal Naidu 106

Riya Sharma 106

Ravi Patel 106

Anjali Kumar 106

Aman Reddy 106

Neha Gupta 106

Rahul Sharma 106

Sneha Patel 106

Akash Reddy 106

Kirti Verma 106

Vivek Naidu 106

Riya Sharma 106

Ankit Reddy 106

Nisha Patel 106

Ravi Kumar 106

Alisha Reddy 106

Rahul Sharma 106

Pooja Patel 106

Siddharth Reddy 106

Priya Kumar 106

Aditya Sharma 105

Niharika Reddy 105

Rajeev Kumar 105

Kirti Singh 105

Rahul Naidu 105

Alisha Verma 105

Kunal Sharma 105

Pooja Patel 105

Arun Reddy 105

Shweta Gupta 105

Vikram Kumar 105

Nisha Verma 105

Rahul Patel 105

Neha Kumari 105

Vivek Singh 105

Sneha Naidu 105

Akash Sharma 105

Kritika Reddy 105

Rajesh Verma 105

Preeti Patel 105

Vishal Kumar 105

Divya Sharma 105

Rohit Naidu 105

Anjali Verma 105

Ravi Reddy 105

Kavya Singh 105

Rahul Kumar 105

Neha Verma 105

Ajay Patel 105

Riya Kumari 105

Siddharth Naidu 105

Priya Sharma 105

Vikas Reddy 105

Nisha Verma 105

Ravi Patel 105

Anjali Kumari 105

Rahul Naidu 105

Pooja Verma 105

Kunal Reddy 105

Alisha Singh 105

Ravi Reddy 102

Priya Sharma 102

Sandeep Naidu 102

Ananya Rao 102

Vivek Kumar 102

Divya Reddy 102

Nithya Sharma 102

Ajay Naidu 102

Priya Rao 102

Sandeep Kumar 102

Anjali Reddy 102

Rohit Sharma 102

Neha Naidu 102

Rakesh Rao 102

Swathi Kumar 102

Rajesh Reddy 102

Sushma Rao 102

Ravi Kumar 102

Priya Reddy 102

Sandeep Sharma 102

Ananya Naidu 102

Vivek Rao 102

Divya Kumar 102

Nithya Reddy 102

Ajay Sharma 102

Priya Naidu 102

Sandeep Rao 102

Anjali Kumar 102

Rohit Reddy 102

Neha Sharma 102

Rakesh Naidu 102

Swathi Rao 102

Rajesh Kumar 102

Sushma Reddy 102

Ravi Sharma 102

Priya Nair 102

Sandeep Patel 102

Ananya Sharma 102

Vivek Nair 102

Divya Sharma 102

tharun 101

thrisha 101

sasi 101

avinash 101

mani 101

yamini 101

manoj 101

sandeep 101

saikiran 101

sai kumar 101

rajeswara 101

chandrahas 101

vishnu 101

amulya 101

mallesh 101

kiranami 101

mukta 101

tocci 101

vamsi priya 101

ranga 101

hemevalli 101

lokesk kumar 101

hyndavi 101

anwar 101

navya deepti 101

sudheer 101

aswini 101

sai charan 101

rakesh 101

hussain 101

narmada 101

gowtham 101

abhishek 101

sai kiran yadav 101

ujwala 101

willson 101

sidhartha 101

mahathi 101

vandana 101

lokeshwar 101

\*/

--48.Retrieve the names of students who belong to departments where the average number of students is greater than 30

and name strt with a:

SELECT st\_name

FROM student

WHERE st\_dept IN (SELECT st\_dept

FROM student

GROUP BY st\_dept

HAVING COUNT(\*) > 30) and st\_name like'a%';

/\*output

st\_name

avinash

amulya

anwar

aswini

abhishek

Ananya Rao

Ajay Naidu

Anjali Reddy

Ananya Naidu

Ajay Sharma

Anjali Kumar

Ananya Sharma

Abhishek Reddy

Ananya Khan

Amir Ahmed

Anjali Naidu

Ananya Khan

Ajay Naidu

Anjali Patel

Amanullah Khan

Abhishek Kumar

Ayesha Begum

Anita Reddy

Aisha Siddiqui

Ahmed Ali

Amrita Patel

Ayesha Siddiqui

Aditya Sharma

Alisha Verma

Arun Reddy

Akash Sharma

Anjali Verma

Ajay Patel

Anjali Kumari

Alisha Singh

Aman Gupta

Anjali Reddy

Akash Reddy

Ankit Sharma

Alisha Patel

Anjali Kumar

Aman Reddy

Akash Reddy

Ankit Reddy

Alisha Reddy

--48.Retrieve the names of students who belong to departments where the average number of students is greater than 30:

SELECT st\_name

FROM student

WHERE st\_dept IN (SELECT st\_dept

FROM student

GROUP BY st\_dept

HAVING COUNT(\*) > 30);

