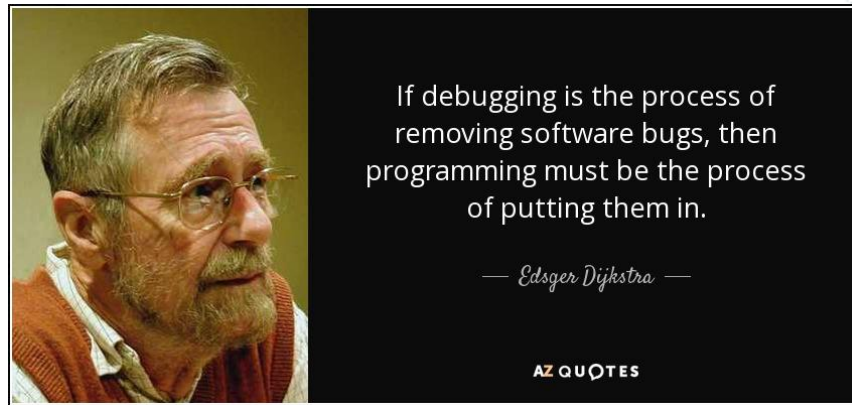


Unit Test
Integration Test
E2E Test



Test



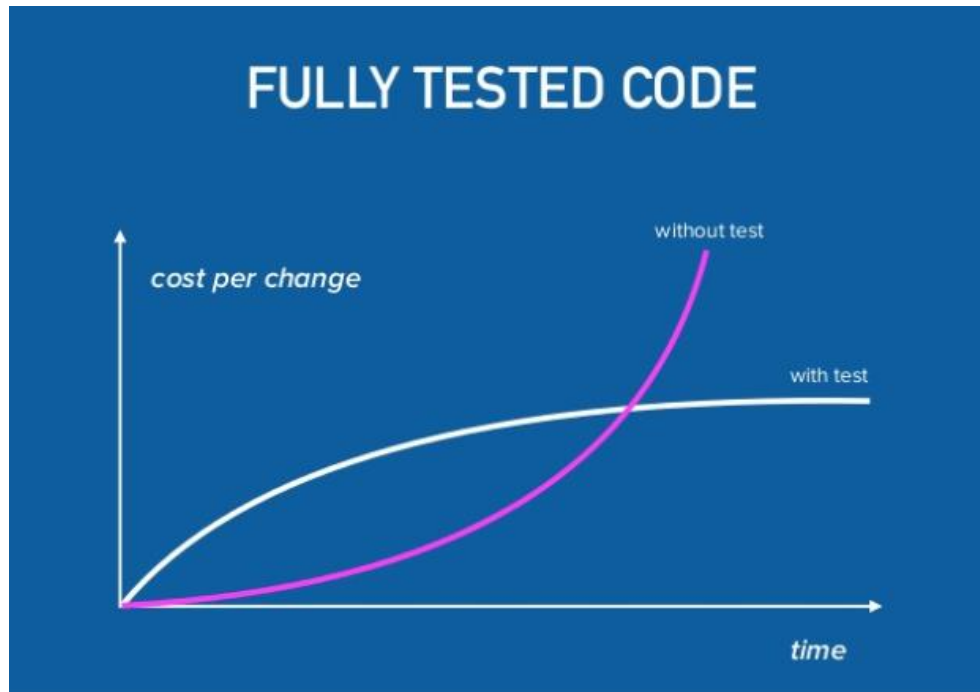
Il test di un programma può essere usato per mostrare la presenza di bug, ma mai per mostrare la loro assenza.

```
public class MyUnit {  
  
    public String concatenate(String one, String two){  
        return one + two;  
    }  
}
```

```
import org.junit.Test;  
import static org.junit.Assert.*;  
  
public class MyUnitTest {  
  
    @Test  
    public void testConcatenate() {  
        MyUnit myUnit = new MyUnit();  
  
        String result = myUnit.concatenate("one", "two");  
  
        assertEquals("onetwo", result);  
    }  
}
```

