GDG Aachen

Dart

FLIGHT SCHOOL

WITH ANGULARDART

Welcome

#flydart #gdgac

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Introduction to

Dart

Based on the Slides by Seth Ladd

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Who am I?

Sebastian Mauer aka maui

GDG Aachen Co-Lead

Software Engineer

CS Student

I don’t work for Google …yet

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Dart

is about two things:

✔ Improved productivity
✔ Increased performance

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Learn the language in under one hour.

(we have the whole day)

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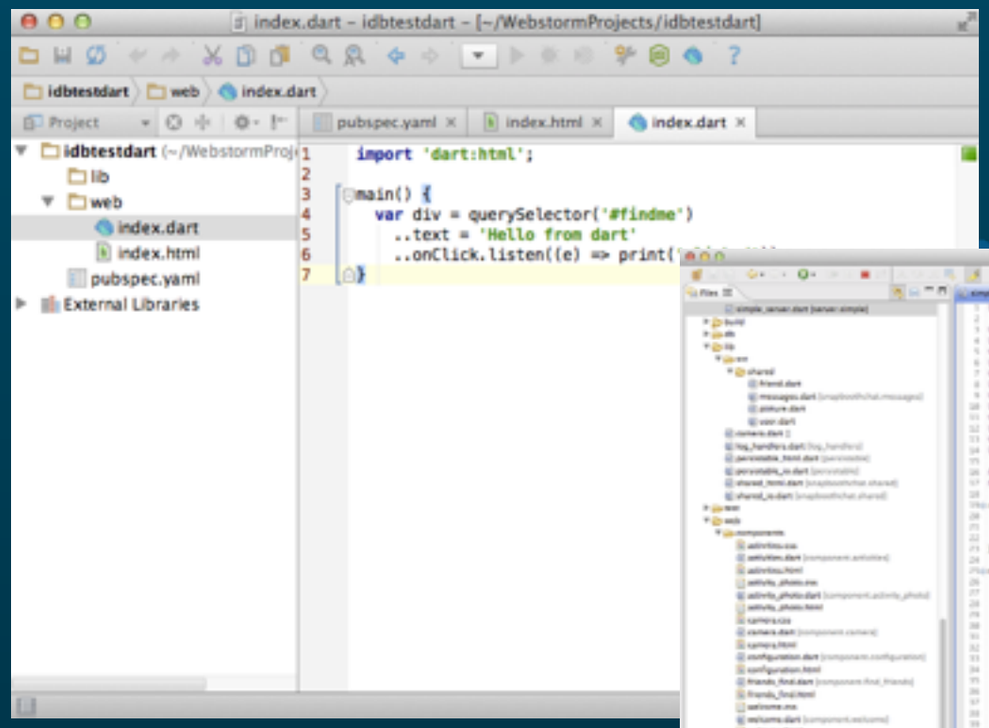
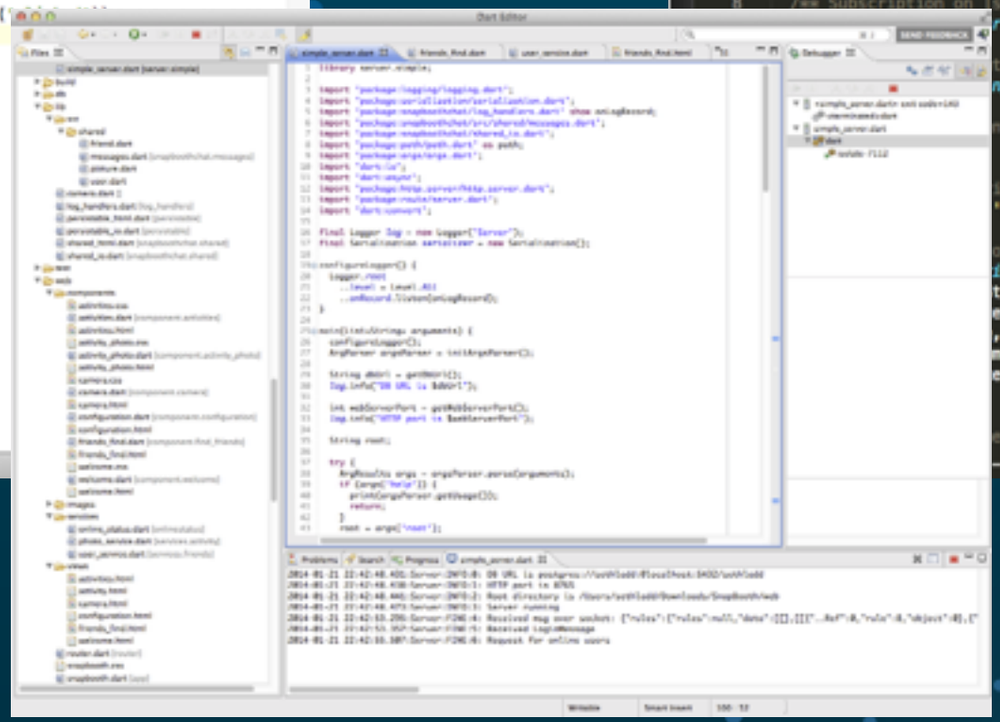
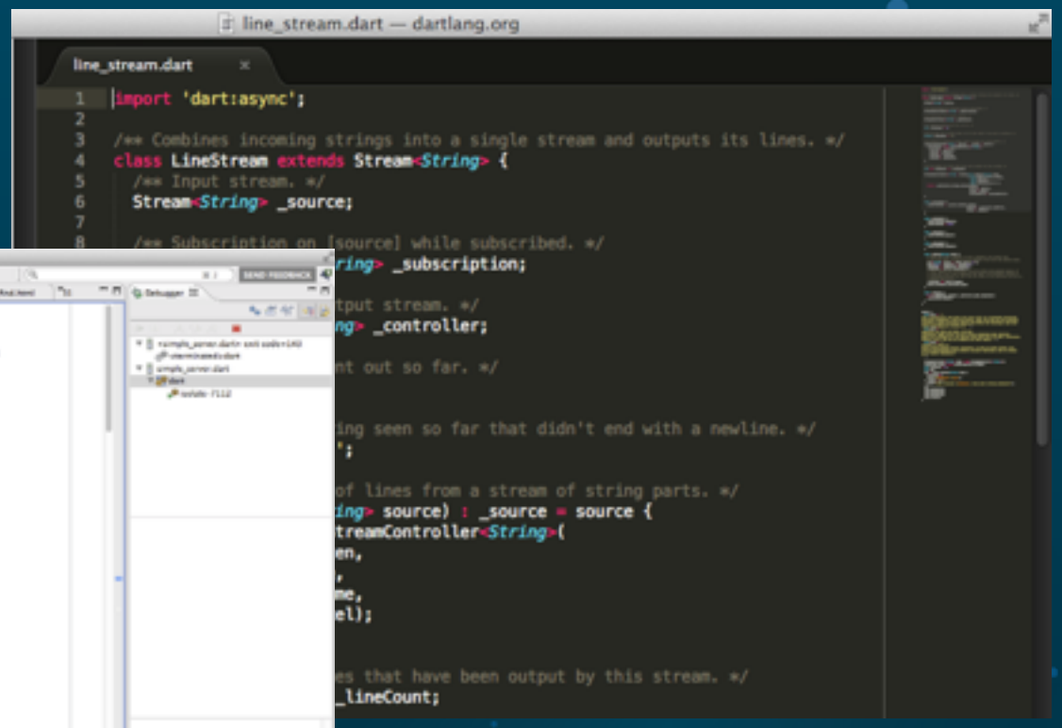
Use the tools you already know



