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FIRST DAY AT OODRIVE

FRANCE - BELGIUM - GERMANY - HONG KONG - SPAIN - SWITZERLAND - BRAZIL

oodrive
LEADING BY TRUST

DAY'S PLAN

09:00	INTRODUCTION
10:00	WORKING
13:00	LUNCH BREAK
14:00	WORKING
15:30	PRESENTATIONS
16:00	FEEDBACKS

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INTRODUCTION

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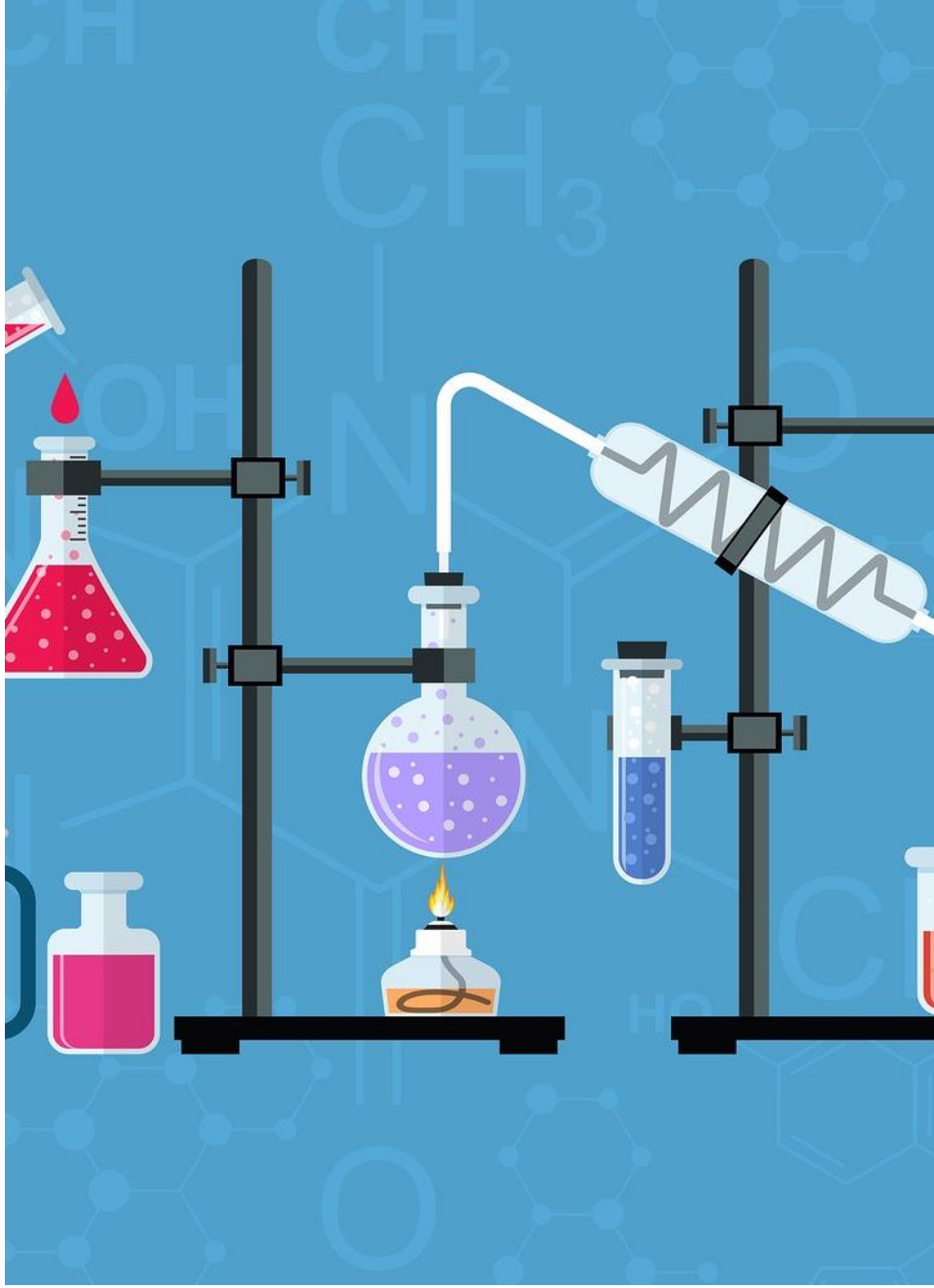
Shaman