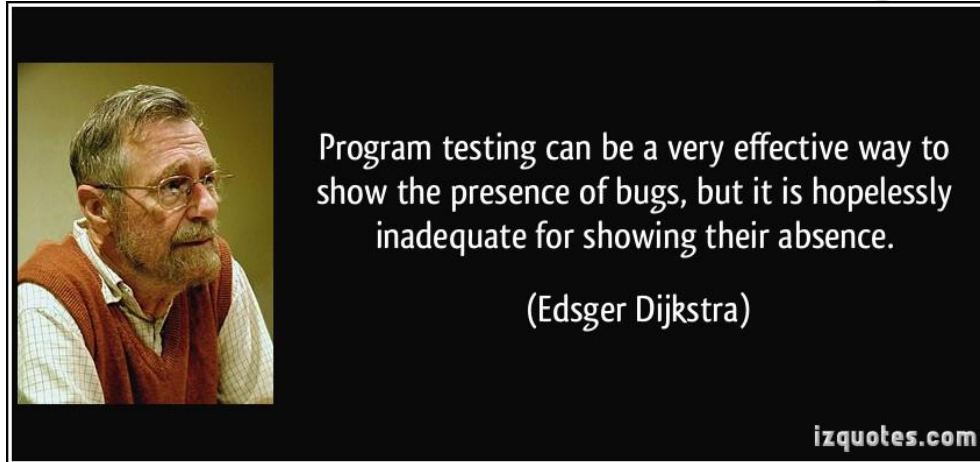
Test

- Facilitano la modifica
- Il test fallisce prima di rilasciare il software
- Meno sorprese
- Documentazione migliore



<https://www.slideshare.net/spleenteo/to-test-or-not-to-test-this-is-the-problem>

Test



Unit Test:

Test unitari e isolati: permettono di testare singole parti del codice in maniera isolata. Devono essere semplici e veloci.

Integration Test:

Test di integrazione di vari moduli software per capire se qualcosa va male durante il loro uso combinato.

E2E Test (End 2 End Test):

Test dove automaticamente eseguo attività utilizzando la stessa interfaccia «grafica» che utilizzerà l'utente finale.

Test

Aulos / Loccioni-Aulos-CSharp / Develop

#3477 (31 May 18 15:01) |

Overview Changes Tests Build Log Parameters Dependencies Artifacts NuGet Packages

Run Actions Edit Configuration Settings

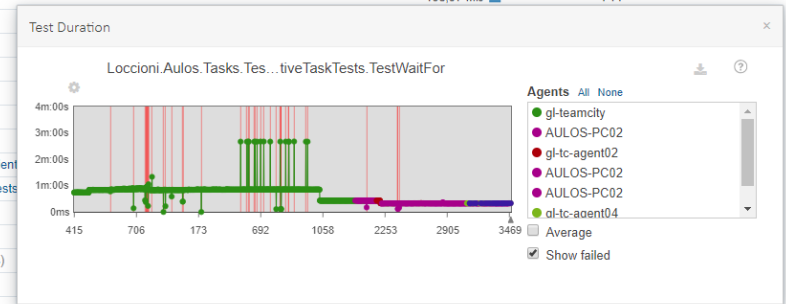
#3475 | All history | Last recorded build

Total test count: 1964 (4 ignored), total duration: 10m:06s

Download all tests in CSV Permalink

View: tests containing: with: any status Filter Show: 20 Items

Status	Test	Duration	Order#
OK	PreemptiveTaskTests.TestWaitFor	19s,974ms	744
OK	PreemptiveTaskTests.TestWaitingSharedTask		
OK	ProgramTest.ExecutionOfForProgramTest		
OK	PreemptiveTaskTests.TestWaitForPerformance		
OK	ProgramTest.ComplexityCheckTest		
OK	ProgramTest.TestProgramExecutionsToDontShareInstructions		
OK	PreemptiveTaskTests.TestCascadeWaitForTasks		
OK	ExecutionClientTest.ProgramExecutionEventsTest		
OK	ParameterMapperTest.TestSubParameterMappingToDTOWithOutForeachEnumeration		
OK	PreemptiveTaskTests.TestWaitForStartTasks		
OK	ConditionClockTest.ConstructorMultiShotTest		
OK	ExecutionClientTest.AbortExecutionsTest		
OK	ProgramTest.ExecutionOrWhileProgramTest		
OK	RoslynScriptExecutorTest.TestExecuteScript	5s,541ms	594
OK	AlarmsClientTest.AlarmNotificationsTest	5s,467ms	274
OK	PreemptiveTaskTests.TestWaitingSharedTaskWithInnerWaits	5s,248ms	762
OK	PreemptiveTaskTests.TestWaitingSharedTaskInDifferentThreads(True)	5s,165ms	760
OK	PreemptiveTaskTests.TestWaitingSharedTaskInDifferentThreads(False)	5s,165ms	761
OK	MachineStateMessagesClientTest.GetMachineStateMessagesTest	5s,008ms	406
OK	ReminderClientTest.GetRemindersTest	4s,712ms	414