IntelliJ



Eclipse (DartEditor)



Sublime

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Compile to JavaScript

(runs across the modern web)

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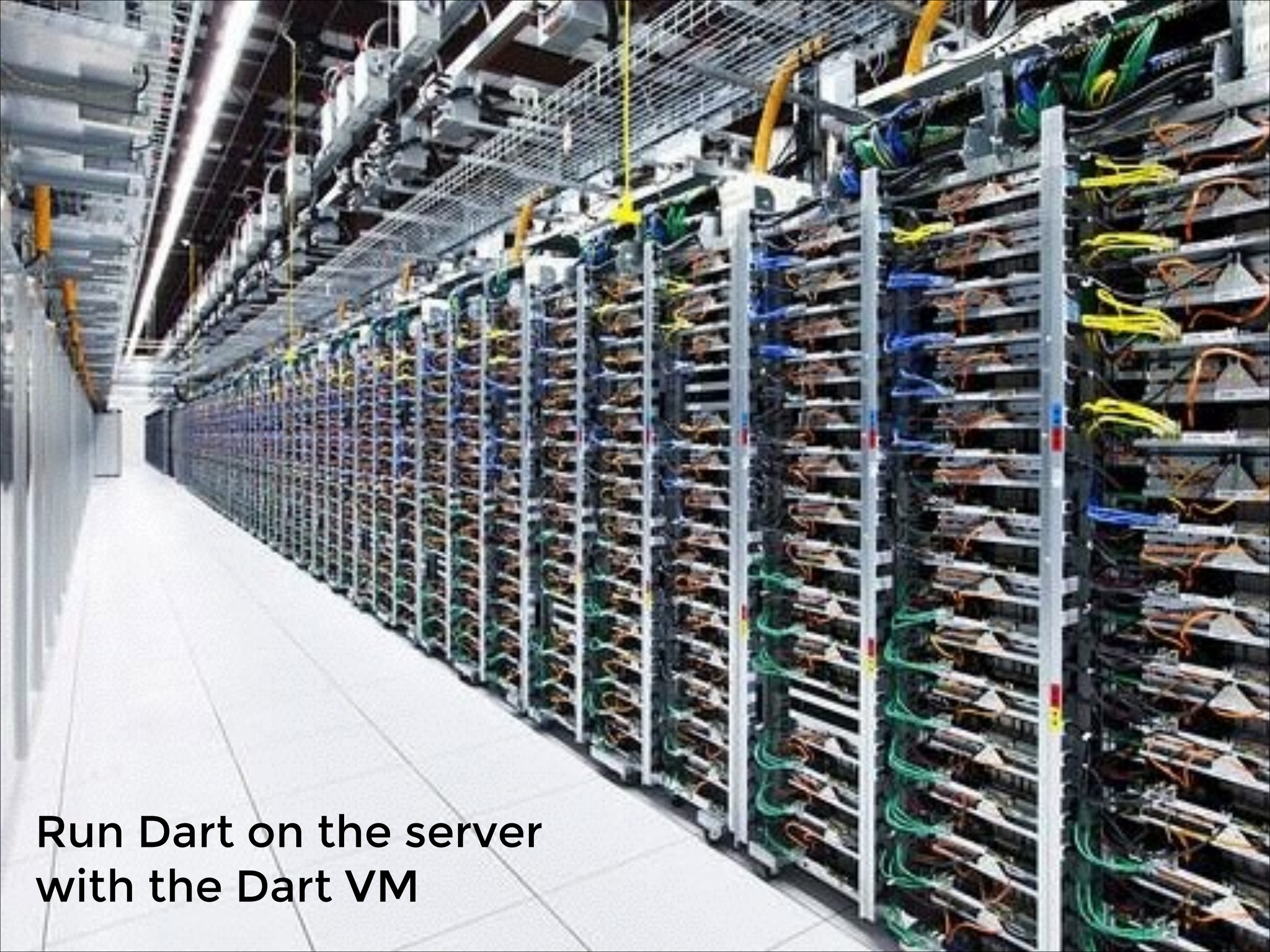
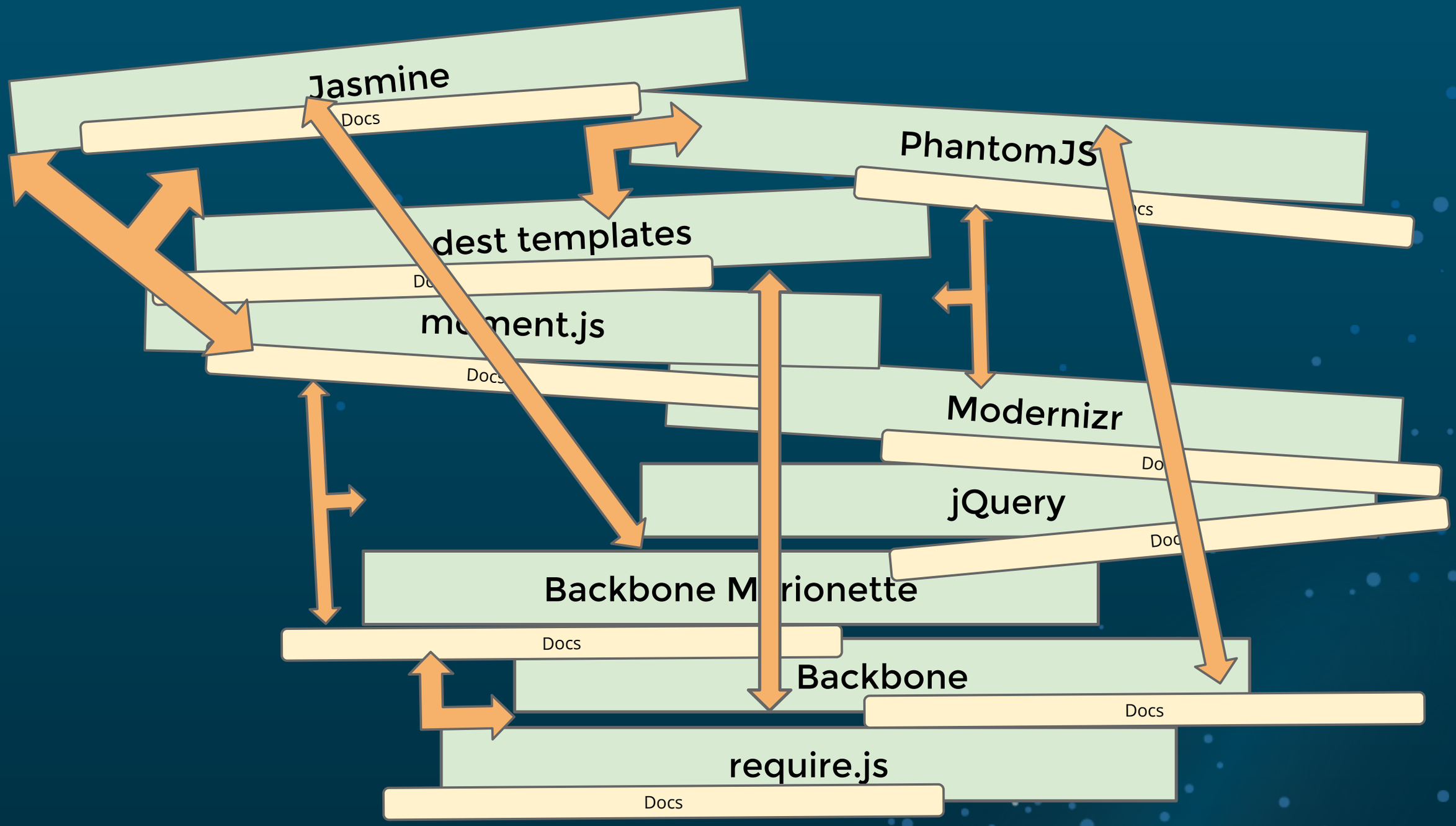


