Lockness

The passport for online certification

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Problem

John Doe

Graduated from Queen's University

John Lark

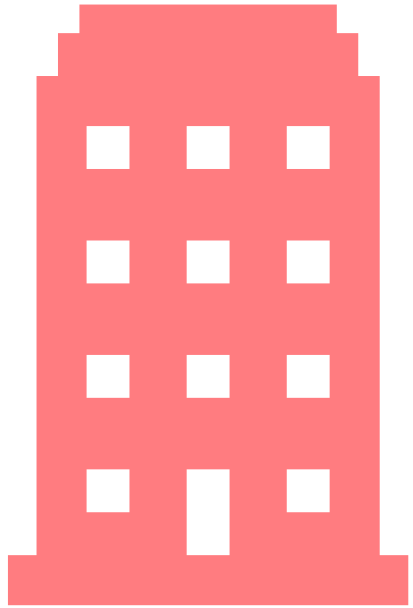
Taken all Machine Learning courses backed by major institutions

Who gets the job?

Who fits better?

Problem

- How can my employer **verify** that I've taken the certifications to enhance my education?
- How can they **trust the quality** of these online courses?
- Organizations currently **compromise on quality** for **trackability** when assigning their own modules



Solution:

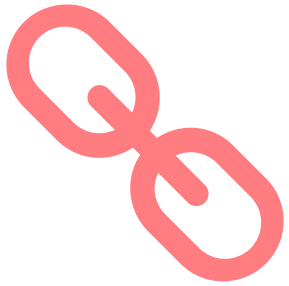
A platform that is the golden standard of online educational certification

Convenience

Aggregation of all online certificates

Security

Prevent all sources of certificate fraud



Credibility

Increase the legitimacy of MOOCs

The Industry

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The MOOC Industry

Massive Open Online Courses

20	$500	11.4
MILLION	MILLION	THOUSAND
New users	**Revenue**	**Available courses**
User base crossed 100M in 2018	In 2018 across all MOOCs	As of 2018

Competitors

Major Competitors	The Issue
parchment	Caters to schools and universities
cclaim	Doesn't consolidate all certificates, only their own

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Closed ecosystems compromise on quality of education

Comparisons

	Consolidation	Security	Convenience	Trackability
Lockness	✓	✓	✓	✓
parchment	✓	✗	✓	✗
cclaim	✗	✗	✓	✗

