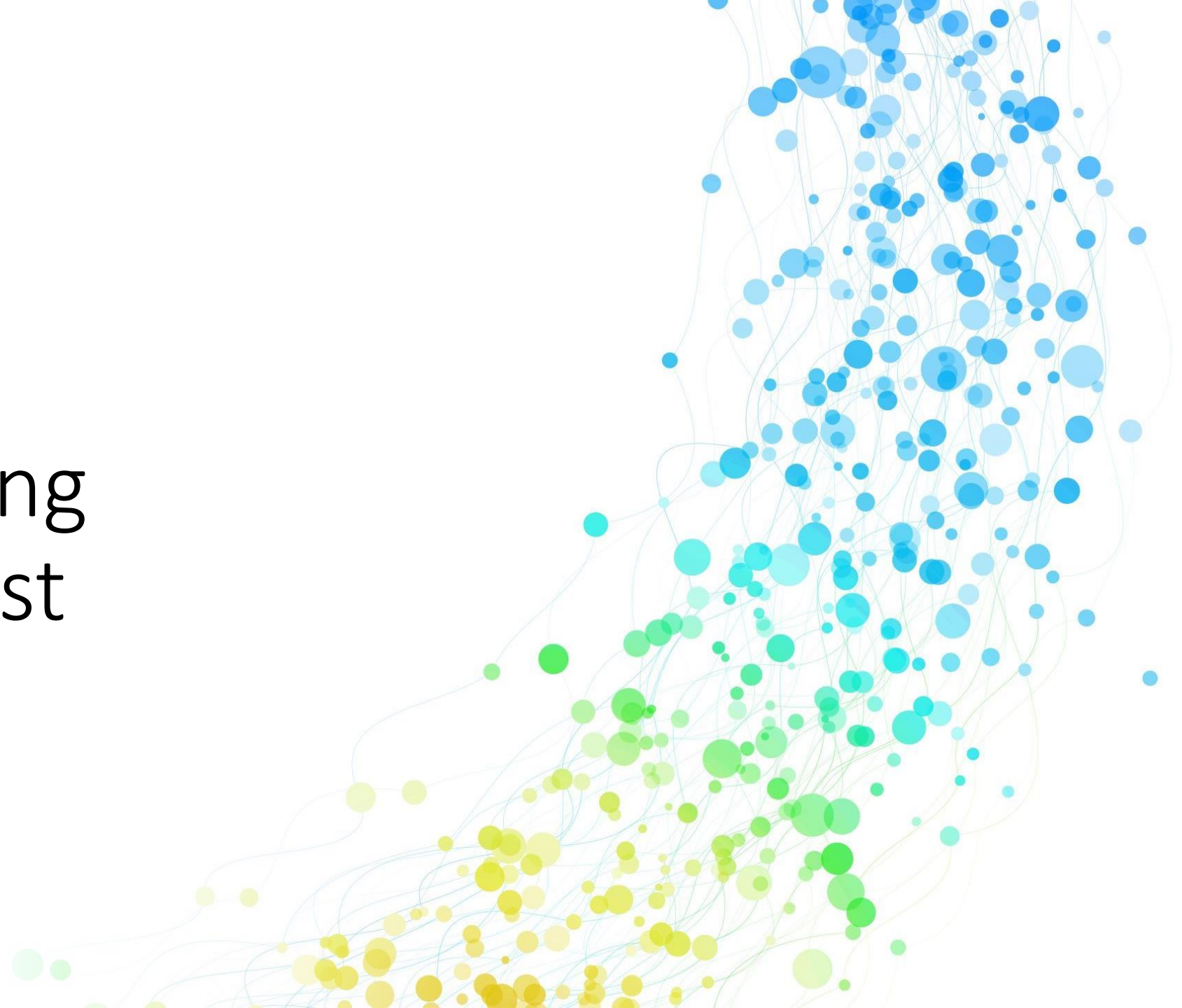



React Testing Library - Jest

Testing group 2



A large orange circle is positioned on the left side of the slide, partially cut off by the edge.