Run Dart on the server with the Dart VM



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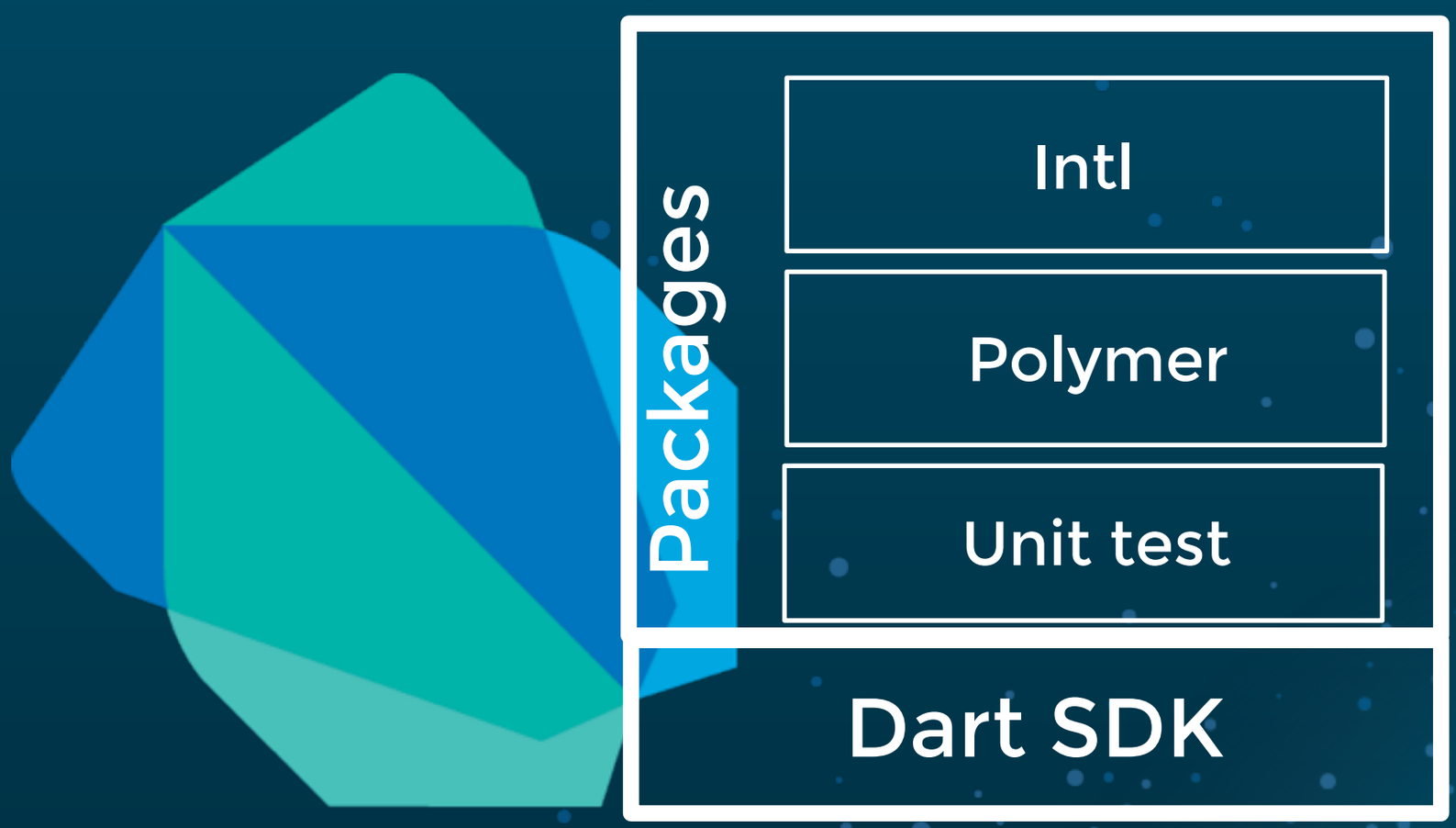
Clear and consistent



