**Instructions:**

Please share your answers filled in line in the Word document. Submit code separately wherever applicable.

Please ensure you update all the details:

**Name: E PAVAN KUMAR Batch ID:** 4/08/2023

**Topic: Introduction to Database**

1. **Create a database with a sales table containing data types like int, varchar, char ,date, time, timestamp, Boolean, decimal, text ?**

**Answer;** CREATE DATABASE BUSINESS; USE BUSINESS;

CREATE TABLE SALES(PRODUCTID INT, P\_NAME VARCHAR(40), CATEGORY CHAR(2), SALE\_DATE date, SALE\_TIME time, TIMESTAMP\_COLUMN timestamp, TRANSACTION\_STATUS boolean, saleamount decimal(10,2), sale\_description text);

describe sales;

**output;**

**field type null**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PRODUCTID | int | YES |  |  |  |
| P\_NAME | varchar(40) | YES |  |  |  |
| CATEGORY | char(2) | YES |  |  |  |
| SALE\_DATE | date | YES |  |  |  |
| SALE\_TIME | time | YES |  |  |  |
| TIMESTAMP\_COLUMN | timestamp | YES |  |  |  |
| TRANSACTION\_STATUS | tinyint(1) | YES |  |  |  |
| saleamount | decimal(10,2) | YES |  |  |  |
| sale\_description | text | YES |  |  |  |

1. **Insert 10 random values in the table ?**

ANS; INSERT INTO SALES (P\_NAME, CATEGORY, SALE\_DATE, SALE\_TIME, TIMESTAMP\_COLUMN, TRANSACTION\_STATUS, SALEAMOUNT, SALE\_DESCRIPTION)

VALUES

('Milk', 'DA', '2023-09-01', '10:30:00', '2023-09-01 10:30:00', TRUE, 2.99, 'Purchase of 1 gallon of milk'),

('Bread', 'BA', '2023-09-02', '14:45:00', '2023-09-02 14:45:00', TRUE, 1.99, 'Purchase of a loaf of bread'),

('Apples', 'PR', '2023-09-03', '09:15:00', '2023-09-03 09:15:00', TRUE, 4.99, 'Purchase of 2 lbs of apples'),

('Toothpaste', 'HC', '2023-09-04', '16:00:00', '2023-09-04 16:00:00', TRUE, 3.49, 'Purchase of a toothpaste tube'),

('Shampoo', 'HC', '2023-09-05', '11:30:00', '2023-09-05 11:30:00', TRUE, 5.99, 'Purchase of a shampoo bottle'),

('Bananas', 'PR', '2023-09-06', '14:00:00', '2023-09-06 14:00:00', TRUE, 3.75, 'Purchase of 2 lbs of bananas'),

('Cereal', 'BA', '2023-09-07', '10:45:00', '2023-09-07 10:45:00', TRUE, 2.49, 'Purchase of a box of cereal'),

('Toothbrush', 'HC', '2023-09-08', '13:20:00', '2023-09-08 13:20:00', TRUE, 1.99, 'Purchase of a toothbrush'),

('Soda', 'BE', '2023-09-09', '15:15:00', '2023-09-09 15:15:00', TRUE, 1.49, 'Purchase of a can of soda'),

('Potatoes', 'PR', '2023-09-10', '12:00:00', '2023-09-10 12:00:00', TRUE, 2.99, 'Purchase of 5 lbs of potatoes');

1. **Change the data type of the existing column from DECIMAL (10,2) to FLOAT ?**

ANS; ALTER TABLE SALES modify column SALEAMOUNT FLOAT;

1. **Change the data type of the existing column from Text to Varchar?**

**ANS**; ALTER TABLE SALES MODIFY COLUMN SALE\_DESCRIPTION VARCHAR(250);

1. **What is “BLOB” Data Type in SQL, what are different types of BLOB?**

**ANS;**

In SQL, the term "**BLOB**" stands for **Binary Large Object**. It is a data type used to store binary data, such as images, audio files, video clips, and other types of non-textual data. BLOBs are typically used when you need to store large and unstructured binary data in a database.

There are different types of BLOBs, including:

1. **BLOB (Binary Large Object):** This is a generic term for binary data. It can store any type of binary data, such as images, audio files, or binary documents. BLOBs have no specific format or structure, and they are typically used when the exact content and format of the binary data are not known in advance.
2. **TINYBLOB**: This is a BLOB with a maximum length of 255 bytes.
3. **MEDIUMBLOB**: This is a BLOB with a maximum length of 16,777,215 bytes (16 MB).
4. **LONGBLOB:** This is a BLOB with a maximum length of 4,294,967,295 bytes (4 GB).

The choice of which type of BLOB to use depends on the size of the binary data you need to store. For example, if you are storing small images or thumbnails, a TINYBLOB may be sufficient. For larger multimedia files, you would typically use MEDIUMBLOB or LONGBLOB.

1. **Write different character data types and different numerical data types?**

**ANS; Character Data Types:**

1. **CHAR(n**): Fixed-length character string with a maximum length of 'n' characters. For example, `CHAR(10)` can store a string of exactly 10 characters.

2. **VARCHAR(n**): Variable-length character string with a maximum length of 'n' characters. It only uses as much space as needed for the actual data.

3.  **TEXT:** Variable-length character string for storing large amounts of text data, such as paragraphs or documents.

4.  **NCHAR(n):** Fixed-length Unicode character string with a maximum length of 'n' characters

5.  **NVARCHAR(n):** Variable-length Unicode character string with a maximum length of 'n' characters.

6.  **CLOB**: Character Large Object for storing large amounts of character data.

7. **BLOB**: Binary Large Object for storing binary data, which can include character data as well.

**Numerical Data Types:**

1. **INT (INTEGER):** Integer data type for storing whole numbers.

2. **TINYINT**: 1-byte integer data type for small whole numbers.

3. **SMALLINT**: 2-byte integer data type for small to medium-sized whole numbers.

4. **BIGINT**: 8-byte integer data type for large whole numbers.

5. **FLOAT**: Floating-point number data type for approximate numeric values with a fractional part.

6. **REAL:** Single-precision floating-point number data type.

7. **DOUBLE (DOUBLE PRECISION):** Double-precision floating-point number data type for high-precision numeric values.

8. **DECIMAL(p, s) (NUMERIC(p, s)):** Fixed-point number data type with 'p' total digits and 's' digits to the right of the decimal point.

9. **NUMERIC(p, s):** Synonym for DECIMAL.

10. **BIT:** Binary data type for storing binary values, typically representing boolean data.