Dart (Programming Language)

- Dart is a programming language, developed by google which is replaced by Java on 2015.
- A simple hello world program in Dart:

  ```
  main () {
  Print("Hello World");
  }
  ```

- Variable types used in Dart are:
  Dart doesn't support **float**
  1. Int
  2. Double
  3. Num - to store either whole numbers or decimal numbers
  4. String
  5. Bool
  6. Var – overrides only for same data type
  7. Dynamic – initializes at runtime and can override for any datatype

The main difference b/w var and dynamic are

For example:

```
main () {

  var x=10;

  x=12;

 print(x); // Here we get an output of 12

 }
```

But,

```
main () {

  var x=10;

  x=" fun";

 print(x); // Here it doesn't support, and we get an error but dynamic supports

 }
```

- To find the datatype we use runtimeType() in dart:

```
main () {
  String x="fun";
  print(x.runtimeType); // It prints String as an output
}
```

- A small example using bool data type:

```
void main () {
bool isAlive = true;
if(isAlive)
{
  print("YES"); // It prints YES as an output
}
else
{
  print("No");
}
}
```

- Here,

```
void main() {
  double x=0.2;
  double y=0.1;
  print(x+y);
}
```

It gives an output of 0.30000000000000004 instead of 0.3 because in Computers store numbers in binary (base-2), and some decimal fractions—like 0.1 or 0.2—cannot be represented exactly in binary. Instead, they're stored as approximations. So when you add 0.2 and 0.1, the result isn't exactly 0.3, but a tiny bit more:

$0.2 \approx 0.200000000000000011102230246...$

$0.1 \approx 0.100000000000000005551115123...$

Together we will get,
0.300000000000000044408345369...

To overcome this error, we use toStringAsFixed() :

```
void main () {

  double x = 0.2;

  double y = 0.1;

  print ((x + y).toStringAsFixed(1)); // Output is 0.3

}
```