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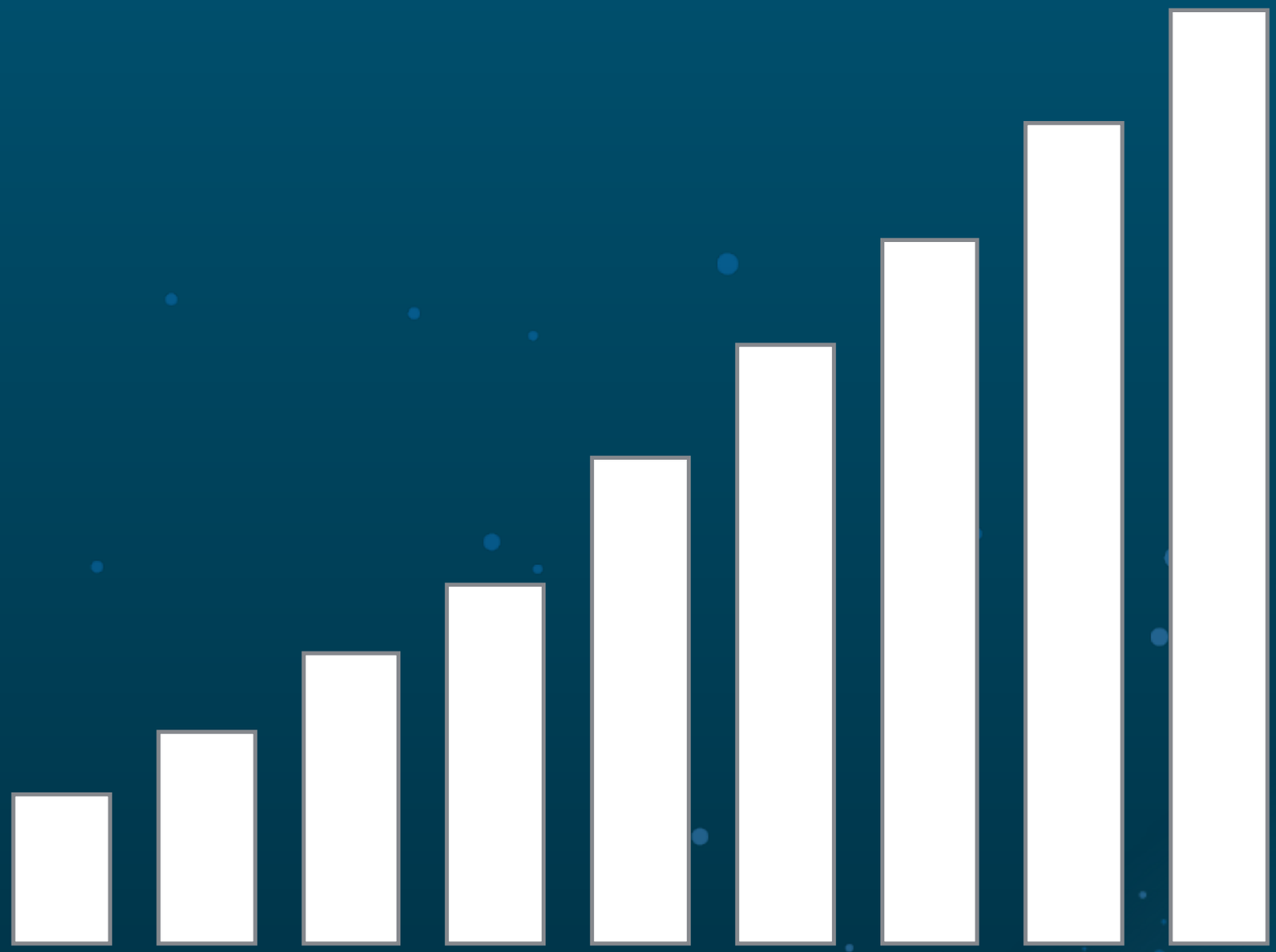

Apps start small, but grow and scale

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Simple syntax, ceremony free

```
class Hug {
```

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Simple syntax, ceremony free

```
class Hug {
     num strength;
     Hug(this.strength);
```

Simple syntax, ceremony free

```
class Hug {
     num strength;
     Hug(this.strength);

Hug operator +(Hug other) {
     return new Hug(strength +
          other.strength);
}
```

Operator overriding

Simple syntax, ceremony free

```
class Hug {
    num strength;
    Hug(this.strength);

Hug operator +(Hug other) {
    return new Hug(strength + other.strength);
}

void patBack({int hands: 1}) {
    // ...
}
```

Named, optional params w/ default value

Simple syntax, ceremony free

```
…
Hug operator +(Hug other) {
    return new Hug(strength + other.strength);
}

void patBack({int hands: 1}) {
    // ...
}

String toString() => "Embraceometer reads $strength";
```