Our Product

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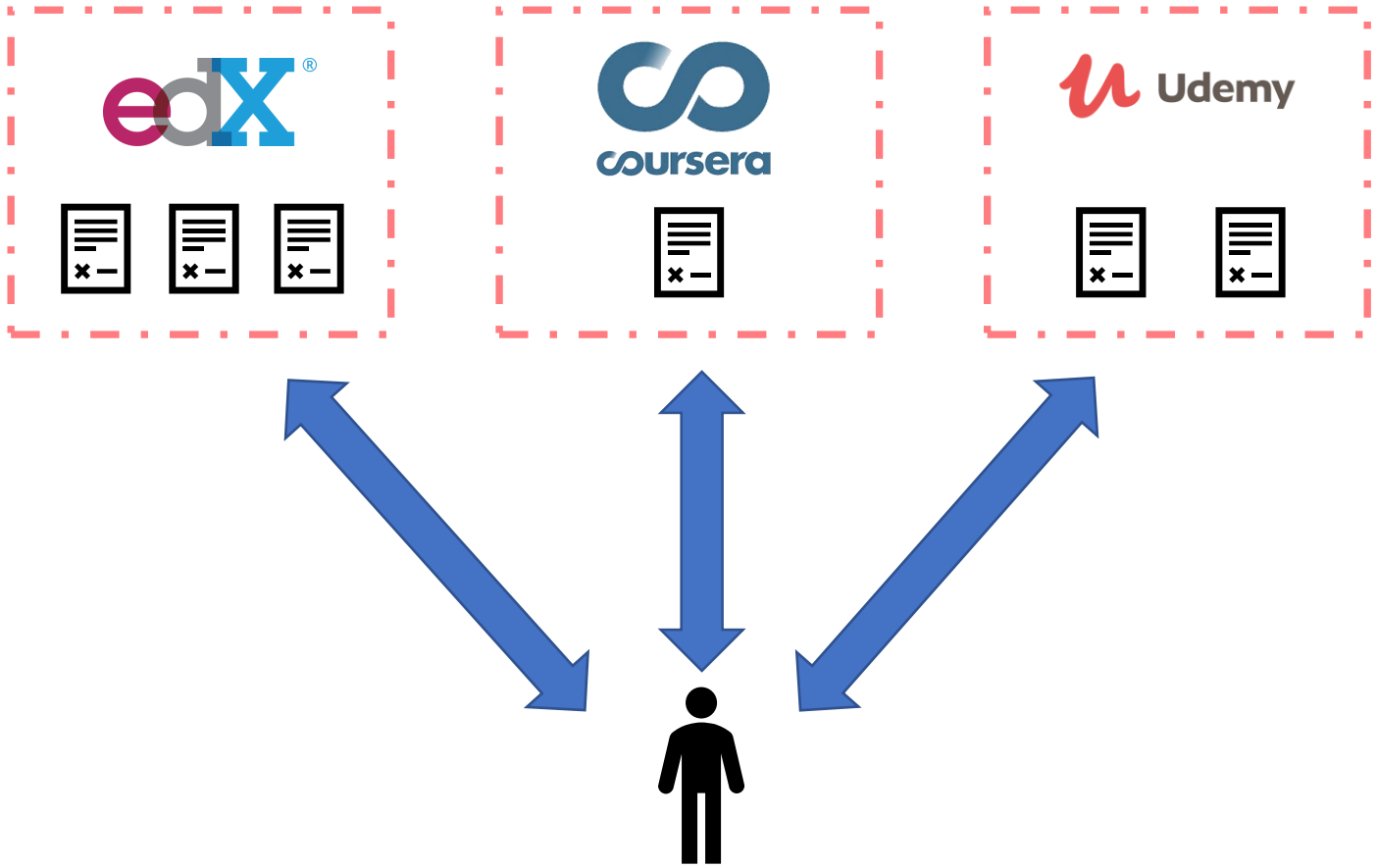
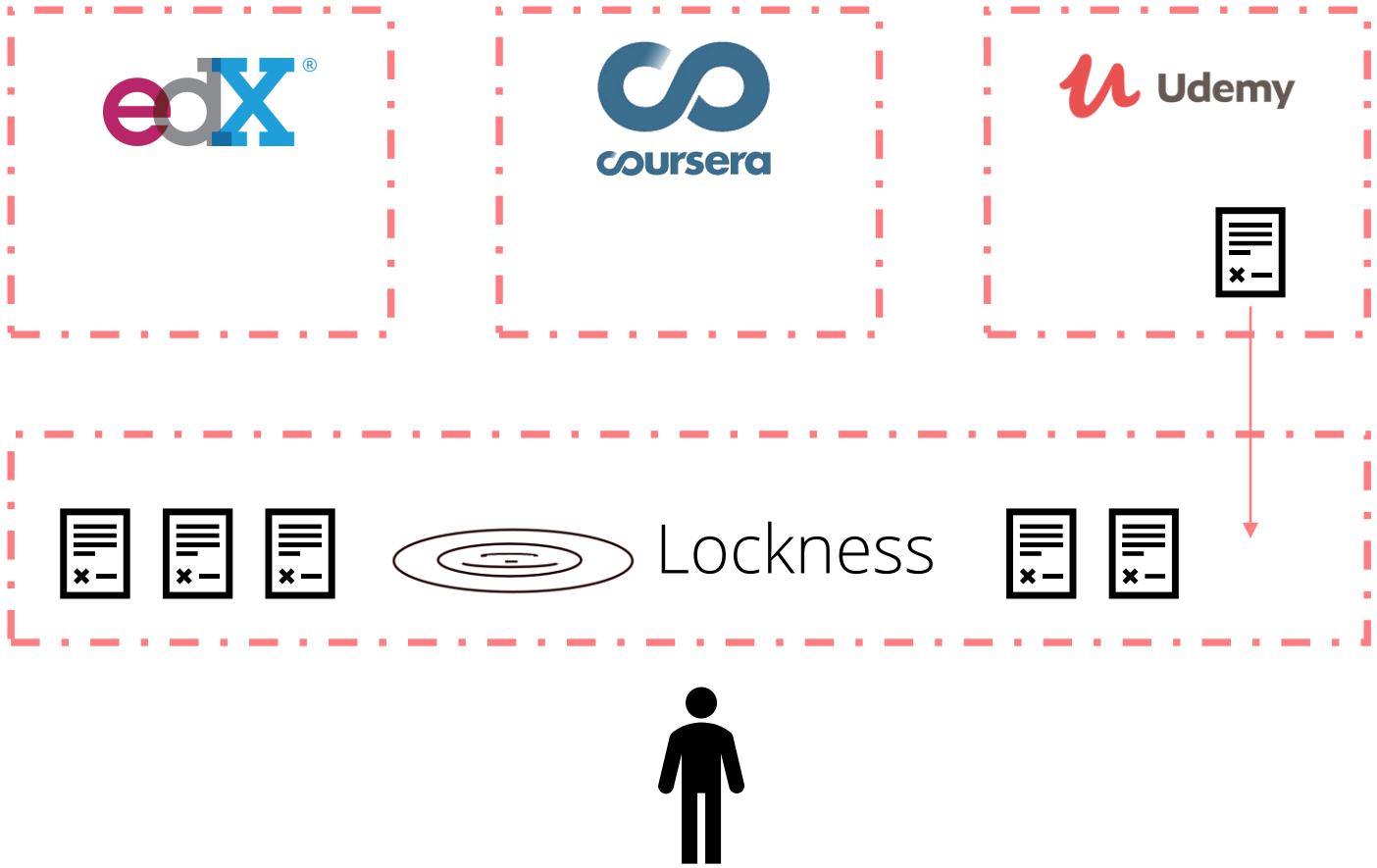
Application that uses blockchain tech to store and verify certificates

