**Database management system(DBMS)**

* A DBMS enables users to create and manage a database
* It also helps users create ,read ,update and delete data in a database and its assists with logging and auditing function
* The DBMS provides physical and logical independence from data.
* Users and application do not need to know either the physical or logical location of data.
* A DBMS can also limit and control access to the database and provide different views of the same database schema to multiple user.

**My SQL**

* My SQL is a relational database management system (RDBMS) develop by oracle that is based on structured query language (SQL)
* A relation database is digital store collecting data and organizing it according to the relation model.
* In this model, tables consist of rows and column and relationship between data element all follow a strict logical structure
* An RDBMS is simply the set of software tools used to actually implement manage and query such as data base

**Query to insert data in my SQL**

**Syntax:-**

INSERT INTO table\_name(‘column1’,’column2’…………’column\_n’)

Values(‘[value-1]’,’[value-2]’…………..’[value-n])

**Example:-**

INSERT INTO `teach

`er`(`s id`, `name`, `address`, `salary`, `date of birth`, `gender`, `contact no`, `subject`, `blood group`) VALUES ('[value-1]','[value-2]','[value-3]','[value-4]','[value-5]','[value-6]','[value-7]','[value-8]','[value-9]')

**DATABSE**

* A database is an organized collection of structured information or data typically stored electronically in a computer
* Computer database typically store aggregations of data records or files that contains information , such a scales transitions customer data financial and product information
* Data base are used for starting maintaining and accessing any short of data
* They collect information on people places or things .
* That information is gathered in one place so that it can be observed and analyzed database can be thought of as an organized collection of information

**What are database used for ?**

Business use data stored in database to make informed business is decision same of in ways organization use database include the following

**Improve business process**

Companies collect data about business ,processes such sales order processing data and customer service they analyze that data to improve these processes expand there business and grow revenue.

**Keep track of customers**

Database often store information about people, such as customers or users for example , social media platforms use database to store user information , such as names, email , address and user behavior . the data is used to recommend content to user and improve the user experience.

**Query to select data from table in MYSQL**

**Syntax :**

SELECT\* FROM ‘table \_name ‘WHERE column \_name=’value’

**Example :**

SQL Query to display all record of teacher table having address pyuthan

SELECT\* FROM ‘teacher’ WHERE Address= ‘pyuthan’

Database challenges

**Data security**

* It is required because data is valuable business asset .
* Protecting data stores required skilled cyber security staff which can be easily.

**Data integrity**

* Ensures data is trustworthy
* It is not always easy to achieve data integrity because it means restricting access to database to only those qualified to handle it.

**Database performance**

* Requires regular database updates and maintenance
* Without the proper support database functionality can decline as the technology supporting the database changes or the data its contains changes .

**Database integration**

* Can also be difficult
* It can involve integrating data sources from varying types of database and structure into a single database or into data takes and data ware houses

**Cloud database**

* These database are built in a public private or hybrid cloud for the virtualized environment.
* Users are changed based on how much storage and bandwidth they use.
* They also get salability on demand and high availability these database can work with application deployed as software as services .

**No SQL**

* No SQL databases are good when delving with large collections of distributed data.
* They can address big data performance issues better than relational databases
* They also do well analyzing large unstructured data sets and data on virtual servers in the cloud.
* These database can also be called non relational database

**Query to update data in MYSQL**

**Syntax:**

UPDATE Table \_name SET ‘column\_1 ‘=’ [value-1] ‘’ column\_2 ‘=’ [value-2] ‘,’ column-3 ‘,’[value-3] ‘……….’ Column\_n ‘=’[value-n]; WHERE Column \_name= ‘existing value ‘

**Example:**

UPDATE `teacher` SET `s id`='1',`name`='chumlal khanal',`address`='Airawati-3 darimpata',`salary`='32000',`date of birth`='2033/4/5',`gender`='male',`contact no`='9847972488',`subject`='english',`blood group`='B+' WHERE 1

Secure personal health information

Health care providers use database to securely store personal health data to inform and improve patient core.

**Store personal data:**

Database can also be used to store personal information for example personal cloud storage is available for individual users to store media such as photos in a managed cloud .

**Types of database :**

**Rotational database :**

* Information in a relational database about a specific customer is organized into rows , columns and tables .
* Relational database users SQL in their users and application program interface .
* A new data category can easily be added to a relational data base without having to change the existing applications
* A rotational database management system (RDBMS) is used to store manage query and retrieve data in rotational database.

**SQL Query to display n highest value in table**

**Syntax :**

SELECT\* FROM table name ORDER by salary desc limit n-n,1

**Query to display 4th highest salary of employee**

SELECT \* FROM employee ORDER by salary desc limit 3,1

**Query to delete data in MYSQL**

**Syntax:**

DELETE FROM table name WHERE column name = ‘value’

**Example:**

DELETE FROM `teacher` WHERE 0