1 2 3 4 5 6 7 8 9 ... 99

Test in Ionic

Esistono molti progetti «seed» che mostrano come integrare unit e e2e test:

<https://github.com/ionic-team/ionic-unit-testing-example>

Getting Started with this Project

To get started, clone this repo, and run `npm install` in the root directory.

```
git clone https://github.com/ionic-team/ionic-unit-testing-example.git
cd ionic-unit-testing-example
npm install
```

Then, you should run `ionic serve` to make sure the project loads.

Unit Tests

To run the tests, run `npm run test`.

See the example test in `src/app/app.component.spec.ts` for an example of a component test.

End-To-End Tests (Browser-Only)

To serve the app, run `ionic serve`.

To run the end-to-end tests, run (while the app is being served) `npm run e2e`.

See the example end-to-end test in `e2e/app.e2e-spec.ts`.

Test nel mondo mobile

Come posso testare la mia applicazione (web o mobile)
Su tutti i dispositivi?



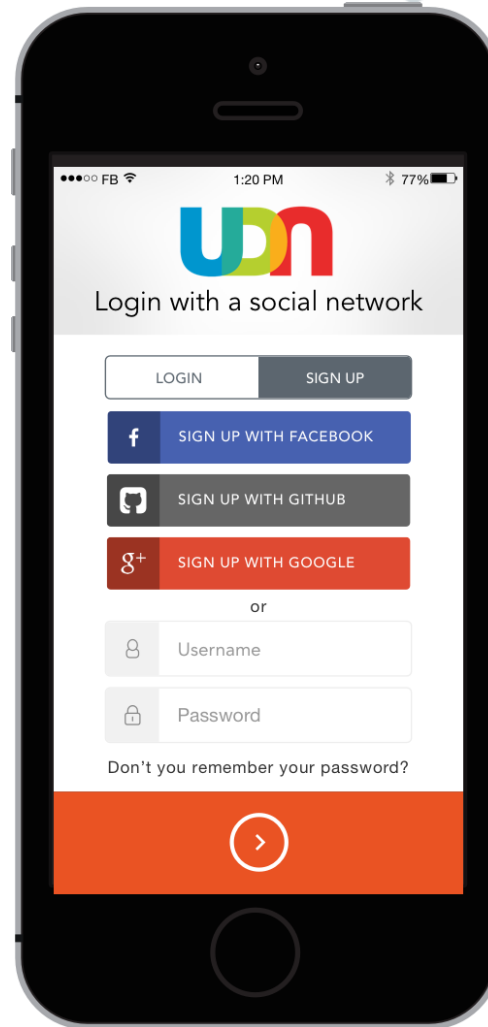
Mobile Services

(aggiungere rapidamente servizi alla propria app)

<https://market.ionicframework.com/>



Auth Service



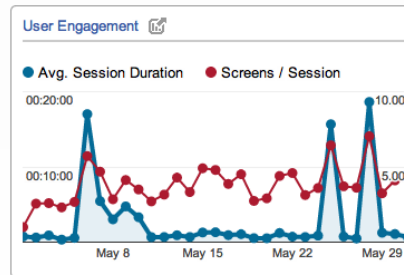
<https://auth0.com/blog/ionic-framework-how-to-get-started/>

<https://firebase.google.com/docs/auth/>

Analytics Service



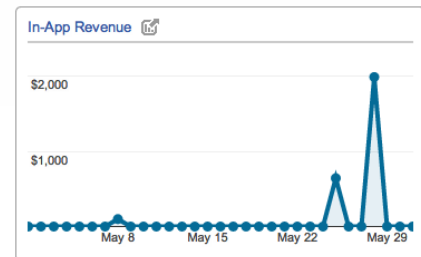
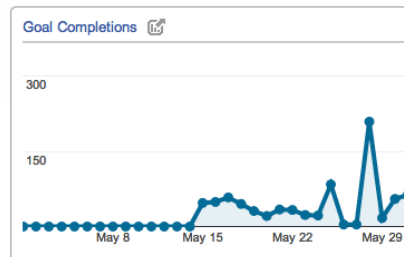
Engagement



Screens

Screen Name	Screen Views
AnalyticsMainActivity	17,669
Profile Picker	12,299
Line Chart Settings	3,259
Alert Viewer	3,222
Login	1,891

Outcomes



<https://ionicframework.com/docs/native/google-analytics/>

A/B Test Service

✓ A



VS.