User Journey

User Journey



User Journey



Features and Benefits

Distribution → All MOOC certificates in one database, distributed by MOOCs

Convenience → Google sign in

→ Public profile

Why Blockchain?

Hyperledger

What We Need

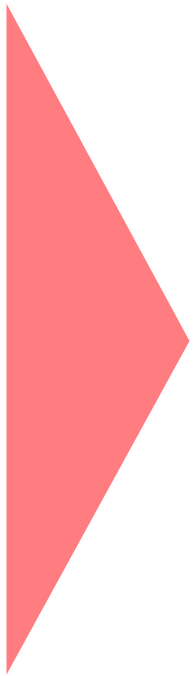
Consolidation

Trust

Security

Hyperledger

What We Need	Blockchain Provides
Consolidation	All certificates are verified by the same system
Trust	No third party has complete access to the database
Security	Rejects fraudulent certificates



Verification and Consolidation of your digital educational certificates

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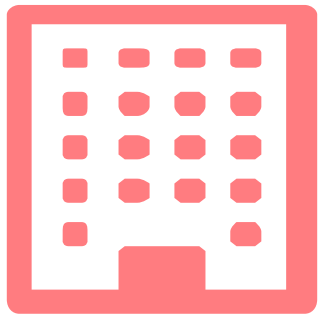
Market Strategy

Where does our product fit in the market?

Target Market

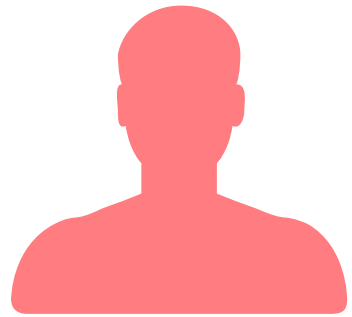
MOOCs

Register to verify the legitimacy of their courses



Businesses

Manage certificate of employees and verify talent



Learners

Keep track of earned certificates

Target Market: MOOCs

- Lockness verifies the courses MOOCs offer, allowing them to maintain a reputation of legitimacy
- Attract more users
- Online course providers like Coursera and online proctor services like ProctorU are interested

Target Market: Businesses

- Employers look for technically and job-ready candidates a traditional university may not guarantee
- Lockness allows businesses to verify the candidates credentials instantaneously
- Businesses can determine what courses they want their candidates to learn

