Day1 of learning in Drop Hills

Basic syntax

- PHP is a server scripting language, and a powerful tool for making dynamic and interactive Web Pages.
- PHP is case sensitive, keywords as if, else, while, echo, classes, functions, and user-defined functions are not case-sensitive. But the variable is case sensitive.
- To get the data type of a variable, use the **var_dump()** function.
- **var_dump()** is a built-in PHP function that allows you to display information about the variable, including the type and value. It is commonly used for debugging purposes to inspect the contents of a variable.
- The **global** keyword is used to access a global variable from within a function.
- PHP also stores all global variables in an array called $GLOBALS [index]. The index holds the name of the variable. This array is also accessible from within functions and can be used to update global variables directly.
- The print_r() function prints the information about a variable in a more human-readable way.

Data Types

- PHP Data Types
  - String
  - Integer
  - Float (Floating point numbers - also called double)
  - Boolean
  - Array
  - Object
  - NULL
  - Resource
- An Integer data type is a non-decimal number between -2,147,483,648 and 2,147,483,647.
- A float (floating point number) is a number with a decimal point or a number in exponential form.
- A Boolean represents two possible states: TRUE or FALSE.
- An array stores multiple values in one single variable.
- Null is a special data type which can have only one value: NULL.
- A variable of data type NULL is a variable that has no value assigned to it.
- If a variable is created without a value, it is automatically assigned a value of NULL.

Type Casting

- Implicit Type Casting
  - Implicit type conversion is commonly referred to as 'Automatic Type Conversion'. It occurs automatically within the compiler without requiring external intervention from the user.
- Explicit Type Casting
  - There are some cases where if the data types remain unchanged, it can give incorrect output. In such cases, typecasting can help to get the correct output and reduce the time of compilation. In explicit type casting, we have to force the conversion between data types. This type of casting is explicitly defined within the program.

PHP Predefined Constants

- PHP has nine predefined constants that change value depending on where they are used and therefore, they are called "magic constants".
  - __CLASS__: If used inside a class, the class name is returned.
  - __DIR__: The directory of the file.
  - __FILE__: The file name including the full path.
  - __FUNCTION__: If inside a function, the function name is returned.
  - __LINE__: The current line number.
  - __METHOD__: If used inside a function that belongs to a class, both class and function name is returned.
  - __NAMESPACE__: If used inside a namespace, the name of the namespace is returned.
  - __TRAIT__: If used inside a trait, the trait name is returned.

PHP Operators

- Arithmetic Operators
- Assignment Operators
- Comparison Operators
- Increment/Decrement Operators
- Logical Operators
- String Operators
- Array Operators
- Conditional assignment Operators

PHP Arrays

- An array is a special variable that can hold many values under a single name, and you can access the values by referring to and index number or name.
  - Indexed Arrays
  - Associative Arrays
  - Multidimensional Arrays

PHP Sorting Arrays
- sort() : sort arrays in ascending order
- rsort() : sort arrays in descending order
- asort() : sort associative arrays in ascending order, according to the value
- ksort() : sort associative arrays in ascending order, according to the key
- arsort() : sort associative arrays in descending order, according to the value
- krsort() : sort associative arrays in descending order, according to the key

PHP Global Variables – Superglobals
- Some predefined variables in PHP are "superglobals", which means that they are always accessible, regardless of scope – and you can access them from any function, class or file without having to do anything special.
- The PHP superglobal variables are:
  - $GLOBALS
  - $_SERVER
  - $_REQUEST
  - $_POST
  - $_GET
  - $_FILES
  - $_ENV
  - $_COOKIE
  - $_SESSION

OOP Concepts
- OOP stands for Object-Oriented Programming.
- Object-oriented programming has several advantages over procedural programming:
  - OOP is faster and easier to execute
  - OOP provides a clear structure for the programs
  - OOP helps to keep the PHP code DRY "Don't Repeat Yourself", and makes the code easier to maintain, modify and debug.
  - OOP makes it possible to create full reusable applications with less code and shorter development time.

Class & Objects
- Classes and objects are the two main aspects of object-oriented programming.
- A class is a template for objects, and an object is an instance of a class.
- When the individual objects are created, they inherit all the properties and behaviors from the class, but each object will have different values for the properties.

OOP – Inheritance

- Inheritance in OOP = When a class derives from another class.
- The child class will inherit all the public and protected properties and methods from the parent class. In addition, it can have its own properties and methods.
- An inherited class is defined by using the extends keyword.

OOP – Abstract Classes

- Abstract classes and methods are when the parent class has named method, but need its child class(es) to fill out the tasks.
- An abstract class is a class that contains at least one abstract method. An abstract method is a method that is declared, but not implemented in the code.
- An abstract class or method is defined with the abstract keyword.

OOP – Interfaces

- Interfaces allow you to specify what methods a class should implement.
- Interfaces make it easy to use a variety of different classes in the same way. When one or more classes use the same interface, it is referred to as "polymorphism".
- Interfaces are declared with the interface keyword.

OOP – Traits

- Traits are used to declare methods that can be used in multiple classes. Traits can have methods and abstract methods that can be used in multiple classes, and the methods can have any access modifier (public, private, or protected).
- Traits are declared with the trait keyword.