

Group 20



Chestnut

Educational PKI Web App

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Background

- ▶ Thomas Sødring, associate professor
- ▶ Library and Information Science students (LIS)
- ▶ Problems with existing solution
 - ❖ Linux command line
 - ❖ JavaFX - desktop application

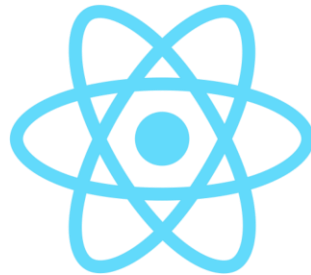
Solution and tools

- ▶ Web application
 - ❖ Portability
 - ❖ No setup for the user
- ▶ Tools and technologies
 - ❖ Freedom to choose

LIVE DEMO

Frontend

- ▶ React
- ▶ Semantic-UI
 - ❖ Built-in React integration



Chestnut as a web application

- ▶ Usability
- ▶ Responsiveness
- ▶ Tooltips
- ▶ Visual feedback

Backend

- ▶ Node, Express
- ▶ REST API
 - ❖ Richardson's maturity model
 - ❖ HATEOAS



```
1 {
2   "status": "200 - OK",
3   "message": "Login successful and token has been issued.",
4   "token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJpZCI6MSwidXNlcm5hbWUiOiJ0ZXN0MSIsImIzOWRtIjoiZm9udC91bG9ja3VzIiwiaWF0IjoiMTYxMjY0MjY0In0",
5   "links": [
6     {
7       "self": {
8         "method": "POST",
9         "description": "Login",
10        "href": "/api/login"
11      }
12    },
13    {
14      "method": "GET",
15      "description": "Get all registered users info.",
16      "href": "/api/users"
17    },
18    {
19      "method": "GET",
20      "description": "Get all keys, public and private, of currently logged in user.",
21      "href": "/api/keys/users/me"
22    },
23    {
24      "method": "GET",
25      "description": "Get all public keypairs and usernames of all registered users.",
26      "href": "/api/keys"
27    },
28    {
29      "method": "DELETE",
30      "description": "Delete currently logged in user.",
31      "href": "/api/users/me"
32    },
33    {
34      "method": "POST",
35      "description": "Encrypt string using the provided public key.",
36      "href": "/api/encrypt"
37    },
38    {
39      "method": "POST",
40      "description": "Decrypt cipher string using the provided private key.",
41      "href": "/api/decrypt"
42    }
43  ]
44 }
```


Methodology

- ▶ Agile
 - ❖ Iterative approach
 - ❖ Customer satisfaction
- ▶ Kanban
 - ❖ Visualization
 - ❖ Work-in-Progress
- ▶ Scrum
 - ❖ Daily standup meeting
 - ❖ Sprints

Process

- ▶ Working together
- ▶ Biweekly meeting with the product owner/supervisor
 - ❖ Review
 - ❖ Planning
- ▶ Corona outbreak
 - ❖ Working remotely
- ▶ Incremental approach

Reflections and conclusion

- ▶ Working in a group of 2
- ▶ Finished product

Thank you