BCG

L'ORÉAL PARIS

Infosys®

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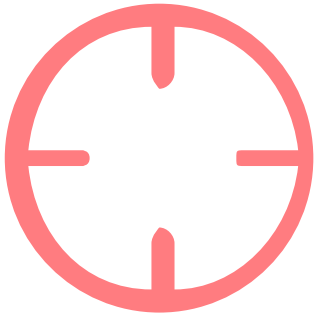
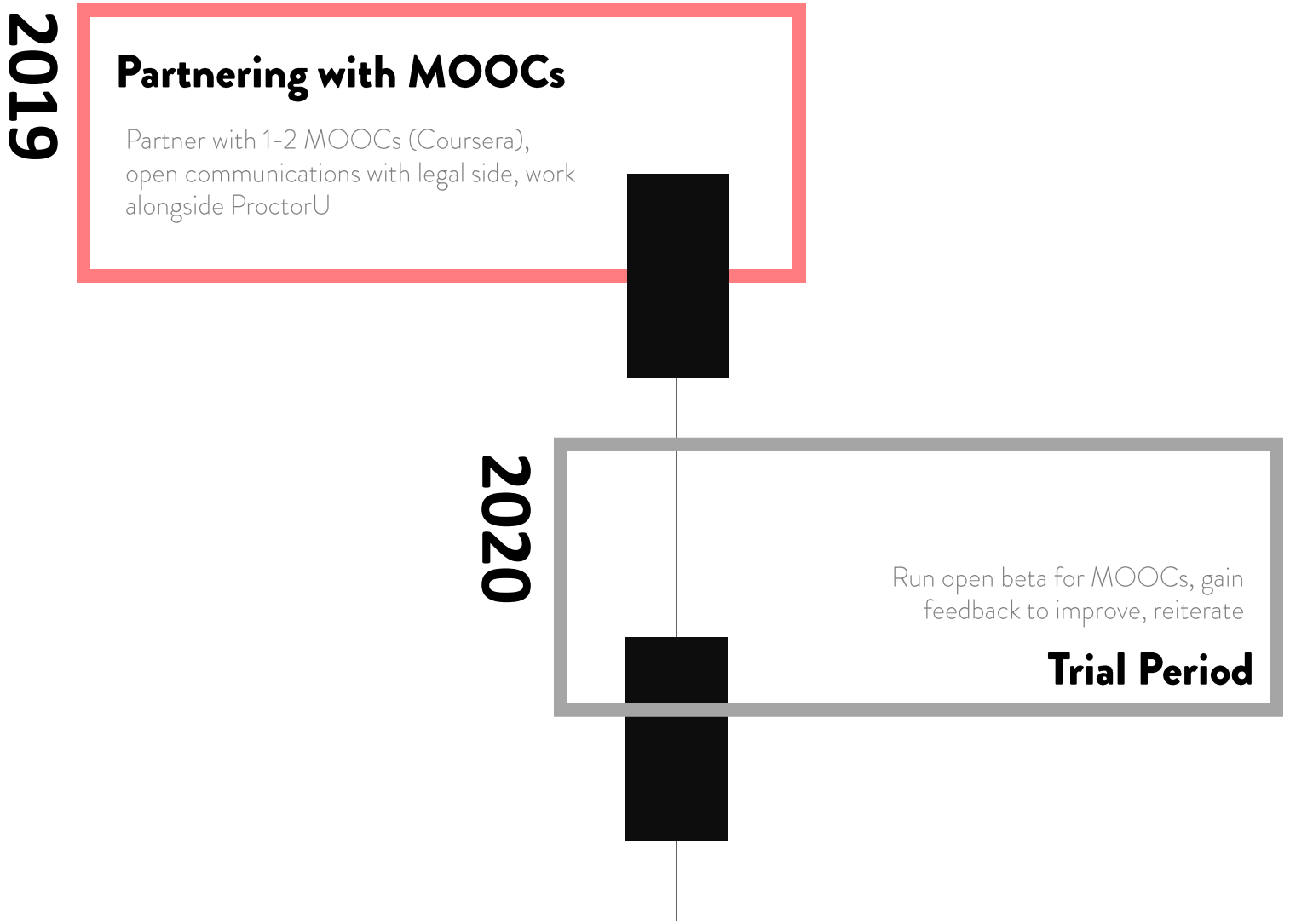
Target Market: Learners