✗ B



<https://github.com/optimizely/optimizely-cordova-plugin>

Signature

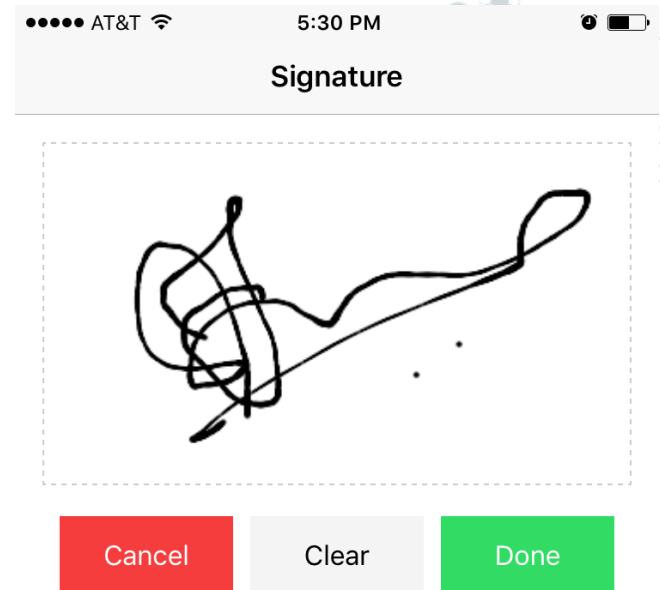
Componente standard Angular:

https://www.npmjs.com/package/signature_pad
<https://github.com/wulfsocket/angular2-signaturepad>

Basato su HTML5 Canvas

Integrato in Ionic 3:

<https://github.com/srinivastamada/ionic3-angular4-signaturepad>



Barcode / QR Code

<https://ionicframework.com/docs/native/barcode-scanner/>

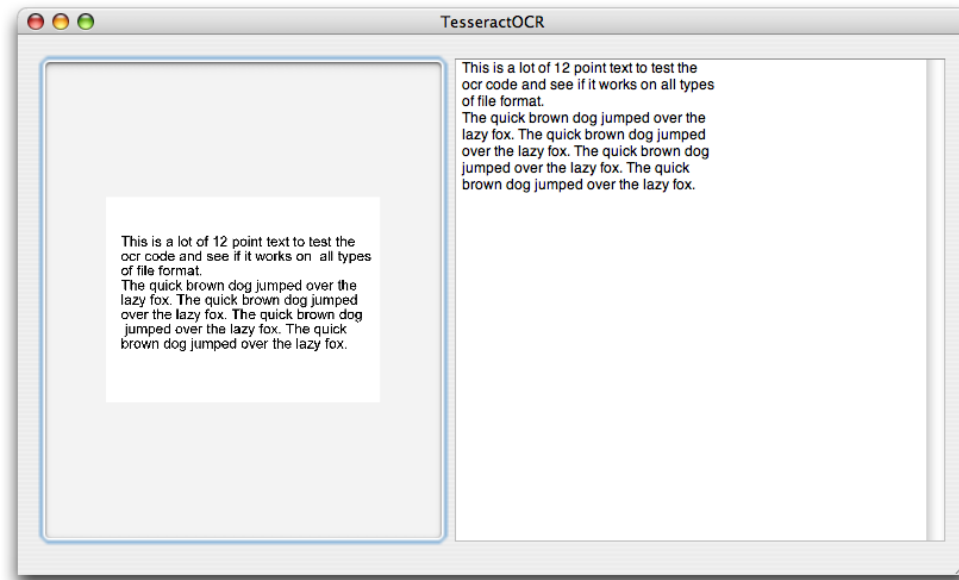
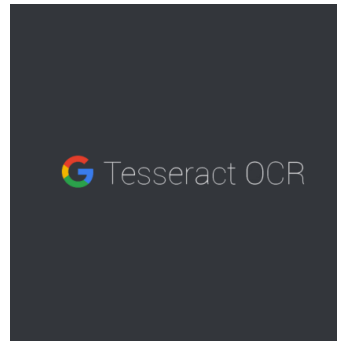
<https://www.scandit.com/>

