**1. What is the difference between Variables and Constants?**

* **Variables**:
  + Variables are containers for storing data values that **can change** during the execution of a program.
  + In PHP, variables are declared using the $ symbol followed by a name (e.g., $name = "John";).
  + Example:
  + $age = 25;

$age = 30; // Variable value can be changed

* **Constants**:
  + Constants hold **fixed values** that **cannot change** once they are defined during script execution.
  + Constants are declared using the define() function or the const keyword, and they do not use the $ symbol.
  + Example:
  + define("PI", 3.14159); // Using define() function
  + const VERSION = "1.0.0"; // Using const keyword

// These values cannot be changed later in the script.

**2. Name and Describe the Four Data Types in PHP**

The four primary data types in PHP are:

1. **String**:
   * A string is a sequence of characters enclosed in quotes (either single ' ' or double " ").
   * Example:

$name = "John Doe";

1. **Integer**:
   * Integers are non-decimal whole numbers (positive or negative).
   * Example:

$age = 25;

1. **Float (Double)**:
   * Floats are numbers that contain a decimal point or are expressed in exponential form.
   * Example:

$price = 19.99;

1. **Boolean**:
   * Booleans represent two possible values: true or false.
   * Example:

$is\_active = true;

**3. Explain the Purpose of the NULL Data Type**

The **NULL** data type represents a variable with no value assigned. It is used when a variable is explicitly set to have no value or when a variable has not been initialized. In PHP, a variable is considered NULL if:

* It has been assigned the constant NULL.
* It has been declared but has not yet been assigned any value.
* It has been unset using unset().

Example:

Explain

$var = NULL;

if ($var === NULL) {

echo "The variable is NULL.";

}

**Purpose**: NULL is useful for denoting empty, unset, or non-existent values in programs.

**4. What Do You Mean by Strongly and Loosely Typed Programming?**

* **Strongly Typed Programming**:
  + In strongly typed languages, data types are **strictly enforced**. This means that variables must be declared with a specific data type, and conversions between incompatible types often require explicit type casting.
  + Example: In Java, assigning a string to an integer variable would result in a compile-time error.
* **Loosely Typed Programming**:
  + In loosely typed languages, data types are **not strictly enforced**. PHP is loosely typed, which means that variables can change types dynamically, and the language automatically handles type conversions as needed.
  + Example: In PHP, you can assign an integer to a variable, and later assign a string to the same variable without an error.
  + $var = 10; // Integer

$var = "10"; // Now a string

**5. What is Concatenation?**

**Concatenation** is the process of combining or joining two or more strings together. In PHP, the dot (.) operator is used to concatenate strings.

Example:

Explain

$firstName = "John";

$lastName = "Doe";

$fullName = $firstName . " " . $lastName;

echo $fullName; // Output: John Doe

In this example, the two strings $firstName and $lastName are concatenated with a space in between. The result is stored in $fullName.