Track all your finished certificates

Verified certificates can be used in job search

Market Strategy Timeline



2021

Sign More Partners

Extend support to more MOOCs after demonstrating product benefits

20XX

Begin marketing after building an established MOOC network

Market Towards Users

Marketing Toward Users

Advertisement Through MOOCs

Our partner MOOCs can advertise Lockness as a complementary product with their courses

Growth Through Major Businesses

Major businesses only accepts MOOC certificates verified by Lockness

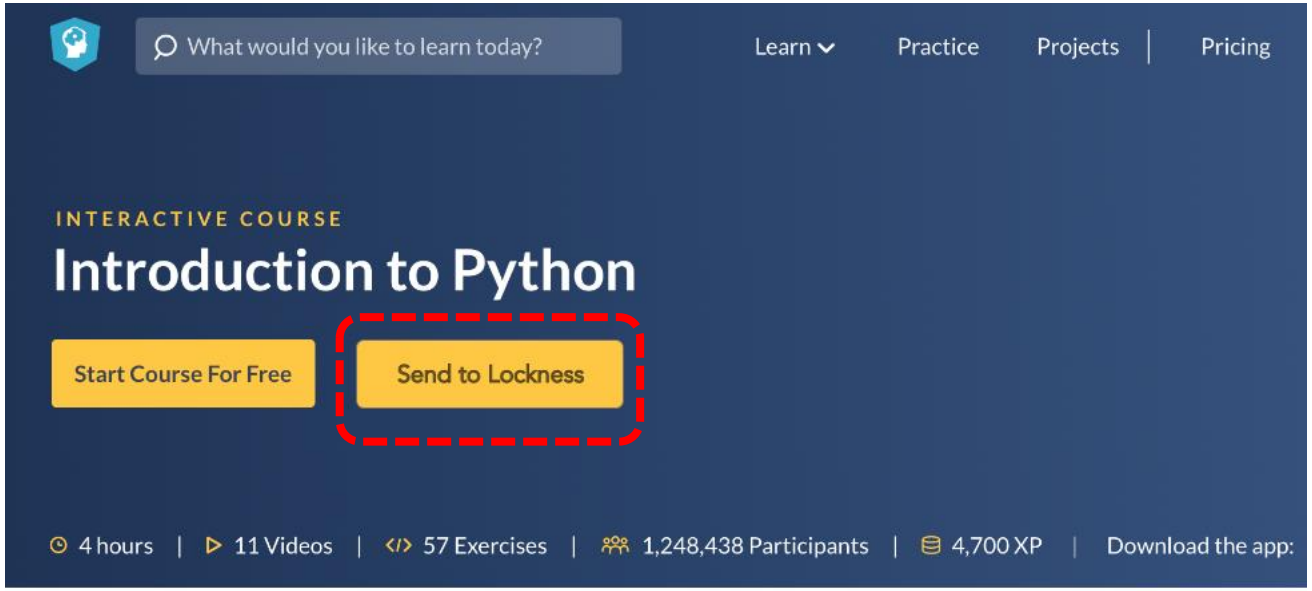
Network Effect

The more partners signed on, the more valuable our service becomes for users and businesses