<https://www.scandit.com/scandit-launches-matrixscan-a-first-of-its-kind>



pabilit

OCR



<https://github.com/gustavomazzoni/cordova-plugin-tesseract>
https://www.youtube.com/watch?v=NF_nnoA0aXM

AR

- **Marker Based Augmented Reality:** si utilizzano marker visuali e la camera per attivare la realtà aumentata. Da alcuni anni si possono utilizzare marker complessi come immagini.
- **Markerless Augmented Reality:** si utilizzano sensori come GPS, Bussola, Accelerometro per comprendere lo spazio
- **Projection Based Augmented Reality:** si proiettano informazioni su una superficie e in alcuni casi si interagisce con l'utente
- **Superimposition Based Augmented Reality:** l'immagine sintetica sostituisce o integra l'immagine reale



AR



SmartGlasses



MOVERIO BT-300 849,00 €	Panoramica	Specifiche tecniche	Accessori	Assistenza	Recensioni
Piattaforma Android					
Sistema operativo		Android 5.1			

<https://www.wikitude.com/products/eyewear/epson-augmented-reality-sdk/>

<https://www.vuforia.com/devices.html>

SmartGlasses

UP  SKILL

<https://www.youtube.com/watch?v=qTbIKJjTadQ>

Posizionamento Indoor

Trasmissione broadcast

- Beacon: trasmissione Bluetooth Low-Energy «del solo» UDDI
- Eddystone: trasmissione Bluetooth Low-Energy di UDDI e URL



Posizionamento Indoor

Fine Timing Measurement (FTM) protocol from [IEEE 802.11-2016](https://www.ieee.org/standards/publications-standard/802.11-2016).

The Wi-Fi Alliance's system functions when mobile devices and access points share data. Radio waves travel through the air at a predictable speed—the speed of light

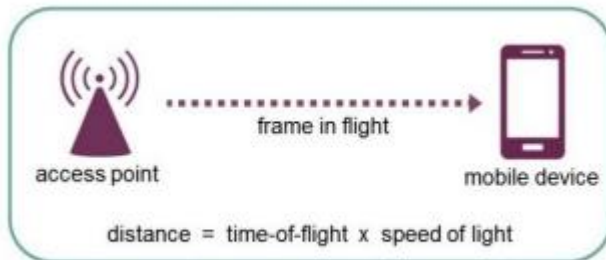


Figure 1. Basic transmission time calculation

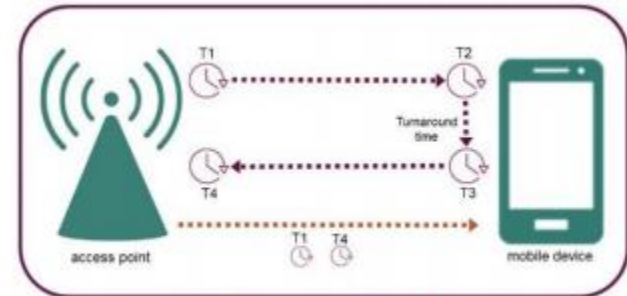


Figure 2. Round-trip timestamps synchronize to same clock

- Client can request an AP share its location (e.g. in latitude / longitude or as a civic address). The program is designed to cover situations whereby such information can be shared pre-association or post association (so an AP may have the ability to share its location to Clients that are not connected to that AP).

Animation



Lottie

Easily add high-quality animation to any native app.

Lottie is an iOS, Android, and React Native library that renders After Effects animations in real time, allowing apps to use animations as easily as they use static images.

<https://github.com/yannbf/ionic-lottie>

Game Engine

Si basano su due tecnologie:

Canvas: una estensione dell'HTML standard che permette il rendering dinamico di immagini bitmap gestibili attraverso un linguaggio di scripting.

