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Naming “Things”

Variables, Constants & Properties

Functions & Methods

Classes

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Names should be **meaningful**

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Why Names Matter

Well-named “Things” allow readers to **understand your code without going through it in detail**

```
const user = new User()
```

```
database.insert(user)
```

```
if (isLoggedIn) { … }
```

To understand the above code, we don’t need to go through the full class or function definitions and all the other code

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We'll Not Always Agree!

```
const admin = new Admin();
```

This is readable

And so is this

```
const admin = new AdminUser();
```

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How To Name Things Correctly

Variables & Constants	Functions / Methods	Classes
Data containers	Commands or calculated values	Use classes to create “things”
e.g. user input data, validation results, a list of products	e.g. send data to server, check if user input is valid	e.g. a user, a product, a http request body
Use **nouns** or short phrases with **adjectives**	Use **verbs** or short phrases with **adjectives**	Use **nouns** or short phrases with **nouns**
`const userData = { … }` `const isValid = …`	`sendData()` `inputIsValid()`	`class User { … }` `class RequestBody { … }`

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Name Casing

snake_case	camelCase	PascalCase	kebab-case
`is_valid` `send_response`	`isValid` `sendResponse`	`AdminRole` `UserRepository`	`<side-drawer>`
e.g. Python	e.g. Java, JavaScript	e.g. Python, Java, JavaScript	e.g. HTML
Variables, functions, methods	Variables, functions, methods	Classes	Custom HTML Elements

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Naming Variables, Constants & Properties

Value is an Object	Value is Number or String	Value is a Boolean
Describe the value	Describe the value	Answer a true/ false question
`user` `database`	`name` `age`	`isActive` `loggedIn`
Provide more details without introducing redundancy	Provide more details without introducing redundancy	Provide more details without introducing redundancy
`authenticatedUser` `sqlDatabase`	`firstName` `age`	`isActiveUser` `loggedIn`

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Examples – Variable Names

What is stored?	Bad Names	Okay Names	Good Names
A user object (name, email, age)	`u` `data`	`userData` `person`	`user` `customer`
	”u” and “data” could contain anything	“userData” is a bit redundant, “person” is too unspecific	”user” is descriptive, “customer” is even more specific
User input validation result (true/ false)			

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Examples – Variable Names

What is stored?	Bad Names	Okay Names	Good Names
A user object (name, email, age)	`u` `data`	`userData` `person`	`user` `customer`
	”u” and “data” could contain anything	“userData” is a bit redundant, “person” is too unspecific	”user” is descriptive, “customer” is even more specific
User input validation result (true/ false)	`v` `val`	`correct` `validatedInput`	`isCorrect` `isValid`
	“v” could be anything, “val” could also stand for “value”	Both terms don’t necessarily imply a true/ false value	Descriptive and value type is clear

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Naming Functions & Methods

Function performs an operation	Function computes a Boolean
Describe the operation	Answer a true/ false question
`getUser(…)` `response.send()`	`isValid(…)` `purchase.isPaid()`
Provide more details without introducing redundancy	Provide more details without introducing redundancy
`getUserByEmail(…)` `response.send()`	`emailIsValid(…)` `purchase.isPaid()`

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Examples – Function / Method Names

What does the function do?	Bad Names	Okay Names	Good Names
Save user data to a database	`process(…)` `handle(…)`	`save(…)` `storeData(…)`	`saveUser(…)` `user.store(…)`
	Both are very unspecific – what is being "processed"?	At least we know that something is saved – but what?	The intent is very clear – especially with the method
Validate the user input			

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Examples – Function / Method Names

What does the function do?	Bad Names	Okay Names	Good Names
Save user data to a database	`process(…)` `handle(…)`	`save(…)` `storeData(…)`	`saveUser(…)` `user.store(…)`
	Both are very unspecific – what is being "processed"?	At least we know that something is saved – but what?	The intent is very clear – especially with the method
Validate the user input	`process(…)` `save(…)`	`validateSave(…)` `check(…)`	`validate(…)` `isValid(…)`
	Unspecific ("process") or even misleading ("save")	Both names are not 100% specific	Both makes sense – depends on what the function does exactly

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Naming Classes

Describe the Object

`User`
`Product`

Provide more details without introducing redundancy

`Customer`
`Course`

Avoid redundant suffixes → Classes are typically instantiated

`DatabaseManager` → Instantiating a “DatabaseManager” makes no sense

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Examples – Class Names

Which object is described?	Bad Names	Okay Names	Good Names
A User	`class UEntity` `class ObjA`	`class UserObj` `class AppUser`	`class User` `class Admin`
	Both are very unspecific	Both class names have redundant information	"User" is just fine – or "Admin" if it's a more specific kind of user
A Database *(in code)*			

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Examples – Class Names

Which object is described?	Bad Names	Okay Names	Good Names
A User	`class UEntity` `class ObjA`	`class UserObj` `class AppUser`	`class User` `class Admin`
	Both are very unspecific	Both class names have redundant information	"User" is just fine – or "Admin" if it's a more specific kind of user
A Database *(in code)*	`class Data` `class DataStorage`	`class Db` `class Data`	`class Database` `class SQLDatabase`
	It's not clear that we're describing a database	Not 100% specific	"Database" is good, "SQLDatabase" might be even better

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Don't Include Redundant Information In Names

```
userWithNameAndAge = User('Max', 31)
```

Even without knowing the class definition, it's easy to guess that this user has a name and age

In general, it's expected that a "User" will contain some user data

We should look into the class definition if we want to learn more about the "User" object

Names should avoid describing unnecessary or redundant details

```
user = User('Max', 31)
(newUser, loggedInUser)
```

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Avoid Slang, Unclear Abbreviations & Disinformation

	Avoid	Do
Slang	`product.diePlease()` `user.facePalm()`	`product.remove()` `user.sendErrorMessage()`
Unclear Abbreviations	`message(n)` `ymdt = '20210121CET'`	`message(newUser)` `dateWithTimezone = '20210121CET'`
Disinformation	`userList = { u1: …, u2: … }` `allAccounts = accounts.filter()`	`userMap = { u1: …, u2: … }` `filteredAccounts = accounts.filter()`

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Choose Distinctive Names

```
analytics.getDailyData(day)
analytics.getDayData()
analytics.getRawDailyData(day)
analytics.getParsedDailyData(day)
```

These methods all sound very similar, it's hard to tell when you would use which method

```
analytics.getDailyReport(day)
analytics.getDataForToday()
analytics.getRawDailyData(day)
analytics.getParsedDailyData(day)
```

All methods are very distinct from each other, it's easy to choose when to call which method

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Be Consistent