Driver Table

license_no	first_name	last_name	Birthday	gender
85AB8354	Mickey	Mouse	November 18, 1928	M
44CD6376	Minnie	Mouse	November 18, 1928	F
86TE4976	Donald	Duck	June 9, 1934	M
34PL3244	Daisy	Duck	April 5, 1937	F

common key

Vehicle Table

vin	year	make	model	color	primary_driver
1D3483488593	2007	Chevrolet	Corvette	Red	44CD6376
3744733845	1974	Chevrolet	Nova	Gold	85AB8354
1F8574465787	2005	Ford	F-350	Black	86TE4976
2C4934185737	2001	Nissan	Sentra	White	34PL3244
1E8477365273	1997	Dodge	Neon	Brown	85AB8354

1. Which of the fields of the Driver Table should be used as its primary key?

   Remember that a primary key needs to be unique for each record. In the case of the drivers in the driver table, the unique id is the field **license_no**.

2. Which of the fields of the Vehicle Table should be used as its primary key?

   vin

3. Which car(s) is Daisy Duck the primary driver for?

   We can determine Daisy Duck's car(s) by using the common key, i.e., the records where Daisy's license_no matches the primary_driver number identifies her car(s). This is true for exactly one car, the **2001 white Nissan Sentra**.

4. What SQL data type would best represent the license_no field, a field of exactly 8 characters?

   a.) BIT   (b.) INTEGER   c.) BIGINT   d.) FLOAT   e.) DATE   f.) DATETIME
   g.) YEAR   (h.) CHAR   i.) VARCHAR   j.) TEXT   k.) ENUM
   There are two ways to define license_no depending on whether you assumed it was to be an integer or a string, i.e., would letters be allowed. If you assumed it would be restricted to integer values, you could have selected the INTEGER[8] type. (TINYINT[M], SMALLINT[M], and MEDIUMINT[M] would be too small to handle 8 digits.) The other option, if you assumed letters could be part of the license_no field, would be to declare it as a CHAR[8]. VARCHAR[8] is not as good as CHAR[8] since the field is intended to be exactly 8 characters. CHAR[8] would make it so you wouldn't have a question as to whether 00001234 was equal to 1234.

5. What SQL data type would best represent the first_name field, a field of up to 20 characters?

   a.) BIT   b.) INTEGER   c.) BIGINT   d.) FLOAT   e.) DATE   f.) DATETIME
   g.) YEAR   h.) CHAR   (i.) VARCHAR   j.) TEXT   k.) ENUM
   Two things are important when defining the data type for first_name: it uses characters and it can be **up to** 20 characters in length. That means VARCHAR[20] would be the best type.

6. What SQL data type would best represent the birthday field?

   a.) BIT   b.) INTEGER   c.) BIGINT   d.) FLOAT   (e.) DATE   f.) DATETIME
   g.) YEAR   h.) CHAR   i.) VARCHAR   j.) TEXT   k.) ENUM
   Okay, hopefully this was a no-brainer. A birthday is a date, right?

7. What SQL data type would best represent the gender field?

a.) BIT   b.) INTEGER   c.) BIGINT   d.) FLOAT   e.) DATE   f.) DATETIME
g.) YEAR   h.) CHAR   i.) VARCHAR   j.) TEXT   (k.) ENUM

The best answer for this case is to have a type from which the user can select from one of two things. This lends itself most to an enumeration or the ENUM type. BOOLEAN might have worked, i.e., true or false is this person a woman, but it wasn't an option in the list above.

8. Describe the purpose of the 'M' for two of the following four data type definitions. (You only need to answer 2 of the 4. If you answer more than 2, I will only grade first 2.)

BIT[(M)] – M indicates the number of bits per value, from 1 to 64. The default is 1 if M is omitted.

DECIMAL[(M[,D])] – M is the total number of decimal digits (the precision) and D is the number of digits after the decimal point (the scale). The definition of D was not required for full credit for this problem.

CHAR(M) – M represents the exact number of characters for values contained in this field. If M isn't specified, default is 1.

TEXT[(M)] – M is the number of characters allowable in the textfield.

9. The difference between the SQL string data types CHAR(*M*) and VARCHAR(*M*) is:

a.) CHAR(M) can only have letters while VARCHAR(M) can be combinations of letters and numbers.
b.) CHAR(M) is initialized as an empty string (no characters at all) while VARCHAR(M) is initialized to a string of M spaces.
c.) CHAR(M) defines strings while VARCHAR(M) is generic representing things like integers too.
(d.) CHAR(M) strings are exactly length M while VARCHAR(M) can be any length up to M.

10. True or False: There are a number of SQL integer data types, TINYINT, SMALLINT, MEDIUMINT, INTEGER, INT, and BIGINT, all of which can be initialized as unsigned (non-negative values only) or signed (a range of positive to negative values)

11. What does the SQL command SELECT do?

SELECT performs an inquiry to the database in order to retrieve records. The syntax of the SELECT statement allows for only specific fields to be returned and/or specific records to be returned based on conditional statements. There are also features that allow for ordering or limited numbers of records to be returned.

12. What does the SQL command SHOW TABLES do? (Be specific.)

After you've selected a database with the USE *database*; command, SHOW TABLES shows all of the tables contained in that database.