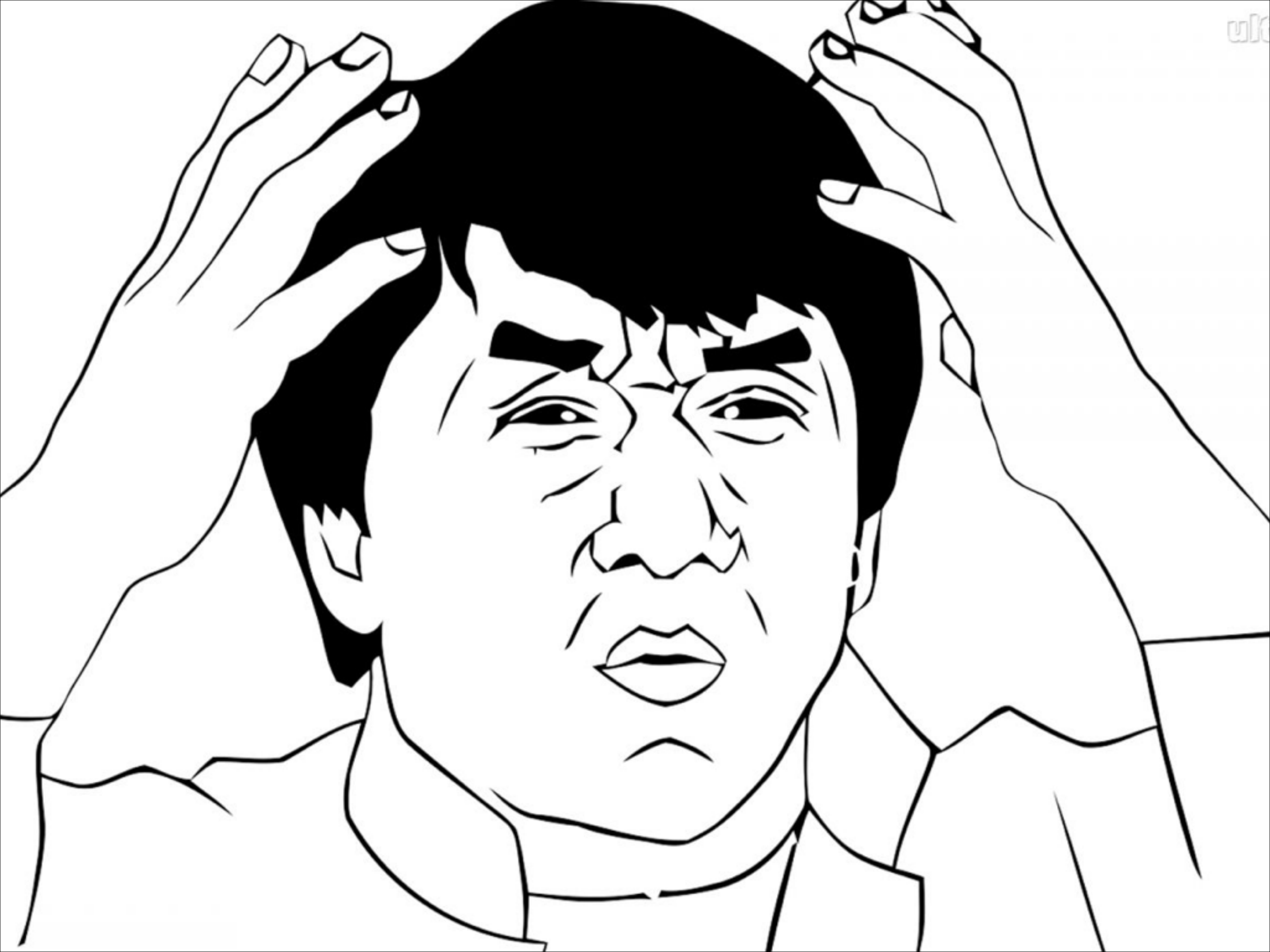
Simple syntax, ceremony free

```
…
Hug operator +(Hug other) {
    return new Hug(strength + other.strength);
}

void patBack({int hands: 1}) {
    // ...
}

String toString() => "Embraceometer reads $strength";
```

String interpolation




Lets Do
This
Thing

Clean semantics and behavior

Examples

- Only true is truthy
- There is no undefined, only null
- No type coercion with ==, +

Clean semantics and behavior

```
"hello".missing  // ??
```

Class 'String' has no instance getter 'missing'
NoSuchMethodError : method not found: ‚missing'
Receiver: "hello"
Arguments: []

LOGICAL!

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Clean semantics and behavior

```
'hello' > 1  // ??
```

Class 'String' has no instance method '>'.

LOGICAL!

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Clean semantics and behavior

Variable scope?

```
var foo = 'top-level';

main() {
  if (true) { var foo = 'inside'; }

  print(foo);  // ?? What will this print?
}
```

top-level

NO HOISTING!

LOGICAL!

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Clean semantics and behavior

Scope of „this“?

```
class AwesomeButton {

  AwesomeButton(button) {
    button.onClick.listen((Event e) => this.atomicDinosaurRock());
  }

  atomicDinosaurRock() {
    /* ... */
  }
}
```

LEXICAL THIS!

LOGICAL!