Focus: Advertisement Through MOOCs

User Registers for MOOC

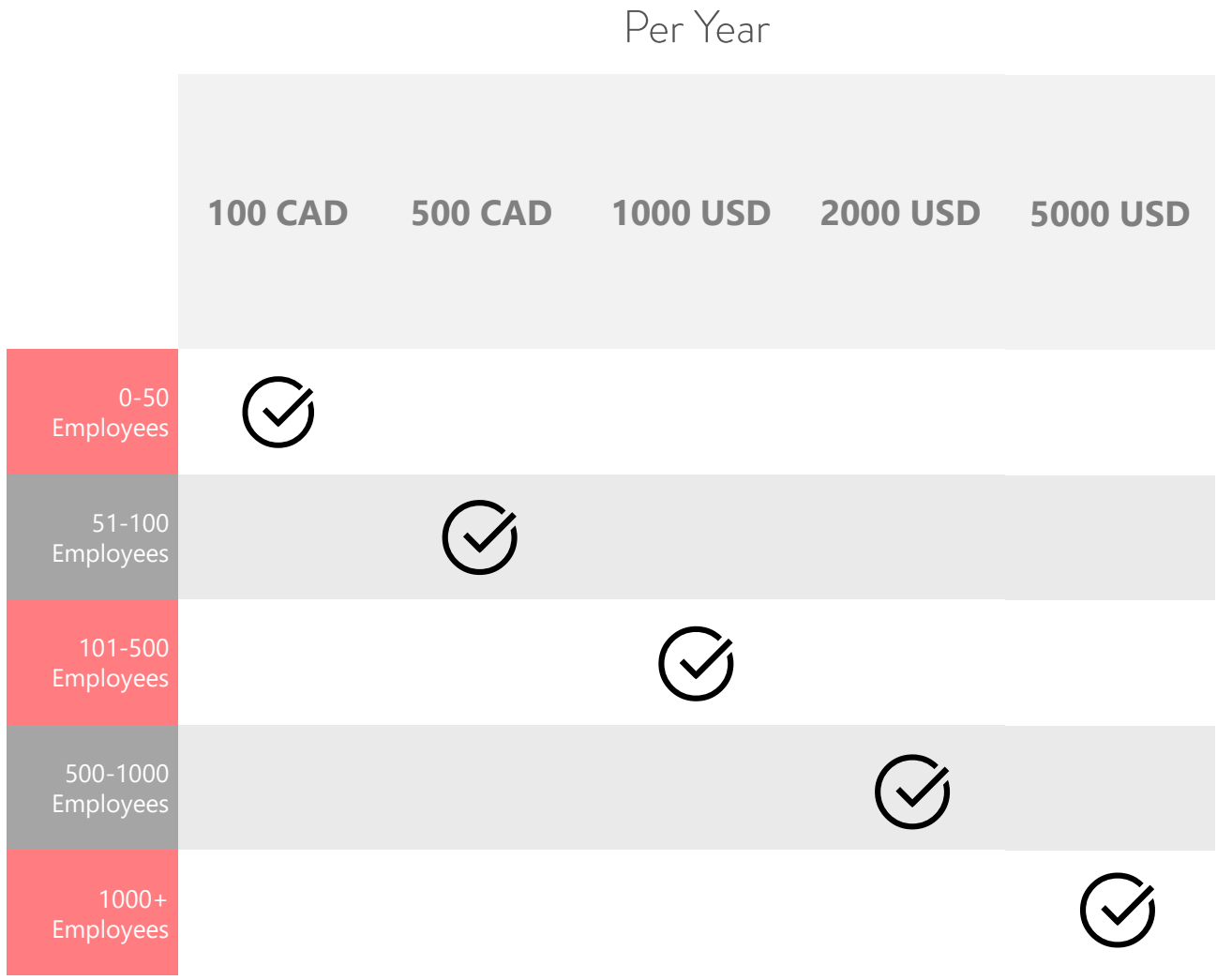
MOOC offers Lockness as an extension



Revenue Driver

- Businesses, the main source of revenue, will by charged by tiers

- Business pay the premium for services such as:
  - Discovery Platforms
  - Certification Management Solutions