WebGL: abilita l'utilizzo delle librerie OpenGL all'interno di un Canvas

<http://madebyevan.com/webgl-water/>

<http://www.larsberg.net/#/hexanemone>

Game Engine



<http://phaser.io/examples/v2/animation/group-creation>

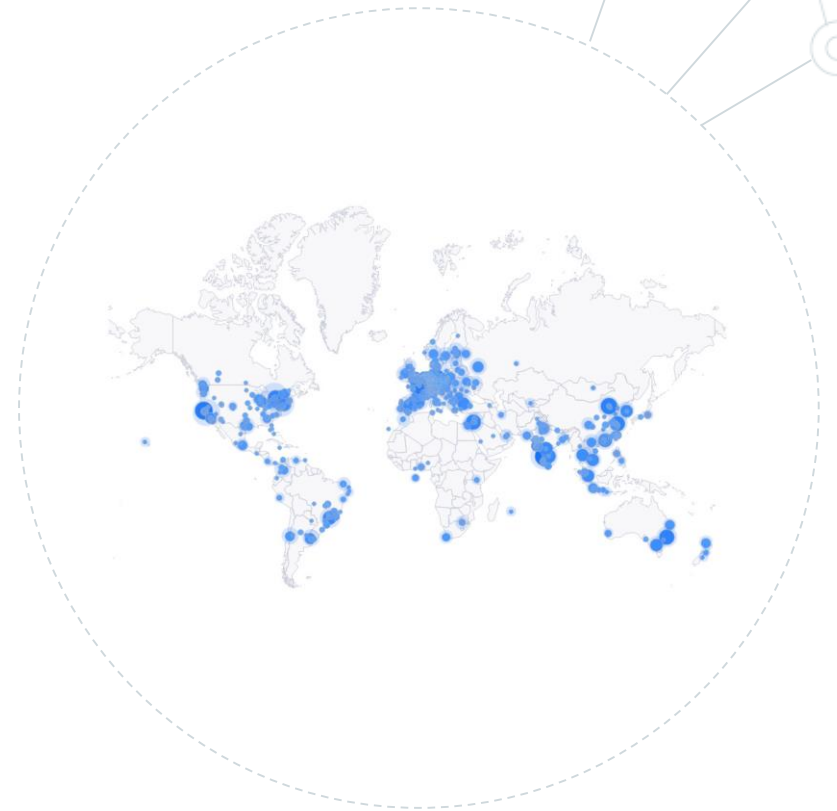
<http://phaser.io/examples/v2/box2d/car-on-terrain>

<https://github.com/photonstorm/phaser-ce/tree/master/resources/Project%20Templates/ionic-example>

Ionic Survey

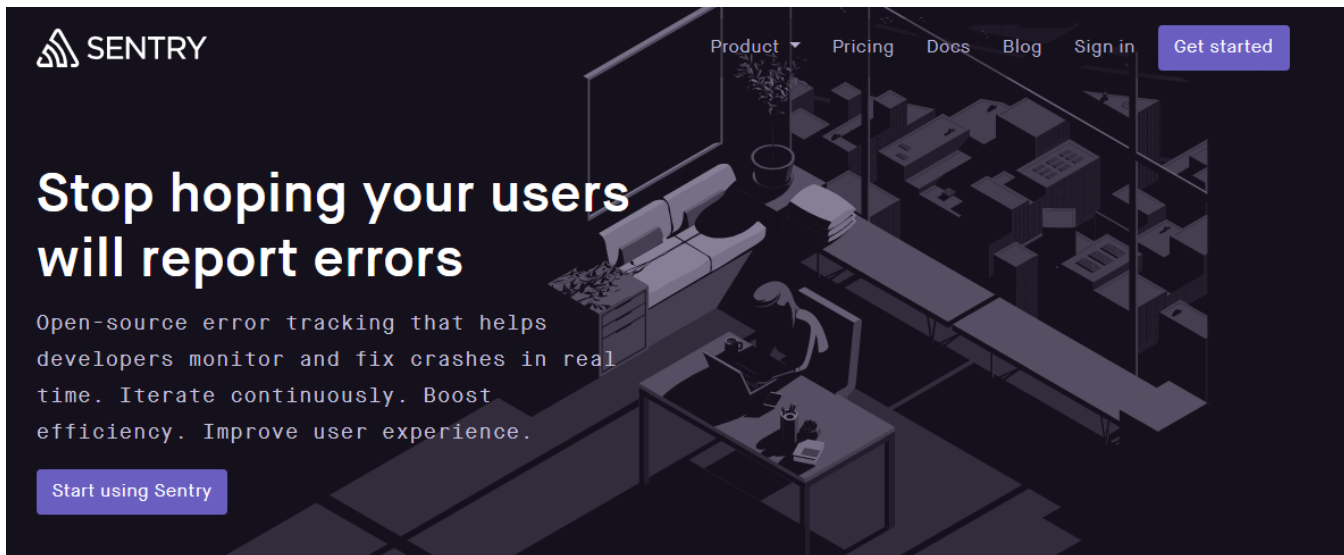
Impariamo dalla community

<https://ionicframework.com/survey/2017#>



Logger / Crash Service

La mia applicazione è installata su 10 mila device. Sono sicuro che tutto funzioni come avevo previsto?







