

# Assignment 1 & 3

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**Decentralized Systems 2024/25**

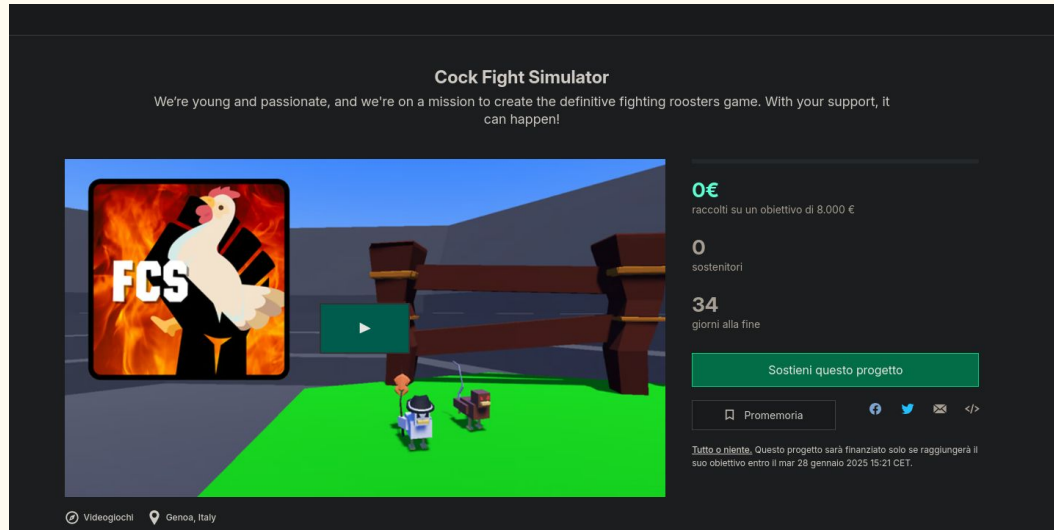
Made by Lorenzo Foschi & Kevin Cattaneo



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# Topic choice

- Crowdfunding platform: let users fund your idea!
- Based on a real fund idea: **Cock Fighting Simulator**, our videogame.



From Kickstarter

# Functionalities

- **Buy tokens:** let users fund our idea by spending Sepolia ETH in exchange of our (**CFT**) ERC-20 tokens.
- **Finalize the crowdfunding:** let the owner finalize the funding after the deadline set, letting owner also withdraw the funding if that has reached the soft cap.
- **Claim refund:** if funding has not reached the soft cap and has been finalized, users can be refunded of their money spent


# Extra functionalities

- **Refund the extra:** since we have a token price, if the user spend more than the price times the amount of tokens
- **Early cockers:** we mark a starter period to let users have more tokens with less contribution (we thanks our earlier contributors).
- **Pause:** we allow the pause of the contract by the owner if emergency.
- **Leaderboard:** we trace a leaderboard of the best 5 contributors.
- **Proxy** (tentative): built a read-only proxy to allow the pointing to a new, better, contract.

# Security analysis

- **Remix analysers:** no vulnerability found
  - Remix: warnings on block timestamps → used just for set deadline
  - Solhint: just formatting suggestions of our error messages
  - SolidityAnalyzer (BETA) top 5:
    - INCORRECT ACCESS CONTROL → false positive, we used Ownable.sol
    - PRECISION LOSS DURING DIVISION BY LARGE NUMBERS → maybe regarding the token computation, we may lose some very little decimals
    - USE OWNABLE2STEP: to avoid owner errors when transferring ownership
    - MISSING EVENTS: false positive, we put the right ones
    - OUTDATED COMPILER VERSION: false positive
- **Mythril**

```
~/Desktop/ETHgameToken/contracts (main) » time myth a CockfundingToken_flattened.sol  
The analysis was completed successfully. No issues were detected.  
  
myth a CockfundingToken_flattened.sol 3608,88s user 6,71s system 98% cpu 1:01:06,34 total
```



# Check out the trailer!



[https://video.fastly.steamstatic.com/store\\_trailers/257070501/movie480\\_vp9.webm?t=1731699781](https://video.fastly.steamstatic.com/store_trailers/257070501/movie480_vp9.webm?t=1731699781)