

# Software engineering project: Decentralized Among Us

## Presentation of goals

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- ① Project description
- ② Language and libraries
- ③ Objectives
- ④ Tasks
- ⑤ Division of the work
- ⑥ Objectives for early November

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- 2 Language and libraries
- 3 Objectives
- 4 Tasks
- 5 Division of the work
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# Goals

- A decentralized version of "Among Us"
- No server to store the game state
- Anti-cheat system with cryptography and homomorphic encryption

# Game principle

- A number of tasks (minigames)
- Some must be solved to win
- But: bad guy
- Kills when he is alone
- Goal: complete all tasks and find the impostors (for non-impostors), eliminate all non-impostors (for impostors)

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- Programming language: C++
- Graphics: Qt
- Cryptography: openSSL or others (HELib?)
- Static analyzer:

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- Display a map with characters
- Allow characters to move
- Anti-cheat systems
- Implement tasks

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- Fix wiring: click on wires with matching colors
- Swipe card: swipe card from wallet to draw frame
- Enter ID code: swipe ID card to see code, then type it
- Insert keys: self-descriptive
- Scan boarding pass: drag and wait until it becomes green

- Clean vent: tap or click on waste
- Upload data: move first place 8.7s, move second place 8.7s, play warm cold
- Submit scan: wait 10 seconds to prove innocence (maybe not do)
- Make a burger: click to see and hide order, make a burger with 5 ingredients
- Divert power: turn the power on, tap to complete the task in another given location

- Garbage: pull and hold lever until no garbage is left, then pull another lever
- Unlock manifolds: click on the 10 numbers in ascending order
- Unlock safe: enter 3 numbers, rotate 3 times
- Fix weather node: solve 6 mazes at different locations
- Start reactor: replicate pattern of up to 5 squares
- Clean asteroids: click on 20 asteroids

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To begin with (we will adapt this afterwards if needed):

- Paul deals with the cryptography.
- Benjamin and Victor work on the core game.
- Baptiste creates the tasks.

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- 6 tasks
- The core game
- No guarantee about the anti-cheat systems