Louis LIN
Lead dev

EXPERIMENT

First POEI with Oodrive

- Oodrive's involvement
  - Today !
  - Participation to your end project presentation
- Test Learn and Win



OBJECTIVES OF THE DAY

What are we expecting today?

Real-life situations

- Projects close to what we have at Oodrive
- Small teams working together for a common goal

First look as a developer

- Meet the developer in you

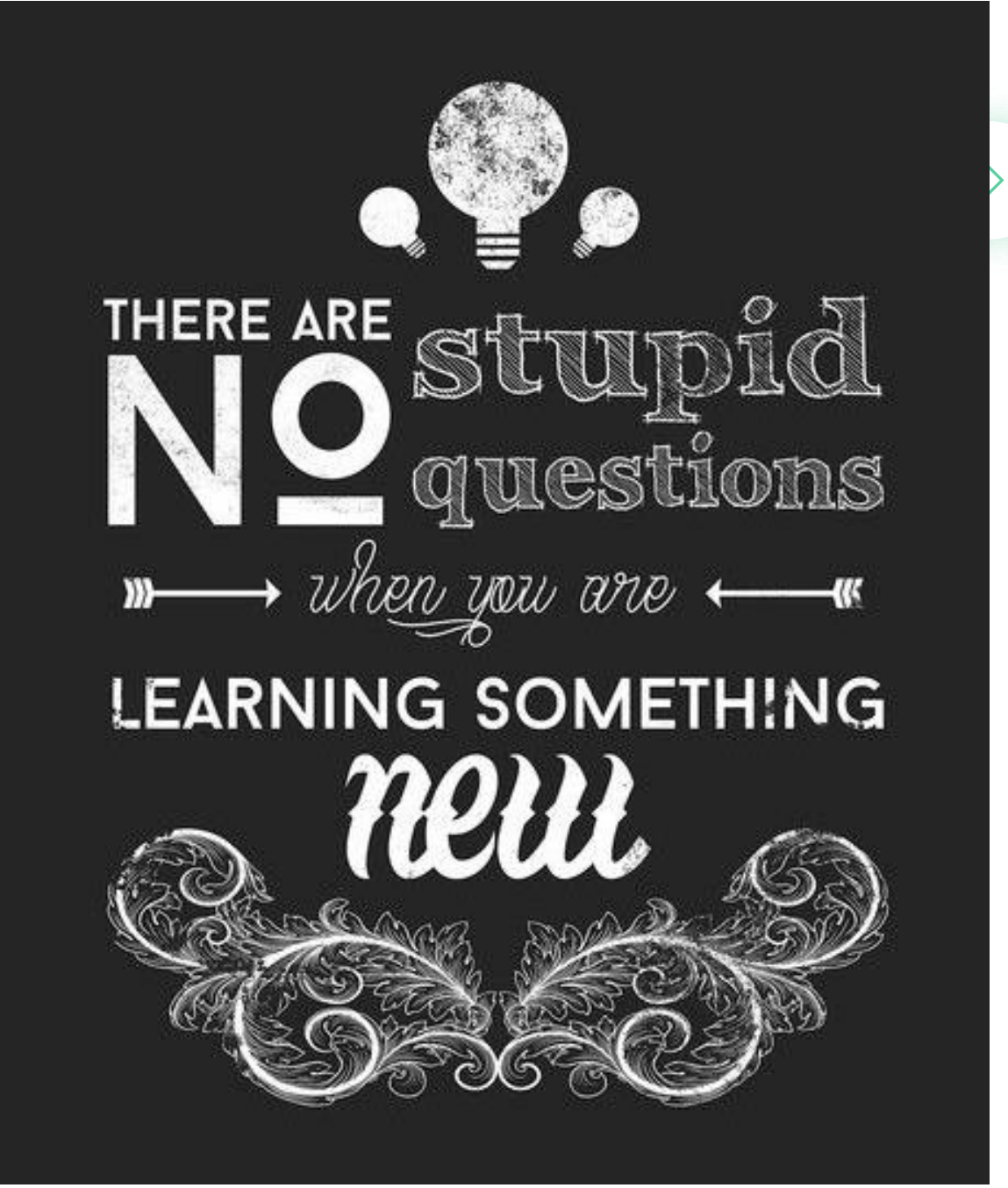
Share Oodrive's culture

- Knowledge sharing
- Helping people

FULL DISCLOSURE

Today's evaluation

- First look at your developer's side
  - How do you work as a team?
