Variables

17 September 2023 13:08

```
void main() {
  final String name = "Astik";
  name = "Joy"; //  We can not do this.The varible values can be set only once.
}
```

```
void main() {
  double? var1;
  var var2 = "Hello Astik !";
  print(var1);
  print(var2);
}
```

```
void main() {
  late String name;
  name = "Joy";
  print(name);
}
```

1. If we give '?' mark at the end of data type then it will assign NULL by default, so we can use that varibale.
2. If we do not give '?' mark and do not initializse the varibale then we use that variable then it give error.
3. 'late' keyword is used to tell the dart that we do not want null by default but I will initialze it before using it.
4. 'final' and 'const' are the keyword ehich tell that the variabeks cant be re-initialized.
5. It is better to use 'late' and '?' mark whenever required. It redu ceds many bugs.

Data Types :

1. Number
2. String
3. Boolean
4. Map

```
void main() {
  int num1 = 10; // Correct
  int num2 = 10.2; // Error
  double num3 = 20; // Correct
  double num4 = 10.3; // Correct
  // Srring data type
  // Stirng in Dart has to be defined inside single or double quotes
  String firstName = "Astik";
  String lastName = 'Gorai';
  print(firstName + " " + lastName);
  // Another way to concatenate string
  String fullName = "$firstName $lastName";
  print(fullName);
  // Boolean Data Type
  // Either True or False
  bool isTuesDay = false;
  print(isTuesDay);
  // They can work on and , or clause
  // List
  // An ordered data type
  // An array in other programming language
  List list1 = ['A', 'B', 'C'];
  var list2 = [1, 2, 3, 'Another Data Type'];
  // Map
  Map map1 = {
    "firstName": 'Astik',
    'lastName': 'Gorai',
    "email": 'hereisastik@gmail.com',
    1: '5'
  };
  print(list1);
  print(list2);
  print(map1);
}
```

```
void main() {
  // '''  Multi Line String '''
  var firstName = 'Astik';
  String lastName = 'Gorai';
  // String Interpolation
  print(firstName + " " + lastName);
  String fullName = firstName + ' ' +
lastName;
  String fullName2 = '$firstName
$lastName';
  String val = '${2 + 2} Mr. $firstName
$lastName';
  print(val);
  print(fullName);
  print(fullName2);
  print(fullName.length);
  print(fullName.isEmpty);
  print(fullName.toLowerCase());
  print(fullName.toUpperCase());
  String name3 = '  $firstName
$lastName  ';
  print(name3.trim());
  print(fullName.substring(3));
  print(fullName.substring(3, 7));
  print(fullName.split(' '));
}
```

Number Data Type

```
void main() {
  int num1 = 10;
  double num2 = 10.56;
  // There is another data type 'num' , which inherits
  // from the int and ndouble data type, it has many
functionality
  var num3 = num1 + num2; // +, - ,*, / , %,
  print(num3);
  var number = num.parse('12'); // Converts  into integer
  print(number == '12');
  print(number);
  double num4 = 0.01;
  print(num4.isInfinite);
  print(num4.isNaN);
  print(num4.isNegative);
  print(num4.sign);
  print(num4.toInt());
  int num5 = 12;
  print(num5.toDouble());
  print(num5.toString());
  print(num5.abs());
  print(num4.round());
}
```

Functions

17 September 2023 15:47

```
void main() {

  printInfo("Charlie"); // Using default values for age and city
  printInfo("David", age: 40); // Providing age using a named argument
  printInfo("Eve", city: "Paris"); // Providing city using a named argument
  printInfo("Astik", clg: "IIEST Shibpur", city: "Bankura");

}

void printInfo(String name,
    {int age = 30, String city = "Unknown", String? clg}) {
  print("Name: $name, Age: $age, City: $city, College :$clg");
}
```

Named Arguments (Optional):

- Named arguments are optional by default. You specify them using curly braces {} in the function definition.
- They allow you to pass arguments to a function in any order, making them optional.

Positional Argument : The Ordinal arguments are positional Argument.

```
// Functions
void main() {
  print(multiply(2, 2));
}
int multiply(int num1, int num2) {
  return num1 * num2;
}
```

Decision Making

17 September 2023 16:01

```
void main(){
  bool flag1 = true;
  bool flag2 = false;

  if(flag1 && flag2){
    print("2X :)");
  } else if(flag1 || flag2){
    print("1X :)");
  }else{
    print(":(");
  }
}
```

```
void main() {
  var ateBreakfast = "Eggs";
  switch (ateBreakfast) {
    case "Eggs":
      {
        print(":)");
      }
      break;
    case "Milk":
      {
        print(":|");
      }
      break;
    default:
      {
        print(":(");
      }
      break;
  }
}
```

Loops

17 September 2023 16:15

```dart
// Loops in Dart
void main() {
  for (int i = 0; i < 10; i++) {
    print(i);
  }
  var list1 = ['A', 'B', 'C', 'D'];
  for (var charecter in list1) {
    if (charecter == 'A') continue;
    print(charecter);
    if (charecter == 'C') break;
  }
  var x = 10;
  while (x < 10) {
    print(x);
    x += 1;
  }
  var n = -1;
  do {
    print(n);
    n -= 1;
  } while (n >= 0);
}
```

Class and Objects

17 September 2023 16:45

```
class Car {
  String engine;
//   Car(String engineVal){
//     this.engine = engineVal;
//   }
  Car(this.engine) {}
  void display() {
    print(engine);
  }
}
void main() {
  Car c1 = new Car("V6");
  Car c2 = new Car("V8");
  c1.display();
  c2.display();
  print(c1.engine);
}
```

```
class Vehicle {
  String engine;
  Vehicle(this.engine) {}
  void display() {
    print(engine);
  }
}
class SuperCar extends Vehicle {
  SuperCar(String engine) : super(engine); //  Here We Tell to call
the constructor of the base class
}
void main() {
  Vehicle c1 = new Vehicle("V6");
  Vehicle c2 = new Vehicle("V8");
  SuperCar s1 = new SuperCar("V16");
  s1.display();
  c1.display();
  c2.display();
  print(c1.engine);
}
```

If we give '_' before any property or method of a class then it is considered to be a private method or property of that class.

Maps and Lists

17 September 2023 16:52

```
void main() {
  var cars = {"Tesla": " Electronics", "Totoya": " Gasoline", 6: "Six"};
  print(cars);
  var fruits = new Map();
  fruits["Apple"] = "Red";
  print(fruits);
  var userAges = {"Astik": 22, "Fahim": 22, "Joy": 18};
  print(userAges["Astik"]);
}
```

```
void main(){

  var list1 = ['A','B','C','D'];
  list1.add('E');
  print(list1);

  // list1.length
  // list1.first
  // list1.isEmpty
  // list1.last
  // list[1]

}
```