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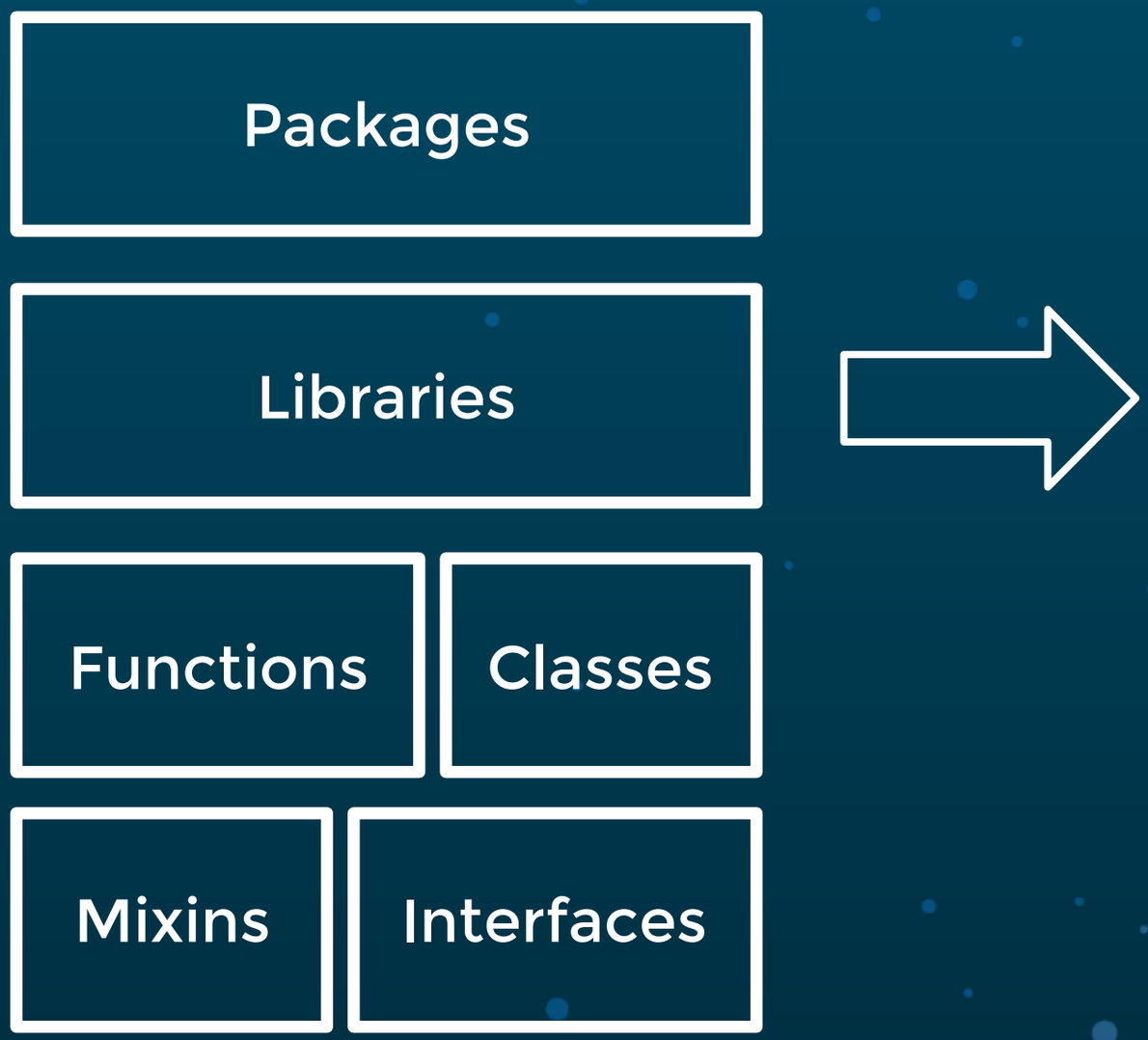
Scalable Structure




```
library games;

import 'dart:math';
import 'players.dart';

class Darts {
  // ...
}

class Bowling {
  // ...
}

Player findOpponent(int skillLevel) {
  // ...
}
```

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Too many Buttons

```
var button = new ButtonElement();