  - How do you tackle problems?
- Not final evaluation to join Oodrive



MINDSET

- Ask questions!

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- Projects are HARD on purpose
  - They are not meant to be finished

MINDSET

- Ask questions!
- Projects are HARD on purpose
  - They are not meant to be finished
- No competition!
  - Work as a team
  - Share your knowledge
  - Communicate your ideas
  - Different project for each team

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PROJECTS

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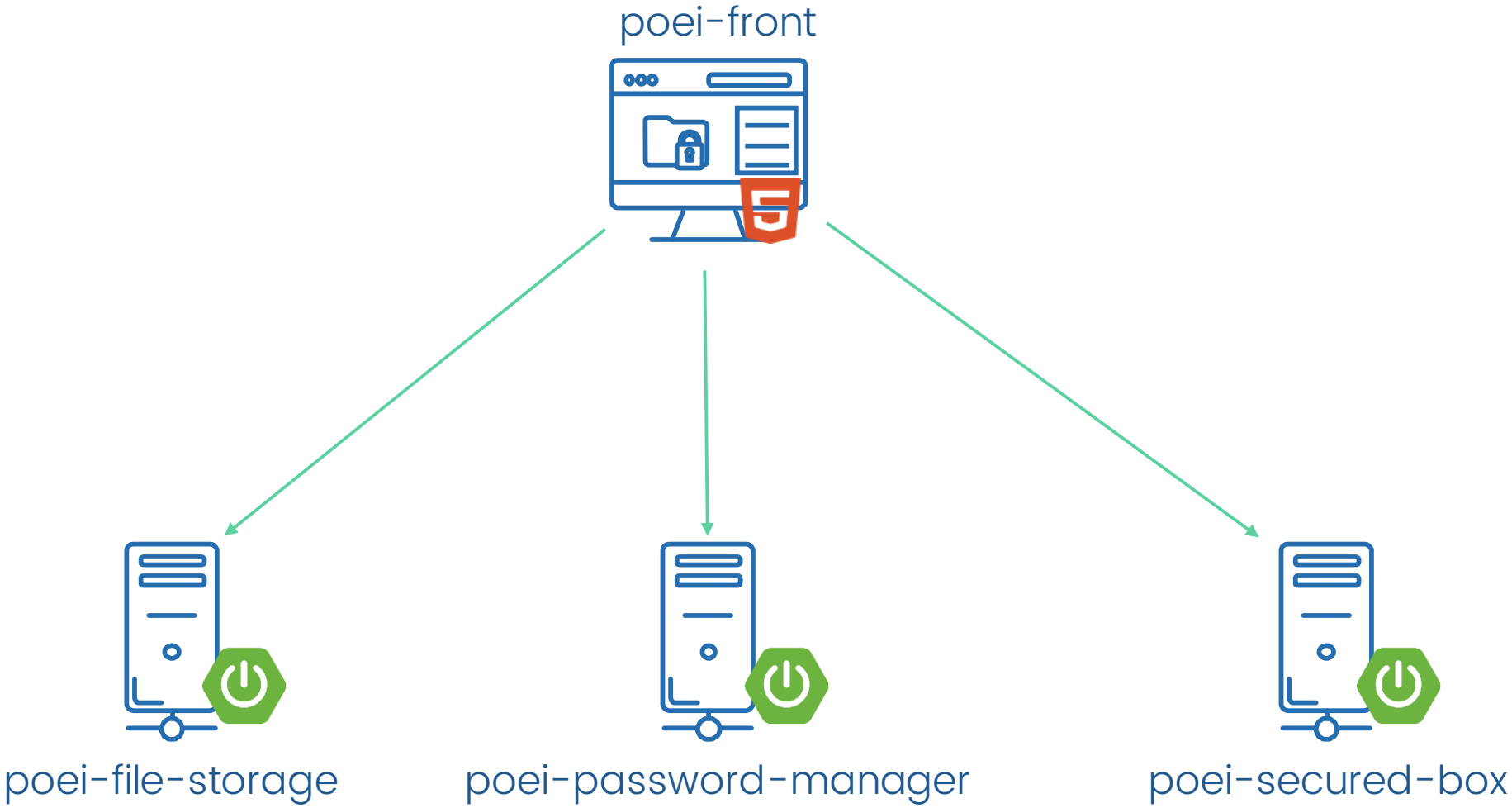
POEI-DASHBOARD



