What is static programming language?

A static typing programming language is one where the type of a variable is known and checked at compile time rather than at runtime. This means that type errors can be detected before the program is executed, leading to more predictable and safer code.

Example: In statically-typed languages like C, C++, Java, dart and Rust.

What is dynamic programming language?

A dynamic typing programming language is one where the type of a variable is determined at runtime, allowing variables to change types as the program executes. This means type errors are only caught during execution, not at compile time.

Example: Python, JavaScript, Ruby and PHP etc.

What is dart programming language?

Dart is a versatile, object-oriented programming language developed by Google. It is designed to be easy to learn and use, and it offers several features that make it suitable for various programming tasks, especially in building modern applications.

What is Variable?

Variables is a type of identifier that refers to a memory address in a computer’s memory that maintains a value for that variable. This value can be updated throughout the program’s execution.

Types of variables in dart

**1). Dynamic**: In Dart, dynamic is a special type that indicates a variable can hold values of any type and can change type at runtime. Use dynamic when you need flexibility in the type.

**2). Static:** The static variables belong to the class instead of a specific instance. A static variable is common to all instances of a class: this means only a single copy of the static variable is shared among all the instances of a class. The memory allocation for static variables happens only once in the class area at the time of class loading.

**Syntax:** static [date\_type] [variable\_name];

What are data types?

Data types are a keyword that are used to define the type of data that a variable can store. They specify the size and type of values that can be stored in an identifier.

What is String?

A string is a sequence of character.

**Dart Number**

The Darts Number is used to store the numeric values. The number can be two types:

1. integer
2. double.

**Dart Boolean**

The Boolean type represents the two values - true and false.

**What is List in Dart?**

In Dart, arrays are represented by the List class. There are several ways to create and initialize lists in Dart, depending on your needs. Here’s a comprehensive guide to different types of list creation in Dart:

**Types of List creation in dart**

1. Empty List Creation.
2. List with Initial Elements.
3. Fixed-Length List.
4. List with Different Initial Values.
5. List from Another Iterable.
6. List with Typed Elements.
7. List with Mixed Types.
8. Growable List vs Fixed-Length List.

**Sets in dart**

In Dart programming, a Set is a collection of unique items. Unlike lists or arrays, sets do not allow duplicate elements and are not ordered. This means that the elements in a set are not indexed, and their order may not be preserved.

There are two ways to create sets in dart

1. var variable\_name = <variable\_type>{};
2. set <variable\_type> variable\_name = {};

Map in Dart

In Dart, a Map is a data type that stores a collection of key-value pairs. Each key in a Map is unique and is associated with a specific value. The Map allows you to efficiently retrieve, add, or update values based on their keys.

Types of Maps in dart:

1. Using Map Literals
2. Using Map Constructors

**Map Laterals**

**Syntax:**

// Creating the Map using Map Literals

var map\_name = { key1 : value1, key2 : value2, ..., key n : value n }

Map Constructors

**Syntax:**

// Creating the Map using Map Constructor

var map\_name = new Map();

// Assigning value and key inside Map

map\_name [ key ] = value;

Special Data Types:

In Dart, var and dynamic are considered special data types because they are used to handle variables in ways that differ from traditional static typing.

They are two types they are:

1. Dynamic
2. Var

Difference between late and ? in dart

1. **Late**: Indicates that a non-nullable variable will be initialized later, not at the time of declaration.
2. **?** : Declares a variable that can be null, meaning it is nullable.