**Week 1: Research**

**Prompts**

What are the 8 primitive data types in Java? What makes them each unique? What values can they hold?

The eight primitive data types in java are Integer, Byte, Short and long integers, single and double precision floating points, Booleans, and characters. A basic integer (written as “int” in code) is a 32-bit whole number with no decimal with an inclusive possible value range of -2^31 to 2^31-1, or a range of 0 to 2^31 if unsigned. A byte is an 8-bit integer with an inclusive possible value range of -128 to 127, they are primarily used in arrays. A short integer (written “short”) is a 16-bit integer with an inclusive possible value range of -32,768 to 32,767, also used commonly in arrays. A long integer (written “long”) is a 64-bit integer with an inclusive possible value range of -2^63 to 2^63-1, or a range of 0 to 2^63 if unsigned, and are also used commonly in arrays. A single precision floating point (written “float”) is a 32-bit numerical entity with a floating point (ie decimal). A double precision float (written “double”) is a larger 64-bit numerical entity with a floating point. A Boolean is a data type that provides 1 bit of information and only two possible values: “true” and “false”. A character (written “char” is a 16-bit Unicode character that has an inclusive possible value range of 0 to 65,535 or ‘\u0000’ to “\ufff”. Though strings are also fundamental, they are not considered a “primitive data type”, likely as they are rather objects created out of groups of the primitive types

References:

*Primitive data types*. Primitive Data Types (The Java™ Tutorials > Learning the Java Language > Language Basics). (n.d.). Retrieved September 5, 2022, from https://docs.oracle.com/javase/tutorial/java/nutsandbolts/datatypes.html

*Variables and Data Types*. Promineo Tech. (n.d.). Retrieved September 5, 2022, from https://www.youtube.com/watch?v=xyZmG3g1VC8

What is your favorite thing you learned this week?