POEI-DASHBOARD

Oodrive

Sample service

Ping

Ping

Greeting

My name is name

Say HI

Group 1

File storage

Upload

Choose file Browse

Upload

Download

Download

Group 2

Password service

Generate random password

Length 8

Options Use characters
Use digits

Generate

Compute password score

Password

Score

Group 3

Secured box

Create secret

Key Value Password

Create

Get secret

Key Password

Get

POEI-FILE-STORAGE

Store files securely

Google drive

Dropbox

OneDrive

PostFiles

POEI-FILE-STORAGE

Store files securely

Upload

- Upload files to the server
- Save file contents to server file sytem
- Save file metadata in database

Download

- Fetch file metada
- Download file

Encrypt

- Encrypt all file contents on upload
- Decrypt file contents on download

POEI-PASSWORD-MANAGER

Generate random passwords & score passwords

';--have i been pwned?

Keepass

E2EE

Heimdall

POEI-PASSWORD-MANAGER

Generate random passwords & score passwords

Generate

- Generate random password
- Customized password generation

Score

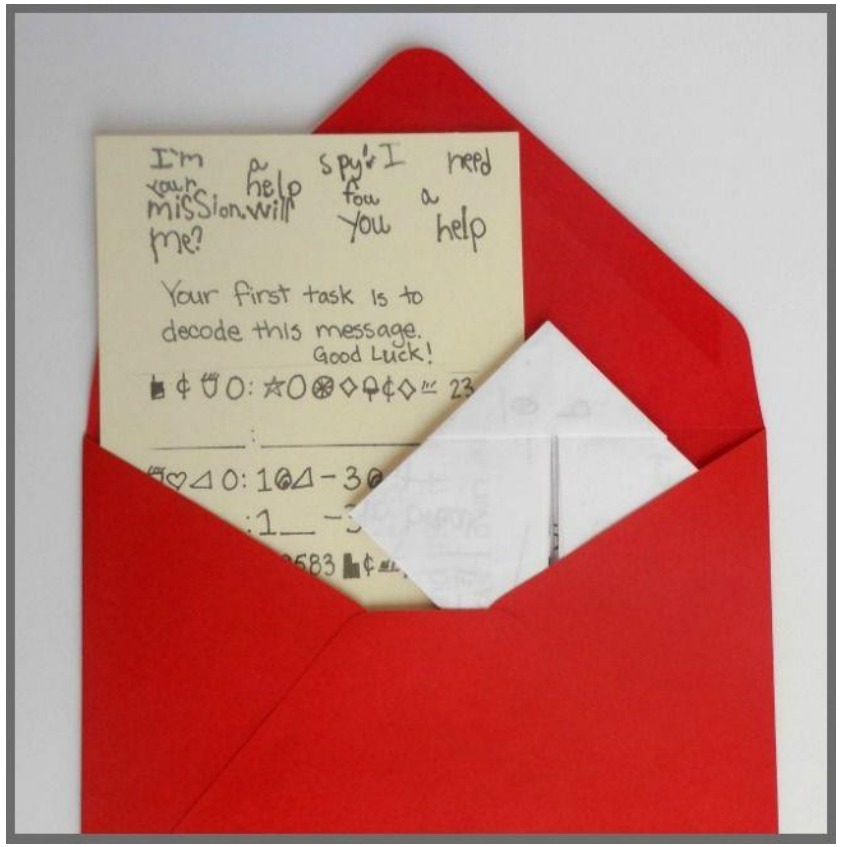
- Compute password score
- Save passwords in database