button.id = 'fancy';
button.text = 'Click Point';
button.classes.add('important');
button.onClick.listen((e) => addTopHat());

parentElement.children.add(button);
```

Method cascades

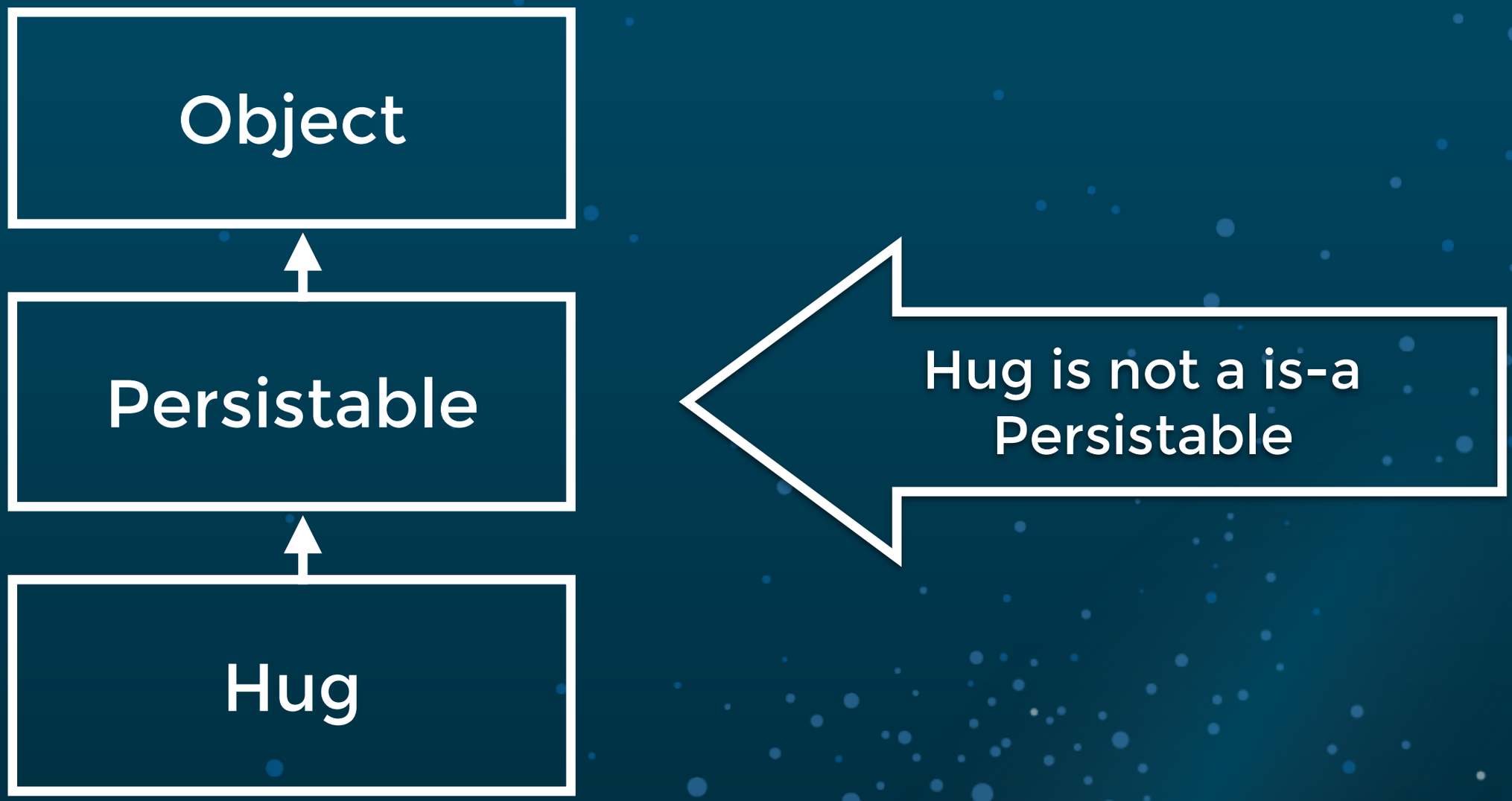
```
var button = new ButtonElement()
  ..id = 'fancy'
  ..text = 'Click Point'
  ..classes.add('important')
  ..onClick.listen((e) => addTopHat());

parentElement.children.add(button);
```

