



Sviluppare per il web con Dart

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Dart

- Language
- Libraries
- Tools
- Compilation to JavaScript

Dart is open source

- BSD-style license
- dart.googlecode.com
- GitHub mirror
- Contributing guide
- ECMA Standard (TC52)
- Production ready (1.11.1)





Compiles to JavaScript, runs across the modern web



Run Dart on the server with the Dart VM



Dart

- New language, familiar syntax
- Rich libraries
- Consistent semantics

`"Coffee".missing // ??`

Class 'String' has no instance getter 'missing'. NoSuchMethodError :

method not found: 'missing'

Receiver: "Coffee"

Arguments: []



`"2" > 1 // ??`

Unhandled exception:

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

NoSuchMethodError : method not found: '>'

Receiver: "2"

Arguments: [1]




```
class Hug {  
    int strength;  
    Hug(this.strength); // Terse syntax!  
  
    Hug.light() { // Named constructors!  
        this.strength = 0;  
    }  
  
    Hug operator +(Hug other) {  
        return new Hug(this.strength + other.strength);  
    }  
  
    void patBack({int hands: 1}) { /* Named or optional params, w/default values */  
  
        /* One-line functions, string interpolation! */  
        String toString() => "Embraceometer reads $strength";  
    }  
  
    main() {  
        Hug a = new Hug(5);  
        Hug b = new Hug.light();  
        print(a + b); // Embraceometer reads 5  
    }  
}
```

Built-in libraries

async
collection
convert
core
html
indexed_db
io
isolate

js
math
mirrors
svg
typed_data
web_audio
web_gl
web_sql



Kansas City Public Library

```
import 'dart:html';
```

```
InputElement todoInput;
```

```
UListElement todoList;
```

```
• void main() {  
    todoInput = querySelector('#to-do-input');  
    todoList = querySelector('#to-do-list');  
    todoInput.onChange.listen(addToDoItem);  
}
```

```
• void addToDoItem(Event e) {  
    var newToDo = new LIElement();  
    newToDo.text = todoInput.value;  
    todoInput.value = '';  
    todoList.children.add(newToDo);  
}
```

```
import 'dart:io';
```

```
main() {  
  HttpServer.bind('0.0.0.0', 8080).then((server) {  
    server.listen((HttpRequest req) {  
      // Handle $req  
    });  
  });  
}
```

```
• main() {  
    String name = 'John Doe';  
    print(initials(name)); // J.D.  
}  
  
• String initials(String name) {  
    StringBuffer retValue = new StringBuffer();  
    name.split(" ").forEach((String part) {  
        retValue.write(part[0] + ".");  
    });  
    return retValue.toString();  
}
```

```
• main() {  
    var name = 'John Doe';  
    print(initials(name)); // J.D.  
}  
  
• initials(name) {  
    var retValue = new StringBuffer();  
    name.split(" ").forEach((part) {  
        retValue.write(part[0] + ".");  
    });  
    return retValue.toString();  
}
```


Asynchronous and concurrent programming

- Futures
- Streams
- Isolates



<https://www.flickr.com/photos/huskyte/8519749145/in/photostream/>

```
import 'dart:async' show Future, Completer;

main() {
  loadNews().then((news) {
    // Do something with $news
  });
  print("Immediately printed!");
}

Future loadNews() {
  var completer = new Completer();
  // Insert very slow process here
  completer.complete(/* return value */);
  return completer.future;
}
```



```
import 'dart:async';

main() {
  var data = [1,2,3,4,5]; // some sample data
  var stream = new Stream.fromIterable(data); // create the stream

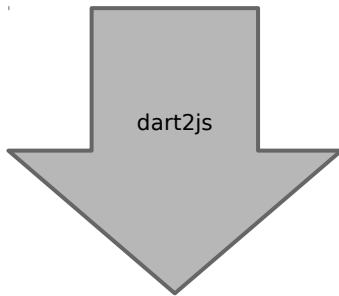
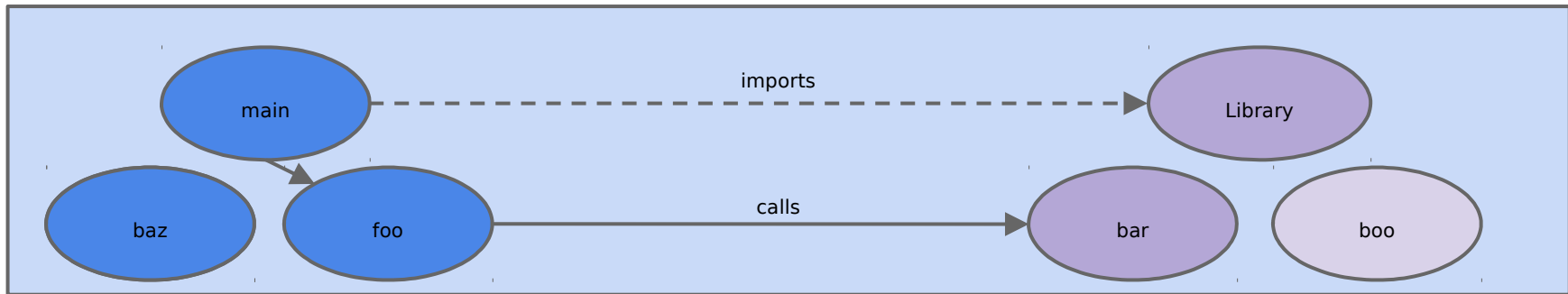
  // subscribe to the streams events
  stream.listen((value) { //
    print("Received: $value"); // onData handler
  }); //
}
```

Dart-to-JS Compiler & Performance

Dart2js' s features:

- Minification & Source Maps
- Global type inference
- Tree-shaking
 - Compile-time dead code elimination

Tree shaking



Tracking [Dart VM](#) and [dart2js](#) performance.