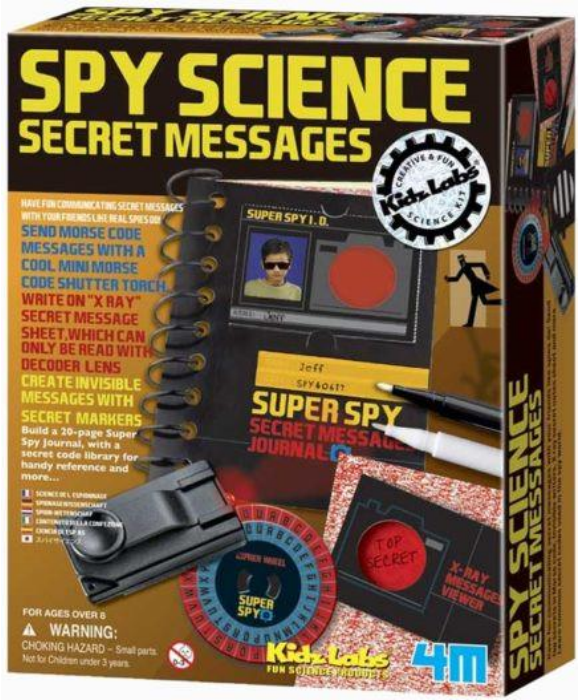
Hash

- Use password's hashes instead

POEI-SECURED-BOX

Store messages securely





POEI-SECURED-BOX

Store messages securely

Store

- Store messages mapped to a key with a password
- Save messages in the database

Fetch

- Fetch message from a given key

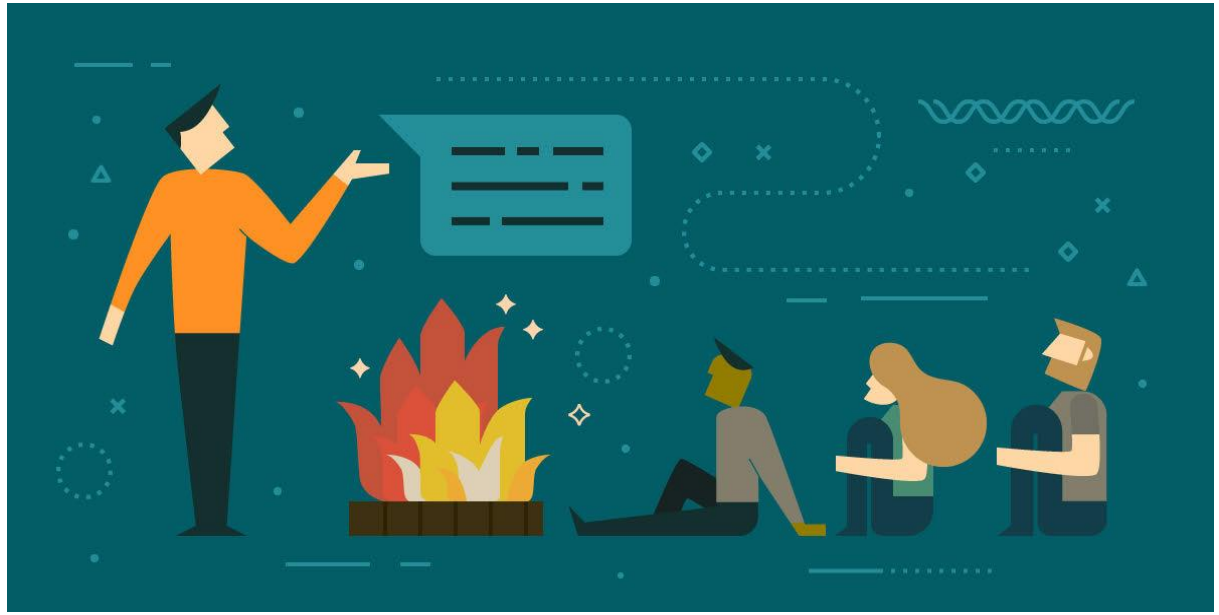
Encrypt

- Encrypt all messages using the given password
