

devfest

```
// You'll need  
// com.google.  
listRef.listAll  
.addOn  
prefixes.  
// All  
// You  
}  
it  
each { item  
the items  
}  
}
```

Improving App Performance using Constant Object



Google Developer Groups

Bandung



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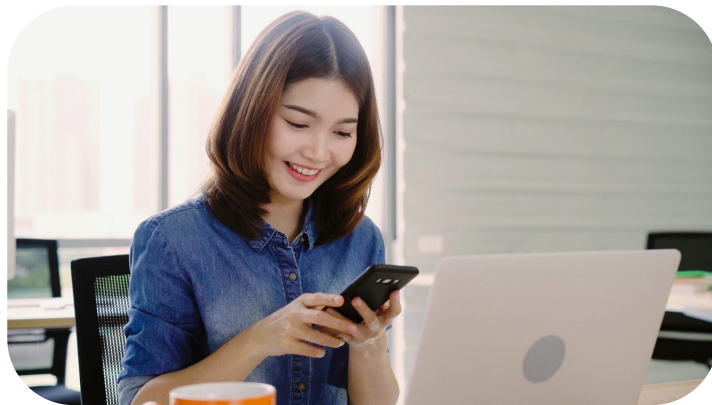


Good User Experience ➡ Longer Engagement Time

1. Fast paced lifestyle → impatient users
2. One of UX elements: how much and quick your app helps your users.
3. Users want to finish their task easily and quickly → optimize app performance is important.
 - a. Removing unnecessary process.
 - b. Removing unnecessary memory usages.



Using constant object



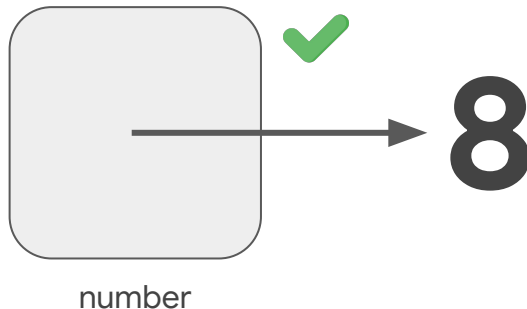
Variable refers to an object

```
int number = 8;
```

A variable doesn't contain a value / object.



A variable do refer to a value / object.

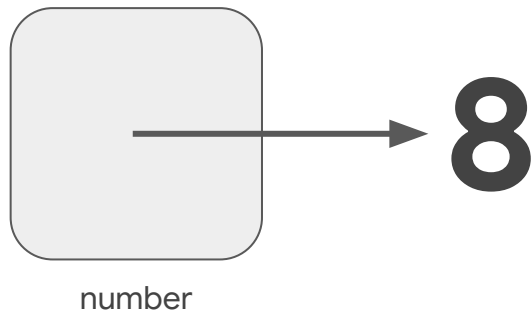


Final Variables

1. It can only be set once.
2. It refers to the same value/object FOREVER.

```
final int number = 8;  
number = 7; // This statement will make an error
```

Number keep refers to 8 as long as the app is running.



Constants

Two type of constants:

1. Literal constant: A constant written literally. Example: 1, 5.12, 'Jennie'.
2. Symbolic constant: A constant written using symbol. Example: PI which represents 3.14.

The diagram illustrates the classification of variables and constants in Go code. It shows two lines of code with arrows pointing to specific parts:

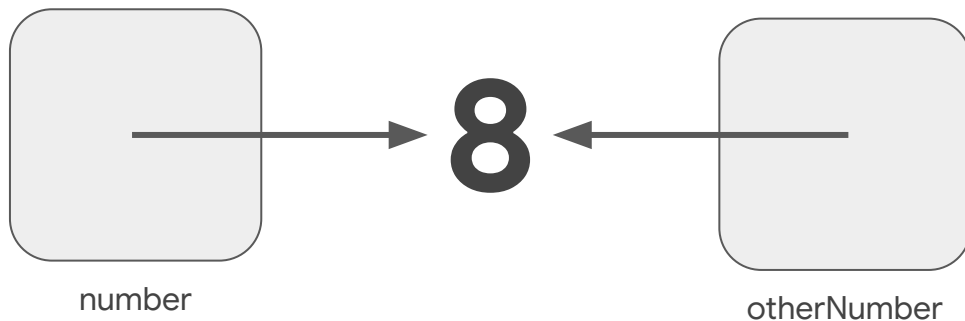
- `int number = 8;`:
 - A green arrow points from the word `number` to the label `variable`.
 - A red arrow points from the value `8` to the label `literal constant`.
- `const String name = 'Jennie';`:
 - A blue arrow points from the word `name` to the label `symbolic constant`.
 - A red arrow points from the value `'Jennie'` to the label `literal constant`.



Constants

1. A constant represents an object in memory FOREVER → memory efficient.
2. Constants are evaluated and created at the compile time → reduce run-time operation → time efficient.

```
int number = 8;  
const int eightNumber = 8;  
int otherNumber = 2 + 6;
```



The value/object **8** is represented by:

1. Literal constant: **8**
2. Symbolic constant: **eightNumber**
3. Expression: **2 + 6**



Class with const constructor

1. All of the field must be final.
2. All of the field must be initialized directly or via constructor.

```
class Person {  
    final String name;  
    final int age;  
    final int favoriteNumber = 8;  
  
    const Person(this.name, {this.age = 18});  
}
```

Creating const object

Create an object of a class which has const constructor using const keyword.

```
void main(List<String> arguments) {  
    Person person = const Person('John');  
}
```



```
void main(List<String> arguments) {  
    Person person1 = Person('John');  
    Person person2 = Person('John');  
}
```

Refer to two different Person objects whose name is 'John' → takes 2 spaces in memory.

```
void main(List<String> arguments) {  
    Person person1 = const Person('John');  
    Person person2 = Person('John');  
}
```

```
void main(List<String> arguments) {  
    Person person1 = const Person('John');  
    Person person2 = const Person('John');  
}
```

Refer to only one Person object → takes 1 space in memory.



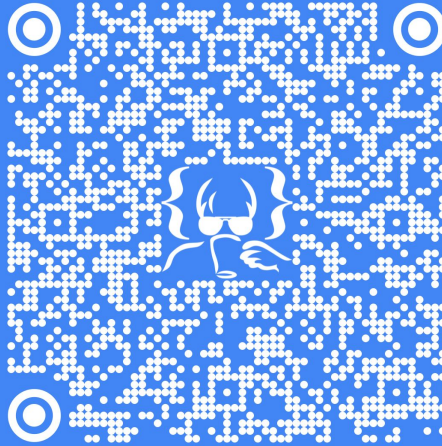
Const Related Dart Linter

1. These object can be created at the compile-time because all the value they need are known from the beginning.
2. There is a high possibility that we will use the object of `SizeBox` with height of 20.

```
body: Center(  
  child: Column(  
    mainAxisAlignment: MainAxisAlignment.center,  
    children: [  
      Text('Hello Cruel World!'),  
      SizeBox(height: 20),  
      ElevatedButton(onPressed: () {}, child: Text('Button'))  
    ],  
  ), // Column  
) , // Center
```



Thank you



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