Research Week 9

1. **What are ten different data types MySQL provides?**

   AND

2. **How is each data type you described used, and what makes it unique?**

Numeric Data Types

Integers

Data type: (synonyms)	Bytes of storage:	Max # of digits:	Signed value:	Unsigned Value:	Usage:	Java equivalent:
TINYINT (BOOL, BOOLEAN)	1	4	-128 to 127	0 to 255	Very small. Is actually used for determining boolean values. Set as TINYINT(*size*) (See explanation under BOOLEAN.)	Boolean or Integer depending on settings of "tinyInt1isBit." True = Boolean. False = Integer.
Data type:	**Usage:**					**Java equivalent:**
BOOLEAN (BOOL)	BOOLEAN is a synonym for TINYINT and is stored as 1 or 0. A value of 0 is considered false. Any non-zero value is considered true. When using TRUE or FALSE, TRUE represents 1 and FALSE represents 0. If any value other than 1 or 0 is used for BOOLEAN, the BOOLEAN is considered FALSE.					Boolean
INT	4	11	-2,147,483,648 to 2,147,483,647	0 to 4,294,967,295	Most common for numeric data. Set as INT(*size*)	Integer if INT is signed. Long if INT is unsigned.
BIGINT	8	20	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807	0 to 18,446,744,073,709,551,615	Used for integer arithmetic. Set as BIGINT(*size)*	Long if BIGINT is signed. BigInteger if BIGINT is unsigned.

Fixed-point / Exact value

Data type: (synonyms)	Max # of digits:	Max # of decimals digits:	Usage:	Java equivalent:
DECIMAL (DEC, FIXED)	65	30	Decimals must be set using a value for the total number of significant digits, including the decimals, called Precision. Also, the number of digits after the decimal point must be set, called Scaled. Syntax for setting is: DECIMAL(P,S). An example of this is: DECIMAL (5,2) - the total value of this decimal number would be a maximum of 999.99. Calculations with DECIMAL are done with a precision of 65 digits. DECIMAL is a good data type for currency.	BigDecimal

Floating-point (Rational numbers)

Data type:	Precision:	Bytes of storage:	Usage:	Java equivalent:
FLOAT	0-23	4	Used for representing approximate values. FLOAT is set with a value for precision in bits. If the precision is 0 to 23, then MySQL uses FLOAT for the data type with single precision. If the precision is 24 to 53, MySQL uses DOUBLE for the data type with double precision.	Float
DOUBLE	24-53	8		Double

Research Week 9

String Data Types			
Data type:	**Max # of digits:**	**Usage:**	**Java equivalent:**
CHAR	255	Fixed-length string that can contain any alphanumeric characters and some special characters. Set as CHAR(*size*). If the length of the data in the CHAR variable is less than the length set in the definition, the remaining characters to the right are padded with spaces. This means the size set in the definition determines the amount of memory used regardless of how long the actual data being stored is.	String
VARCHAR	65,535	Variable-length string that can contain any alphanumeric characters and some special characters. Set as VARCHAR(*size*). The data stored in memory is only as long as the actual data in the VARCHAR variable. No extra spaces or other characters are added to the VARCHAR variable.	String
Data type:	**Max # of elements:**	**Usage:**	**Java equivalent:**
ENUM	65.535	A string variable that only allows predefined values or elements, similar to a drop-down list in a Windows menu. The list of elements must be entered by the programmer. The maximum number of choices in the list is limited to 65,535.	String

References

11.1.1 Numeric Data Type Syntax. (n.d.). Retrieved January 20, 2023 from https://dev.mysql.com/doc/refman/8.0/en/numeric-type-syntax.html

11.3.1 String Data Type Syntax. (n.d.). Retrieved January 20, 2023 from https://dev.mysql.com/doc/refman/8.0/en/string-type-syntax.html

MySQL Data Types. (n.d.). Retrieved January 20, 2023 from https://www.w3schools.com/mysql/mysql_datatypes.asp

6.5 Java, JDBC, and MySQL Types. (n.d.). Retrieved January 20, 2023 from https://dev.mysql.com/doc/connector-j/8.0/en/connector-j-reference-type-conversions.html