- Decrypt messages when fetching from a key

WHAT ARE WE EXPECTING FROM YOU

Projects development

5-10 minutes presentation




Before you
start

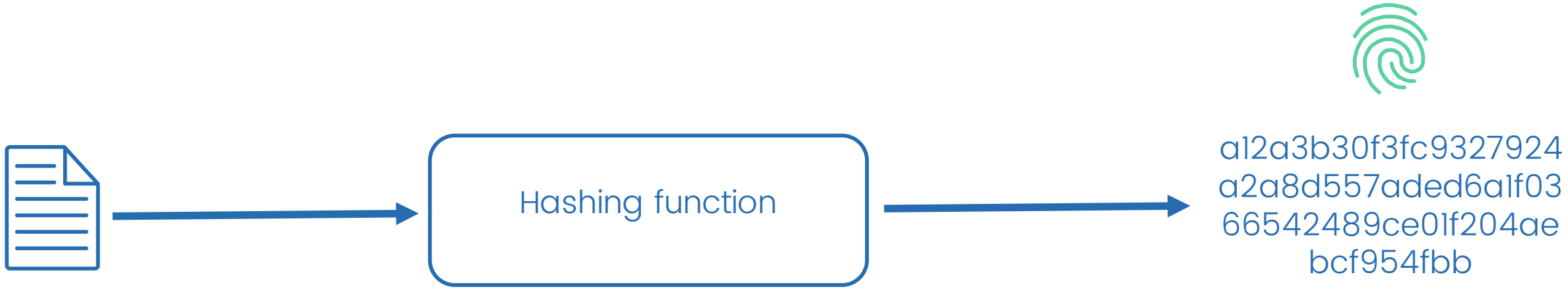
CRYPTOGRAPHY ESSENTIALS

Bring security based on cryptography to applications

Hashing

Symmetric encryption

HASHING


Hashing function
a12a3b30f3fc9327924
a2a8d557aded6a1f03
66542489ce01f204ae
bcf954fbb