<https://dartlang.org/performance>

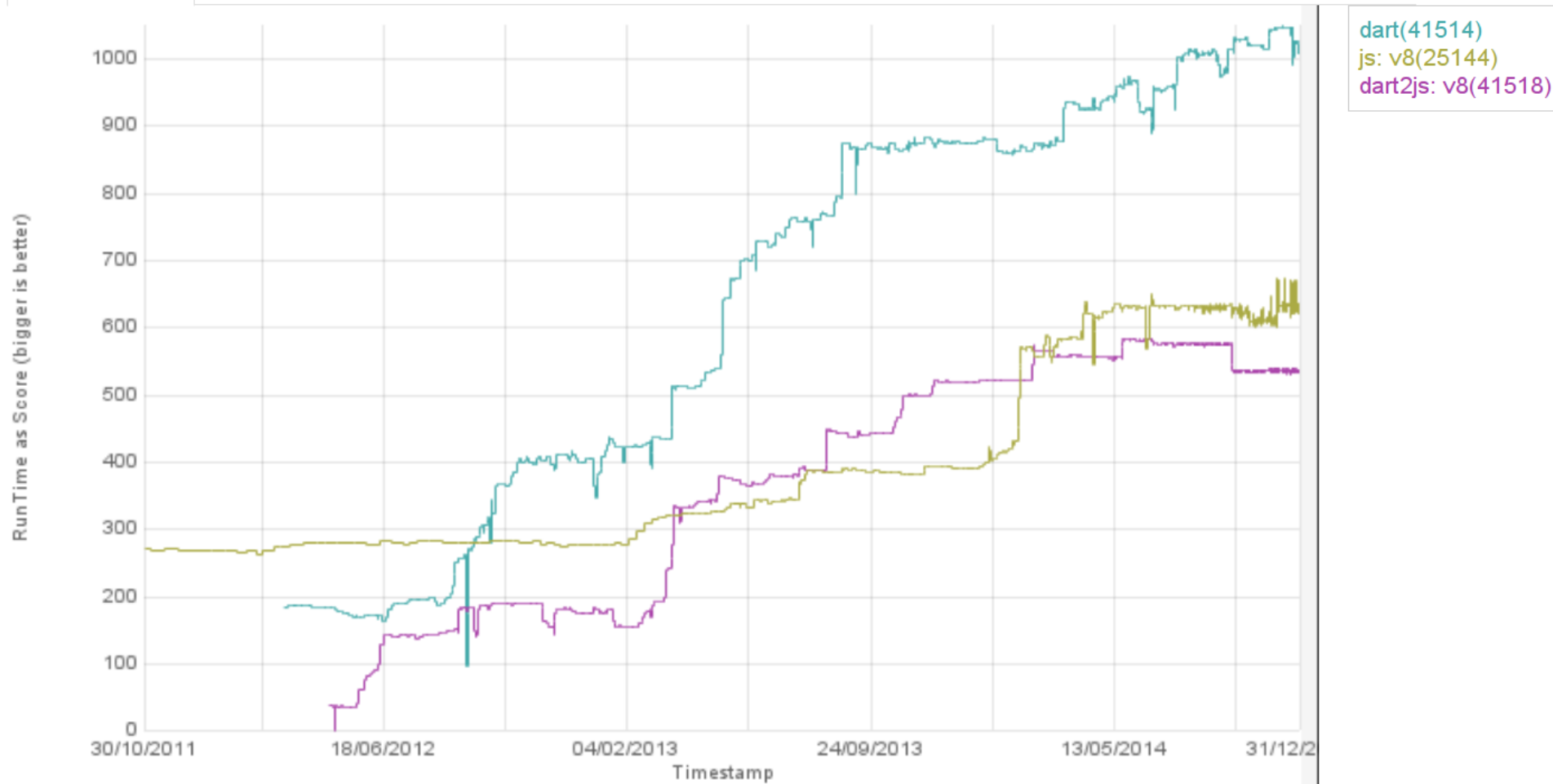
DeltaBlue

FluidMotion

Havlak

Richards

Tracer



Language, Libraries & Tools

- Package Manager: ***pub***
- JS compiler: ***dart2js***
- Library documentation generator: ***docgen***
- Static analyzer: ***dartanalyzer***
- Chromium with Dart VM: ***Dartium***

Polymer.dart



AngularDart





Dart

Homepage: <https://dartlang.org>

API Reference: <https://api.dartlang.org>

Pub Packages: <https://pub.dartlang.org>

AngularDart: <https://angulardart.org>

Polymer.dart: <https://dartlang.org/polymer-dart>



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