Dart Programming - Map

The Map object is a simple key/value pair. Keys and values in a map may be of any type. A Map is a dynamic collection. In other words, Maps can grow and shrink at runtime.

Maps can be declared in two ways −

- Using Map Literals
- Using a Map constructor

Declaring a Map using Map Literals

To declare a map using map literals, you need to enclose the key-value pairs within a pair of curly brackets **"{ }"**.

Here is its **syntax** −

```
var identifier = { key1:value1, key2:value2 [,…..,key_n:value_n] }
```

Declaring a Map using a Map Constructor

To declare a Map using a Map constructor, we have two steps. First, declare the map and second, initialize the map.

The **syntax** to **declare a map** is as follows −

```
var identifier = new Map()
```

Now, use the following syntax to **initialize the map** −

```
map_name[key] = value
```

Example: Map Literal

Live Demo

```
void main() {
   var details = {'Usrname':'tom','Password':'pass@123'};
   print(details);
}
```

It will produce the following **output** −

```
{Usrname: tom, Password: pass@123}
```

Example: Adding Values to Map Literals at Runtime

Live Demo

```
void main() {
   var details = {'Usrname':'tom','Password':'pass@123'};
   details['Uid'] = 'U1oo1';
   print(details);
}
```

It will produce the following **output** −

```
{Usrname: tom, Password: pass@123, Uid: U1oo1}
```

Example: Map Constructor

Live Demo

```
void main() {
   var details = new Map();
   details['Usrname'] = 'admin';
   details['Password'] = 'admin@123';
   print(details);
}
```

It will produce the following **output** −

```
{Usrname: admin, Password: admin@123}
```

Note − A map value can be any object including NULL.

Map – Properties

The **Map** class in the dart:core package defines the following properties −

Sr.No	Property & Description
1	Keys Returns an iterable object representing keys
2	Values Returns an iterable object representing values
3	Length Returns the size of the Map
4	isEmpty Returns true if the Map is an empty Map
5	isNotEmpty Returns true if the Map is an empty Map

Map - Functions

Following are the commonly used functions for manipulating Maps in Dart.

Sr.No	Function Name & Description
1	addAll() Adds all key-value pairs of other to this map.
2	clear() Removes all pairs from the map.
3	remove() Removes key and its associated value, if present, from the map.
4	forEach() Applies f to each key-value pair of the map.