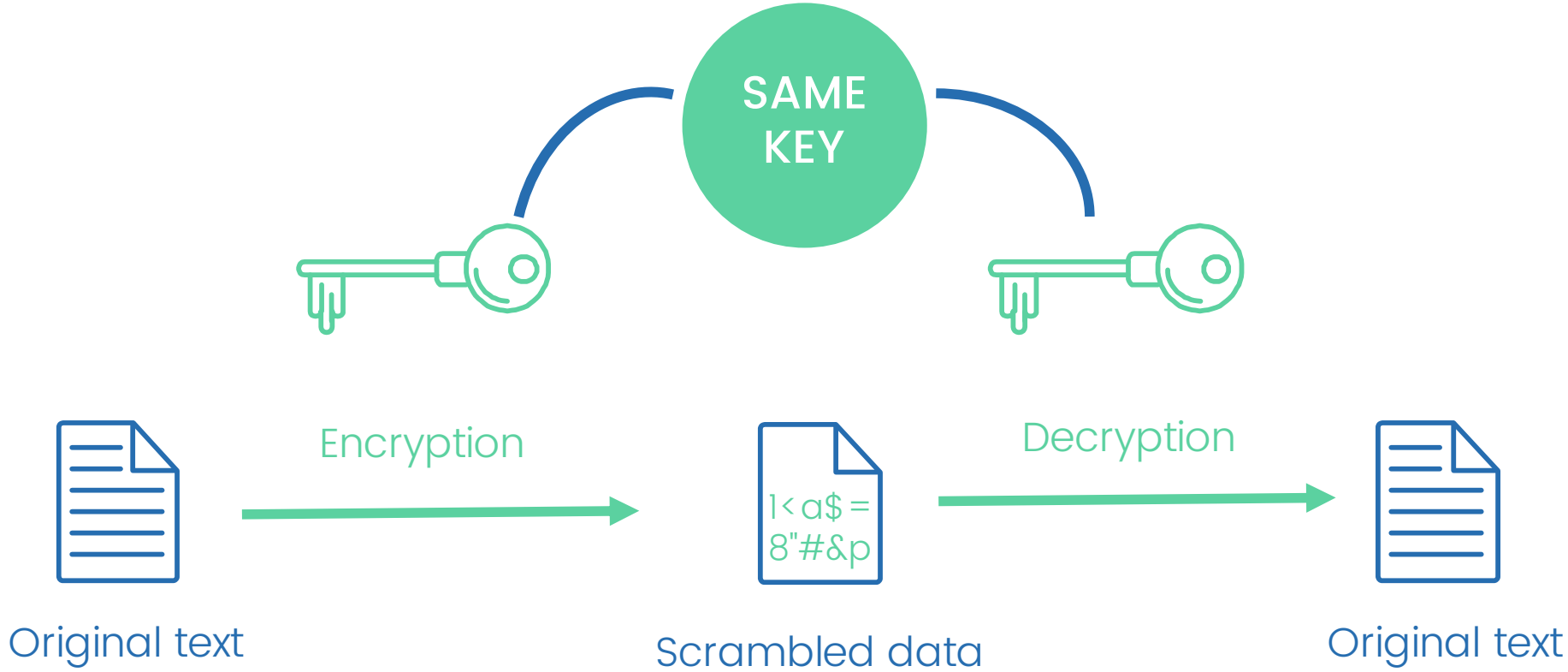
HASHING

Fingerprinting your data (password, file, …)

- Map data of arbitrary size onto data of fixed size
- Hashes are **determinist**, i.e. for a given value, it must always generate the same hash
- Hashes are **quick** to compute for any given message
- Hashes are **non-invertible**, i.e. it is not realistic to reconstruct the input data from its hash alone without spending great amounts of computing time
- Well known cryptographic hash algorithms:
  - MD5: produces hash of 124 bits (16 bytes)
  - SHA-1: produces hash of 160 bits (20 bytes)
  - SHA-256: produces hash of 256 bits (32 bytes)
  - SHA-512: produces hash of 512 bits (64 bytes)

Size matters!

SYMMETRIC ENCRYPTION



SYMMETRIC ENCRYPTION

Encrypt data with a single shared secret

- Uses a single key for both encryption and decryption
- Industry Standard symmetric-key algorithm: AES (Advanced Encryption Standard)
  - Support encryption key in 256 bits (32 bytes)
  - Hint: Works well with SHA-256 hashes

PROJECT'S PICKS

LINK TO PROJECTS

https://gitlab.com/l.lin/poei

YOUR TURN!