**Dart Programming Language**

Dart is a modern, general-purpose programming language developed by Google. It is optimized for building fast, multi-platform applications — especially mobile apps, but also web, desktop, and backend.

1. **Variables:** Name assigned to the memory location.

Types of variables in dart:

1. num: Supertype for both integer and floating point numbers.

Two types:

int: whole numbers without floating point.

Ex: void main()

{

int x=10;

print(x); //10

print(x.runtimeType); //int

}

double: number with floating point.

Ex: void main()

{

double x=10.33;

print(x); //10.33

print(x.runtimeType); //double

}

2) bool: In Dart, bool is the Boolean data type, which can store only two values:

* true
* false

Ex: void main()

{

int a = 10;

int b = 5;

bool isGreater = a > b;

bool isEqual = a == b;

print(isGreater); // true

print(isEqual); // false

}

3) dynamic: dynamic declares a variable whose type is not checked at compile time. The variable can hold any type, and its type can change during runtime.

Ex: void main()

{

dynamic a = "Hello";

print(a); // Output: Hello

a = 100;

print(a); // Output: 100

a = true;

print(a); // Output: true

}

4) var: var declares a variable with type inference. The Dart compiler infers the variable’s type from the initial value, and after that, the type is fixed and cannot change.

Ex: void main()

{

var name = "Alice"; // Dart infers String type

print(name); // Output: Alice

// name = 123; // Error: Can't assign int to a String variable

}

5) String: sequence of characters.

Ex: void main()

{

String name= "john"; // john

}

NOTE:

1) float datatype is not used in dart.

2) void main()

{

num a = 0.1; or double a=0.1;

num b = 0.2; or double b=0.2;

num sum = a + b; // Result: 0.30000000000000004 due to floating-point precision

}

Floating-point numbers like 0.1 and 0.2 cannot be represented exactly in binary, causing tiny precision errors.

Solution: Use .toStringAsFixed() beacuse it converts a number to a string representation with a fixed number of decimal places.

* It rounds the number to the specified decimal places.
* Returns a string, not a number.

Ex: void main()

{

num a=0.1;

num b=0.2;

num s=a+b;

print(s.toStringAsFixed(2)); //0.30

}