/\*output

st\_name

Safiyah Khan

Vivek Kumar

Manoj Reddy

Abhishek Reddy

Sarah Thomas

Praveen Kumar

Prabhu Raja

Wilson Mathew

Ananya Khan

Nithya Sharma

Amir Ahmed

Rohit Reddy

Neha Patel

Sofia Joseph

Anjali Naidu

Divya Kumar

Rajesh Mathew

Sushma Reddy

Ravi Patel

Sara Ahmed

Rakesh Nair

Prabhu Reddy

Sandeep Kumar

Kareem Khan

Swathi Thomas

Ananya Khan

Priya Sharma

Ajay Naidu

Neha Patel

Sandeep Reddy

Sofia Ahmed

Praveen Reddy

Vivek Kumar

Anjali Patel

Priya Reddy

Rohit Khan

Sara Reddy

Amanullah Khan

Christina Mathew

Rahul Kumar

Manoj Reddy

Abhishek Kumar

Praveen Naidu

Prabhu Sharma

Wilson Rao

Ayesha Begum

Fatima Khan

Sandeep Kumar

Anita Reddy

John Christian

Rajesh Patel

Sneha Sharma

Muhammad Khan

Deepika Naidu

Hari Prasad

Sarah Thomas

Vijay Kumar

Nisha Reddy

Priyanka Singh

Vikram Sharma

Aisha Siddiqui

Krishna Kumar

Shweta Gupta

Ahmed Ali

Nandini Reddy

Kevin Mathew

Shalini Rao

Rahul Verma

Neha Kumari

Sanjay Singh

Mehnaz Begum

Vijay Sharma

Amrita Patel

Imran Khan

Ayesha Siddiqui

Rahul Sharma

Riya Nair

Siddharth Patel

Zara Khan

Varun Sharma

Aman Gupta

Riya Sharma

Prateek Patel

Anjali Reddy

Vikram Kumar

Neha Verma

Rahul Naidu

Sneha Sharma

Akash Reddy

Kirti Patel

Vivek Verma

Riya Naidu

Ankit Sharma

Nisha Reddy

Ravi Kumar

Alisha Patel

Rahul Sharma

Pooja Reddy

Siddharth Kumar

Priya Verma

Kunal Naidu

Riya Sharma

Ravi Patel

Anjali Kumar

Aman Reddy

Neha Gupta

Rahul Sharma

Sneha Patel

Akash Reddy

Kirti Verma

Vivek Naidu

Riya Sharma

Ankit Reddy

Nisha Patel

Ravi Kumar

Alisha Reddy

Rahul Sharma

Pooja Patel

Siddharth Reddy

Priya Kumar

Aditya Sharma

Niharika Reddy

Rajeev Kumar

Kirti Singh

Rahul Naidu

Alisha Verma

Kunal Sharma

Pooja Patel

Arun Reddy

Shweta Gupta

Vikram Kumar

Nisha Verma

Rahul Patel

Neha Kumari

Vivek Singh

Sneha Naidu

Akash Sharma

Kritika Reddy

Rajesh Verma

Preeti Patel

Vishal Kumar

Divya Sharma

Rohit Naidu

Anjali Verma

Ravi Reddy

Kavya Singh

Rahul Kumar

Neha Verma

Ajay Patel

Riya Kumari

Siddharth Naidu

Priya Sharma

Vikas Reddy

Nisha Verma

Ravi Patel

Anjali Kumari

Rahul Naidu

Pooja Verma

Kunal Reddy

Alisha Singh

Ravi Reddy

Priya Sharma

Sandeep Naidu

Ananya Rao

Vivek Kumar

Divya Reddy

Nithya Sharma

Ajay Naidu

Priya Rao

Sandeep Kumar

Anjali Reddy

Rohit Sharma

Neha Naidu

Rakesh Rao

Swathi Kumar

Rajesh Reddy

Sushma Rao

Ravi Kumar

Priya Reddy

Sandeep Sharma

Ananya Naidu

Vivek Rao

Divya Kumar

Nithya Reddy

Ajay Sharma

Priya Naidu

Sandeep Rao

Anjali Kumar

Rohit Reddy

Neha Sharma

Rakesh Naidu

Swathi Rao

Rajesh Kumar

Sushma Reddy

Ravi Sharma

Priya Nair

Sandeep Patel

Ananya Sharma

Vivek Nair

Divya Sharma

tharun

thrisha

sasi

avinash

mani

yamini

manoj

sandeep

saikiran

sai kumar

rajeswara

chandrahas

vishnu

amulya

mallesh

kiranami

mukta

tocci

vamsi priya

ranga

hemevalli

lokesk kumar

hyndavi

anwar

navya deepti

sudheer

aswini

sai charan

rakesh

hussain

narmada

gowtham

abhishek

sai kiran yadav

ujwala

willson

sidhartha

mahathi

vandana

lokeshwar

\*/

--49.Retrieve the names of students who have the lowest student ID in their department:

SELECT st\_name

FROM student s1

WHERE st\_id = (SELECT MIN(st\_id) FROM student s2 WHERE s1.st\_dept = s2.st\_dept);

/\*output

st\_name

tharun

Ravi Reddy

Safiyah Khan

Manoj Reddy

Aditya Sharma

Aman Gupta

--50.Retrieve the names of students who have the same department as student 'Aditya Sharma' and have more than one word in their names:

SELECT st\_name

FROM student

WHERE st\_dept = (SELECT st\_dept FROM student WHERE st\_name = 'Aditya Sharma')

AND st\_name LIKE '% %';

/\*output

st\_name

Aditya Sharma

Niharika Reddy

Rajeev Kumar

Kirti Singh

Rahul Naidu

Alisha Verma

Kunal Sharma

Pooja Patel

Arun Reddy

Shweta Gupta

Vikram Kumar

Nisha Verma

Rahul Patel

Neha Kumari

Vivek Singh

Sneha Naidu

Akash Sharma

Kritika Reddy

Rajesh Verma

Preeti Patel

Vishal Kumar

Divya Sharma

Rohit Naidu

Anjali Verma

Ravi Reddy

Kavya Singh

Rahul Kumar

Neha Verma

Ajay Patel

Riya Kumari

Siddharth Naidu

Priya Sharma

Vikas Reddy

Nisha Verma

Ravi Patel

Anjali Kumari

Rahul Naidu

Pooja Verma

Kunal Reddy

Alisha Singh

\*/

**CHAPTER 4. CONCLUSION AND FUTUREWORK**

**4.1 Conclusion**

The Examination Database Management System for Students is a comprehensive system designed to effectively manage the examination process. It includes multiple tables such as dept, block, block\_room, student, exam\_schedule, exam\_material, invigilator, exam\_room, st\_room, and dep\_sub to ensure seamless organization and coordination.

Brief description about the major outcomes and benefits of online booking system are as follows:

**The Examination Database Management System for Students is a crucial tool that serves multiple purposes and plays a significant role in managing the examination process within an educational institution. It provides a systematic approach to organizing, scheduling, and coordinating exams, ensuring a smooth and efficient examination experience for both students and administrators.**

Overall, the system simplifies and streamlines the entire examination workflow, from scheduling exams and allocating rooms to managing student records and invigilator assignments. It ensures fairness, integrity, and adherence to institutional guidelines, ultimately resulting in a well-organized and efficient examination system for students and administrators alike.

**4.2 Future Work**

Integration with online examination platforms: As technology continues to evolve, integrating the system with online examination platforms can offer additional flexibility and convenience for conducting exams. This could involve developing interfaces or APIs to seamlessly connect the database system with online exam platforms, allowing for remote or computer-based examinations.

Automated scheduling algorithms: Enhancing the exam scheduling process by implementing intelligent algorithms can optimize the allocation of exam dates, times, and rooms. These algorithms can take into account various factors such as student preferences, subject requirements, and resource availability to generate the most efficient and conflict-free exam schedules.

Enhancing security and authentication measures: Strengthening the system's security measures can be a future focus. Implementing robust authentication mechanisms, data encryption techniques, and access controls can help protect the integrity and confidentiality of examination data.

Advanced reporting and analytics: Incorporating advanced reporting and analytics capabilities can provide valuable insights into exam performance, student outcomes, and resource utilization. Generating statistical reports, visualizations, and performance dashboards can assist administrators in making data-driven decisions and identifying areas for improvement.

Mobile application support: Developing a mobile application that complements the database system can enhance accessibility and convenience for students, invigilators, and administrators. This could include features such as exam notifications, room assignments, and real-time updates on exam schedules.

Integration with learning management systems (LMS): Integrating the examination database system with existing learning management systems can create a seamless flow of information between course management, curriculum design, and the examination process. This integration can streamline data transfer, facilitate course-specific exam setups, and provide a holistic view of student performance.

Adaptive testing and personalized assessments: Incorporating adaptive testing methodologies and personalized assessments can enhance the accuracy and effectiveness of exams. Adaptive testing adjusts the difficulty level of questions based on a student's performance, providing a customized and tailored assessment experience.

Extended support for multiple exam formats: Expanding the system's capabilities to support various exam formats, such as practical exams, viva voce examinations, or group assessments, can cater to a wider range of subjects and evaluation methods.

Integration with academic records and transcript systems: Linking the examination database system with academic records and transcript systems can streamline the process of updating student records, calculating grades, and generating official transcripts. This integration can eliminate redundant data entry and ensure accurate and up-to-date academic records.

Continuous system enhancements based on user feedback: Collecting feedback from students, invigilators, and administrators and continuously improving the system based on their input is crucial. Regular updates, bug fixes, and usability improvements can enhance user satisfaction and optimize system performance.