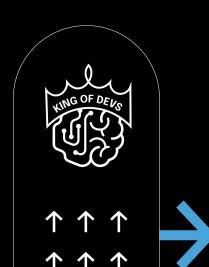
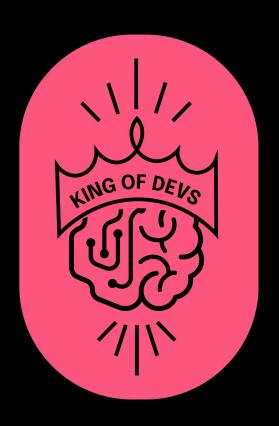
think & dev

## KING OF DEVS

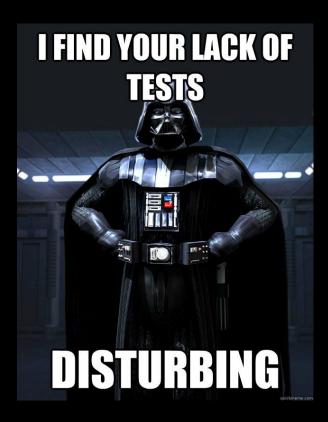




## WORKSHOP DAY 2

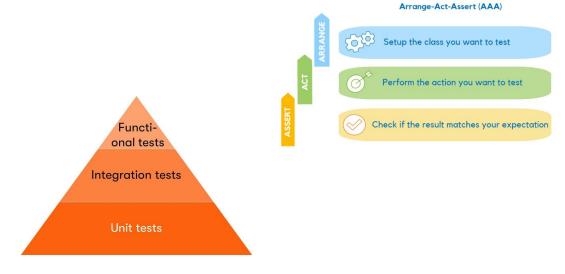
TEST, TEST AND





### LA IMPORTANCIA DE TESTEAR

- Detección temprana de bugs, ergo arreglos más simples
- Unit tests => Mantenimiento más seguro y simplificado
- Confianza en que el código hace lo que se espera. (Y en que no hace lo que se espera que no haga)
- Auto-documentación



### Gas estimation

- NPM: <a href="https://www.npmjs.com/package/hardhat-gas-reporter">https://www.npmjs.com/package/hardhat-gas-reporter</a>
- Repo: <a href="https://github.com/cgewecke/hardhat-gas-reporter">https://github.com/cgewecke/hardhat-gas-reporter</a>
- Se ejecuta automáticamente cuando corran los tests (npx hardhat test)

 I	Solc version: 0.8.9		Optimizer enabled: true		Runs: 200	Block limit: 30000000 gas	
:. 	Methods				 		
ï	Contract	Method	Min	Max	Avg	# calls	usd (avg)
ï	OzStoppablePattern	withdraw	_	_	33820	7	-
Ï	Deployments					% of limit	
Ï	Constant		_	_	86501	0.3 %	-
İ	Immutable		_	_	90857	0.3 %	_
1	NoConstants		-	-	109202	0.4 %	-
 الم	dev think & dev thin	nk & dev thinl	& dev think &	dev think & de	ev think & dev	think & dev tl	hink & dev thin

Contract Name	Size (KiB)	 · Change (KiB)
Constant	0.149	
Immutable	0.161	
List	1.011	ı
LockV4	0.483	i
LockV5	0.605	
LockV6	0.656	
LockV7	0.489	
LockV8	0.471	
NoConstants	0.142	
OzStoppablePattern	0.525	
StoppablePattern	0.420	 

### **CONTRACT SIZER**

Este plugin permite obtener el tamaño de los contracts a deployar con hardhat.

- NPM: https://www.npmjs.com/package/hardhat-contract-sizer
- Repo: <u>https://qithub.com/ltsNickBarry/hardhat-contrac</u> t-sizer

### Como ejecutarlo?

npx hardhat size-contracts
--no-compile

**Tip:** Creense un script en el package.json, para correrlo más fácil

File	% Stmts	   % Branch	% Funcs	% Lines	  Uncovered Lines   
development/	8.7	0	16.67	7.69	
OzStoppable.sol	0	100	0	0	18
constants.sol	100	100	100	100	
list.sol	0	100	0	0	57,58,60,61
stoppablePattern.sol	0	0	0	0	20,24,25,29
evolution/	18.42	18.75	16.67	18.42	
v4.sol	0	0	0	0	18,19,21,23
v5.sol	0	0	0	0	21,22,24,26
v6.sol	0	0	0	0	38,39,41,43
v7.sol	0	0	0	0	28,29,31,33
v8.sol	100	100	100	100	
All files	14.75	15	16.67	14.06	

```
24
              owner = msg.sender;
25
26
27
          function withdraw() public {
28
              require(block.timestamp >= unlockTime, "You can't withdraw yet");
29
              require(msg.sender == owner, "You aren't the owner");
30
31
              emit Withdrawal(address(this).balance, block.timestamp);
32
33
              owner.transfer(address(this).balance);
34
35
```

### TEST COVERAGE

Nos permite generar un informe del test coverage actual. El informe se puede ver desde la misma consola, o incluso se puede generar un informe HTML.

- NPM: https://www.npmjs.com/package/ solidity-coverage
- Repo: <u>https://github.com/sc-forks/solidit</u> <u>y-coverage</u>

### Como ejecutarlo?

npx hardhat coverage
[command-options]





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