Inline initialization

```
parentElement.children.add(
    new ButtonElement()..text = 'Click Point');
```

One of these things is not like the other



Don’t pollute your inheritance tree!

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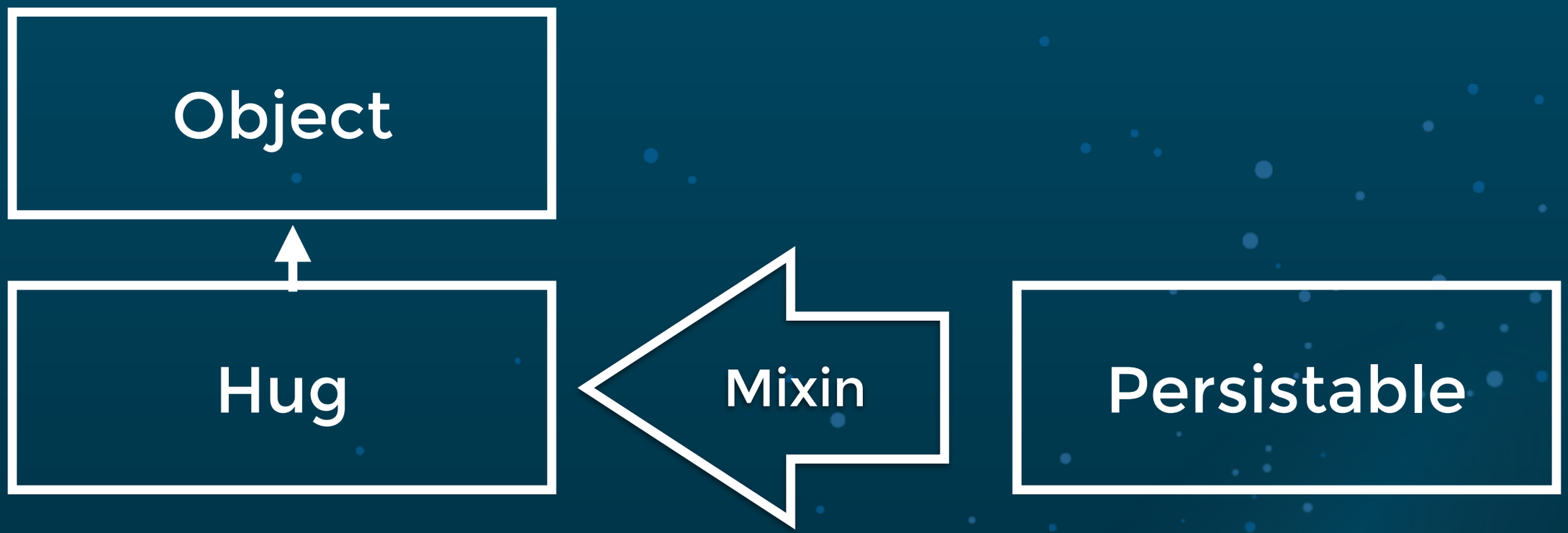
Don’t inherit, mixin!



Mixins

```
abstract class Persistable {
  save() { ... }
  load() { ... }
  toJson();
}

class Hug extends Object with Persistable {
  Map toJson() => {'strength':10};
}

main() {
  var embrace = new Hug();
  embrace.save();
}
```

Extend object & no constructors? You can be a mixin!

Apply the Mixin

Use Methods from the Mixin

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IT'S ON THE HOUSE AT THE PUB!

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pub

- A package manager
- Integrated right from the start
- 670+ packages

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Dart. Right now.

- dart2js compiles Dart to JavaScript
- at least until the DartVM is available within all platforms

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Ready to get started?

Write a Dart app!

(after a short break)

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Dart Codelab

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Codelab

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Dart Hackathon

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Dart Hackathon Winners

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Please fill out the evaluation form

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