Demo

LOCKNESS

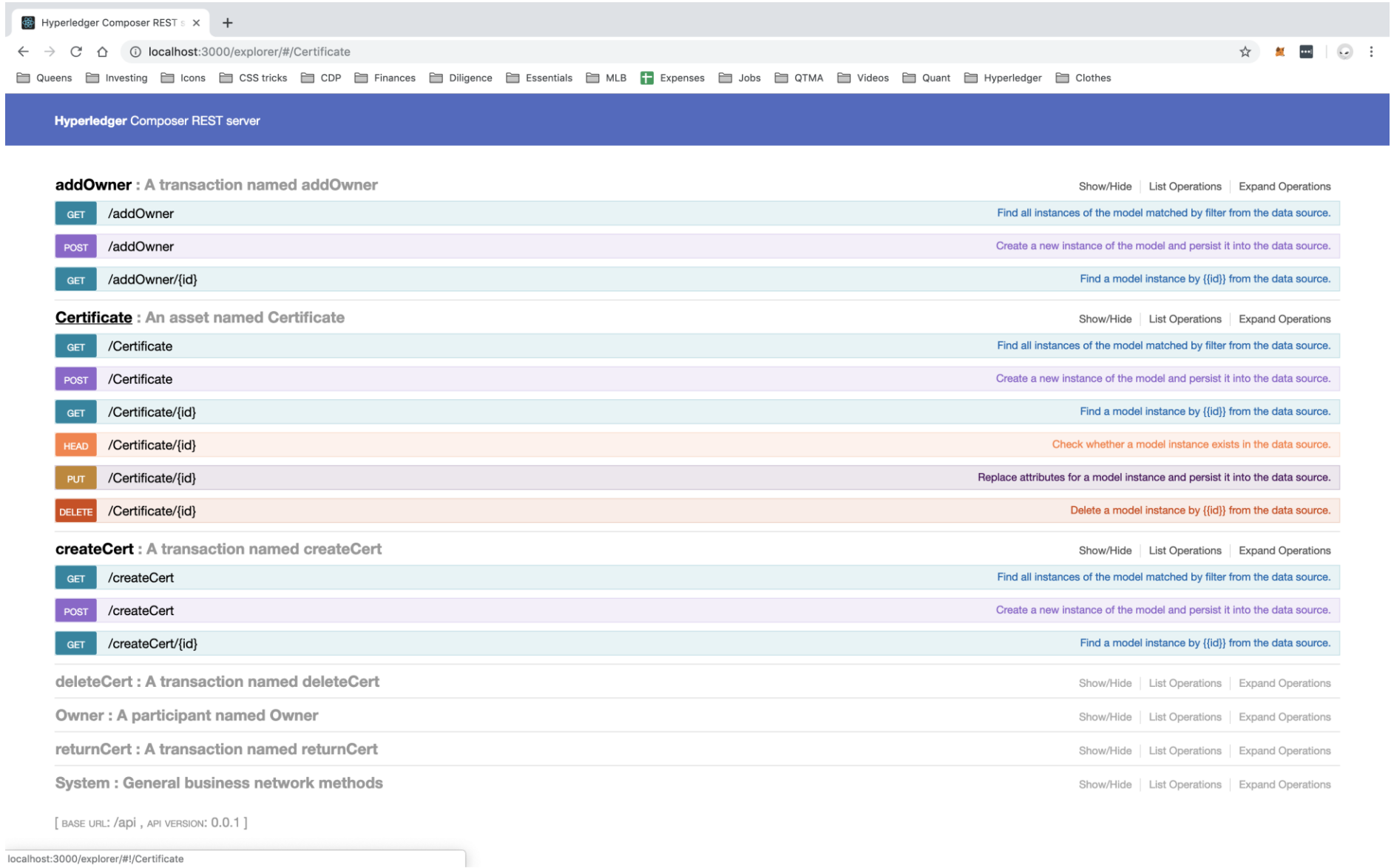
Team Sign Up

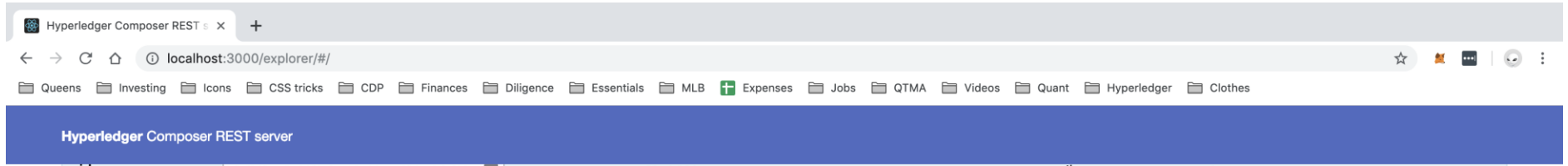
Sign in with Google

Sign in with email

Your passport for online certificates.

Think of Lockness as your educational passport. We make it easy to store, verify, and share your certificates in one place.