SENTRY

Product Pricing Docs Blog Sign in [Get started](#)


Stop hoping your users will report errors

Open-source error tracking that helps developers monitor and fix crashes in real time. Iterate continuously. Boost efficiency. Improve user experience.

[Start using Sentry](#)

 <p>Crashlytics ★★★★★ (63) GET A QUOTE <input type="checkbox"/> Compare</p>	 <p>Instabug ★★★★★ (40) TRY FOR FREE <input type="checkbox"/> Compare</p>	 <p>Bugsee ★★★★★ (12) GET A QUOTE <input type="checkbox"/> Compare</p>	 <p>Sentry ★★★★★ (23) GET A QUOTE <input type="checkbox"/> Compare</p>
--	--	---	---

Logger / Crash Service



Captain Planet / Heart ⌵

ISSUES
EVENTS
OVERVIEW
USER FEEDBACK
RELEASES

★ Star
📶 Subscribe
⚙️ Settings

Unresolved Issues ⌵

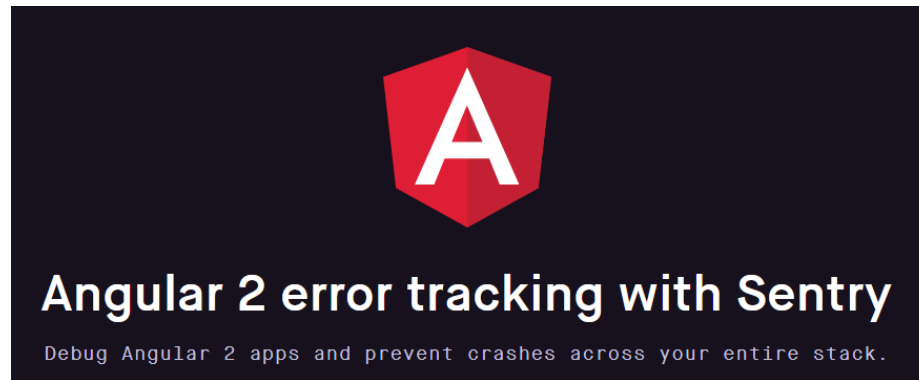
Sort by: Last Seen ⌵

🔍 is:unresolved ⌵

⌵

	GRAPH:	EVENTS	USERS
<div style="display: flex; justify-content: space-between; align-items: center;"> ☐ ✓ ★ ⋮ ▶ </div> <div style="margin-top: 5px;"> <p>Error TypeError poll(.../sentry/scripts/views.js)</p> <p>☐ Object [object Object] has no method 'updateFrom'</p> <p>HEART-1D 🕒 6 days ago — 4 months old 🗨️ 1</p> </div>	24H	14D	26
<div style="display: flex; justify-content: space-between; align-items: center;"> ☐ ★ </div> <div style="margin-top: 5px;"> <p>Error ★ javax.servlet.ServletException org.hsqldb.jdbc.Util in throwError</p> <p>☐ Something bad happened</p> <p>HEART-1G 🕒 6 days ago — 4 months old</p> </div>			26
<div style="margin-top: 5px;"> <p>Error script-src example.com</p> <p>☐ Blocked 'script' from 'example.com'</p> <p>HEART-1K 🕒 6 days ago — 4 months old</p> </div>			26
<div style="margin-top: 5px;"> <p>Error ZeroDivisionError bin/raven in <main></p> <p>☐ divided by 0</p> <p>HEART-1H 🕒 6 days ago — 4 months old</p> </div>			26

Sentry per web e ionic



<https://sentry.io/organizations/humancare/issues/1259950838/?project=1536259&query=is%3Aunresolved>

<https://sentry.io/for/angular2/>

<https://docs.sentry.io/platforms/javascript/ionic/>