

# 🌿 How to Create Class Diagrams with Mermaid.js

Class diagrams are an essential part of software design. With [Mermaid.js](#), you can visualize class relationships directly in your markdown, HTML, or documentation tools using a simple, declarative syntax.

## 🎨 Step 1: Load Mermaid.js

Use the following script tag to load Mermaid as an ES module:

```
<script type="module">
  import mermaid from 'https://cdn.jsdelivr.net/npm/mermaid@10/dist/mermaid.esm.min.mjs';
  mermaid.initialize({ startOnLoad: true });
</script>
```

## 📐 Basic Syntax of Class Diagrams

Start with the keyword `classDiagram`. Then define classes, their members (attributes and methods), and the relationships between them.

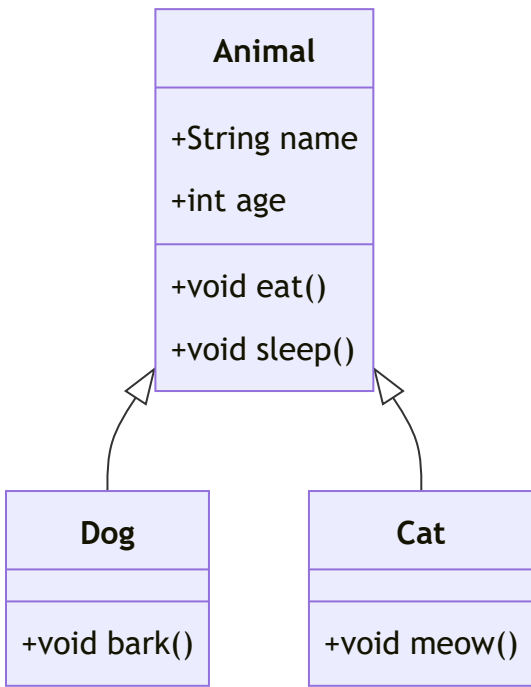
```
<div class="mermaid">
classDiagram
class Animal {
+String name
+int age
+void eat()
+void sleep()
}

class Dog {
+void bark()
}

class Cat {
+void meow()
}

Animal <|-- Dog
Animal <|-- Cat
</div>
```

Rendered Example:



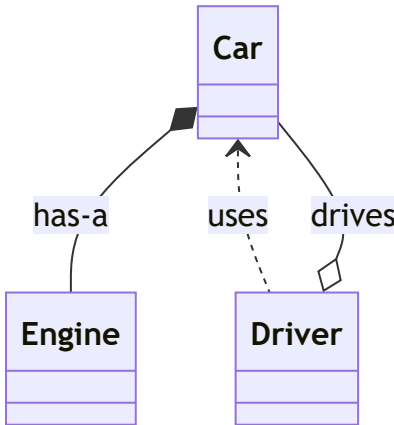
## 🧠 Understanding the Syntax

- `class ClassName { ... }` — Define a class with attributes and methods
- `+` / `-` — Visibility modifiers: `+` for public, `-` for private
- `ClassA <|-- ClassB` — Inheritance (ClassB inherits from ClassA)
- `ClassA o-- ClassB` — Aggregation
- `ClassA *-- ClassB` — Composition
- `ClassA <--> ClassB` — Bidirectional association

## 🔗 More Relationships

```
<div class="mermaid">
classDiagram
class Engine
class Car
class Driver

Car *-- Engine : has-a
Driver o-- Car : drives
Car <-- Driver : uses
</div>
```



## 🔧 Advanced Features

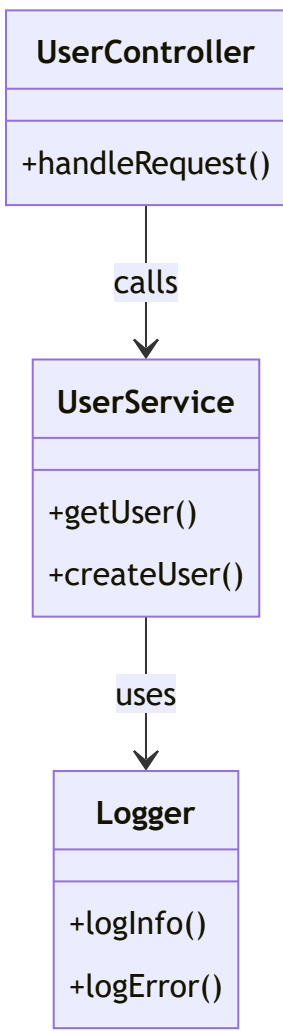
Group Classes with Packages

```
<div class="mermaid">
classDiagram
class Logger {
+logInfo()
+logError()
}

class UserService {
+getUser()
+createUser()
}

class UserController {
+handleRequest()
}

UserService --> Logger : uses
UserController --> UserService : calls
</div>
```



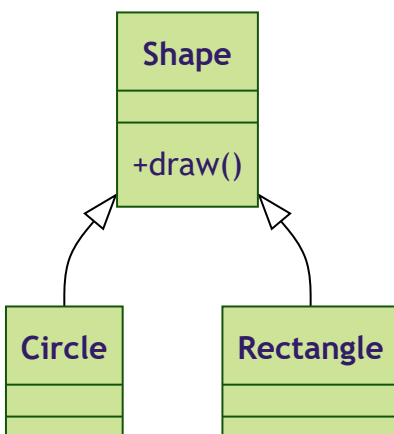
## 🎨 Styling and Theming

You can use Mermaid directives to apply themes:

```
<div class="mermaid">
%%{ init: { "theme": "forest" } }%%
classDiagram
class Shape {
+draw()
}

class Circle
class Rectangle

Shape <|-- Circle
Shape <|-- Rectangle
</div>
```



## 📚 Resources

Full documentation and advanced options are available at the official Mermaid Class Diagram page:

<https://mermaid.js.org/syntax/classDiagram.html>

## ✅ Summary

- Define class diagrams using `classDiagram` syntax
- Use visibility modifiers, relationships, and namespaces
- Visualize object-oriented structures with clean, simple code
- Embed in HTML, markdown, or tools like Docsify, Obsidian, and Docusaurus

Mermaid is perfect for technical documentation, architecture diagrams, and quick prototypes — all without needing a visual editor.