task 1

1. A database is an organized collection of structured data A database is usually controlled by a database management system (DBMS).
2. SQL is a programming language used by nearly all relational databases to query, manipulate, and define data

task 2

1.

|  | SQL | NoSQL |
| --- | --- | --- |
| 1 | Vertically scalable | Horizontally scalable |
| 2 | Table based databases | Document based, key-value pairs, graph databases or wide-column stores |
| 3 | Supports predefined schema | Supports dynamic schema |

2. Popular RDBMS: MySQL is an open-source relational database management system known for its performance and reliability

Use Cases: Commonly used in web applications, e-commerce platforms, and data warehousing, favored by organizations of all sizes.

task 6

A primary key is a unique identifier within a database table. It ensures that each row of data can be uniquely identified. Here are the key points about primary keys:

1. Uniqueness: A primary key must contain a unique value for each record in the table.

2. No Null Values: It cannot contain null values.

task 7

1. NULL Constraint: Allows empty

2. NOT NULL Constraint: Requires a value in the column.

task 8

**auto increment**: automatically generates a unique, sequential value for a specific column

task 9

create database StudentDB;

task 10

use StudentDB;

task 11

create table students (  
id int primary key auto increment,

name varchar(100) not null,

email varchar(100),

enrollment\_date (date)

);

task 12

1. insert into students values (1,”abood”,”[test@test.com](mailto:test@test.com)”,”2024-5-5”,);
2. update students set email = “[koko@test.com](mailto:koko@test.com)” where id = 1;
3. delete from students where id = 1;

**task 13**

create database PracticeDB

CREATE TABLE Employees (

emp\_id INT AUTO\_INCREMENT PRIMARY KEY,

emp\_name VARCHAR(100) NOT NULL,

emp\_position VARCHAR(100),

hire\_date DATE

);

**task 14**

CREATE TABLE Orders (

order\_id INT AUTO\_INCREMENT PRIMARY KEY,

customer\_name VARCHAR(100) NOT NULL,

order\_date DATE NOT NULL,

delivery\_time TIME,

total\_amount DECIMAL(10, 2) NOT NULL

);

**task 15**

INSERT INTO Employees (emp\_name, emp\_position, hire\_date) VALUES

('John Doe', 'Software Engineer', '2022-01-15'),

('Jane Smith', 'Project Manager', '2021-11-20'),

('Alice Johnson', 'Data Analyst', '2023-05-10');

UPDATE Employees

SET emp\_position = 'Senior Software Engineer'

WHERE emp\_name = 'John Doe';

DELETE FROM Employees

WHERE emp\_name = 'Alice Johnson';