Hyperledger Composer REST
localhost:3000/explorer/#/Certificate
Queens
Investing
Icons
CSS tricks
CDP
Finances
Diligence
Essentials
MLB
Expenses
Jobs
QTMA
Videos
Quant
Hyperledger
Clothes
Hyperledger Composer REST server
addOwner : A transaction named addOwner
Show/Hide | List Operations | Expand Operations
GET /addOwner
Find all instances of the model matched by filter from the data source.
POST /addOwner
Create a new instance of the model and persist it into the data source.
GET /addOwner/{id}
Find a model instance by {{id}} from the data source.
Certificate : An asset named Certificate
Show/Hide | List Operations | Expand Operations
GET /Certificate
Find all instances of the model matched by filter from the data source.
POST /Certificate
Create a new instance of the model and persist it into the data source.
GET /Certificate/{id}
Find a model instance by {{id}} from the data source.
HEAD /Certificate/{id}
Check whether a model instance exists in the data source.
PUT /Certificate/{id}
Replace attributes for a model instance and persist it into the data source.
DELETE /Certificate/{id}
Delete a model instance by {{id}} from the data source.
createCert : A transaction named createCert
Show/Hide | List Operations | Expand Operations
GET /createCert
Find all instances of the model matched by filter from the data source.
POST /createCert
Create a new instance of the model and persist it into the data source.
GET /createCert/{id}
Find a model instance by {{id}} from the data source.
deleteCert : A transaction named deleteCert
Show/Hide | List Operations | Expand Operations
Owner : A participant named Owner
Show/Hide | List Operations | Expand Operations
returnCert : A transaction named returnCert
Show/Hide | List Operations | Expand Operations
System : General business network methods
Show/Hide | List Operations | Expand Operations
[BASE URL: /api , API VERSION: 0.0.1]
localhost:3000/explorer/#!/Certificate



id	0d4f23be48490f2efe436583e4a8b9110dcf26779de	**Model id**	path	string
filter		Filter defining fields and include - must be a JSON-encoded string ({"something":"value"})	query	string

Try it out! Hide Response

Curl

```
curl -X GET --header 'Accept: application/json' 'http://localhost:3000/api/addOwner/0d4f23be48490f2efe436583e4a8b9110dcf26779de97366a4b70d3a3e990424'
```

Request URL

```
http://localhost:3000/api/addOwner/0d4f23be48490f2efe436583e4a8b9110dcf26779de97366a4b70d3a3e990424
```

Response Body


```
{
  "$class": "org.lockness.certificates.addOwner",
  "firstName": "Greg",
  "lastName": "Mac",
  "email": "greg@gmail.com",
  "issuer": true,
  "transactionId": "0d4f23be48490f2efe436583e4a8b9110dcf26779de97366a4b70d3a3e990424",
  "timestamp": "2019-03-20T23:48:49.719Z"
}
```


Response Code

```
200
```

Response Headers


```
{
  "date": "Wed, 20 Mar 2019 23:49:23 GMT",
  "x-content-type-options": "nosniff",
  "etag": "W/\"f4-z5uGf8aJIrncAyul/arDZBxjxMI\"",
  "x-download-options": "noopen",
  "x-frame-options": "DENY",
  "content-type": "application/json; charset=utf-8",
  "access-control-allow-credentials": "true",
  "connection": "keep-alive",
  "vary": "Origin, Accept-Encoding",
  "content-length": "244",
  "x-xss-protection": "1; mode=block"
}
```

Design

Tech Stack

Simple framework to build, debug, and test

Private blockchain network built from authorized users

Real-time database with built-in authentication

Ethereum vs Hyperledger

ethereum

Vs.

HYPERLEDGER

Issues with Ethereum

- Immature development tools
- Incompatibility with Firebase

Future Features

- Mobile Application
- LinkedIn Integration
- Discover Similar Certificates
- Visualization and Analytics

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Questions?

Appendix

Appendix: ProctorU Founder Interview

"You need to make credentials believable in order for the shadow education industry to be successful..."

- Jarrod Morgan

Founder, ProctorU

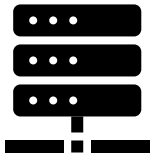
Appendix: Nursing Certificates

- Nurses have to verify that they've taken courses
- Need to contact every company to verify courses
- Inefficient system

Appendix: Cost Drivers

Cloud – Costs to maintain cloud database

$25 Per Month



Hyperledger – Costs to pay other nodes to verify transactions

Free to use (Apache License)

Appendix: Blockchain

- Chain of coded blocks
- Every computer tries to un-code the blocks and broadcasts it to the rest of the network
- The network checks the answer and either accepts or rejects the new ledger – majority rules
- Decentralized transaction system – no one is in control of the transactions

HYPERLEDGER

Appendix: Issues with Hyperledger

- Interacting with APIs
- Smart-contract to application compatibility
- Hashing keys to Firebase

HYPERLEDGER