What we have achieved

- Performed front-end and back-end (JBB & MSW) unit tests with:
 - Mocha Framework.
 - Chai library.
 - Postman API.
 - Jest.
 - React Testing Library.



```

HTTP request
  ✓ Add new item (53ms)
[
  {
    _id: '63f504eafb1cd600f0503fa',
    name: 'Philly',
    price: 8,
    ingredientsEnglish: [
      'Sesame seed bun',
      'Philly Steak',
      'Cheese',
      'Cream cheese',
      'Bacon'
    ],
    ingredientsFinnish: [
      'Seesaminsiemen pulla',
      'Philly Steak',
      'Juusto',
      'Kermajuusto',
      'Pekoni'
    ],
    __v: 0
  }
]
  ✓ Return Items
  ✓ Get specific menu by id
{
  _id: '63f504eafb1cd600f0503fa',
  name: 'Philly v2',
  price: 9.5,
  ingredientsEnglish: [
    'Sesame seed bun',
    'Philly Steak',
    'Cheese',
    'Cream cheese',
    'Bacon'
  ],
  ingredientsFinnish: [
    'Seesaminsiemen pulla',
    'Philly Steak',
    'Juusto',
    'Kermajuusto',
    'Pekoni'
  ],
  __v: 0
}
  ✓ Change menu item properties by id
  ✓ Delete specific menu by id

5 passing (153ms)

```

Add new Menu items and return all items using Mocha - Chai (JB BB).

```

PS D:\TAMK\TAMK 2022-2023\Software Development Spring 2023\api-testing> npx mocha userTest.js

HTTP Request
  ✓ Add new user (55ms)
  ✓ Return all users
{
  _id: '63f4f0ae009c4e8cbebe6d88',
  name: 'Virgile Hero',
  xp: 0,
  phoneNumber: '+358442449638',
  email: 'jerseyboybagelsfi@gmail.com',
  isAdmin: false,
  __v: 0
}
  ✓ Return user by ID (47ms)
  ✓ Return user by phone number
{
  _id: '63f4f0ae009c4e8cbebe6d88',
  name: 'Alex Haukka',
  xp: 0,
  phoneNumber: '+358449743011',
  email: 'jerseyboybagelsfi@gmail.com',
  isAdmin: false,
  __v: 0
}
  ✓ Update user info by ID (46ms)
  ✓ Delete user by ID

6 passing (270ms)

PS D:\TAMK\TAMK 2022-2023\Software Development Spring 2023\api-testing>

```

Add a new user and return all users using Mocha - Chai (JB BB).

Integrating unit tests to the pipeline

.gitlab-ci.yml file

```
image: docker:latest

variables:
  REMOTE_HOST: deploy@172.16.101.22
  API_IMAGE: ${CI_REGISTRY_IMAGE}/api
  WEBAPP_IMAGE: ${CI_REGISTRY_IMAGE}/webapp

stages:
  - test

before_script:
  - apk add nodejs npm
  - cd api
  - npm install express

test:
  stage: test
  services:
    - docker:dind
      alias:mongo
  script:
    - npm --version
    - npm list express
    - cd ..
    - docker-compose up --build -d
    - sleep 200
    - docker ps -a
    # Go to api directory
    - cd api
    # Run npm commands
    - npm test
```

Problems with GitLab pipeline

Connection to database

```
83 1) HTTP request
84   Add new item:
85   Error: connect ECONNREFUSED 127.0.0.1:5000
86   at TCPConnectWrap.afterConnect [as oncomplete] (node:net:1494:16)
87 2) HTTP request
88   Return Items:
89   Error: connect ECONNREFUSED 127.0.0.1:5000
90   at TCPConnectWrap.afterConnect [as oncomplete] (node:net:1494:16)
91 3) HTTP request
92   Get specific menu by id:
93   Error: connect ECONNREFUSED 127.0.0.1:5000
94   at TCPConnectWrap.afterConnect [as oncomplete] (node:net:1494:16)
```

Jest Framework



Jest framework

Jest is a popular JavaScript testing framework that is used to test JavaScript code.

It was created by Facebook and is now maintained by a community of developers.

Focus on simplify testing process.

Works on: Bable, TypeScript, React, Angular, and many more.

Key features of Jest



Built-in
assertion library



Mocking



Code coverage



Snapshot
testing

React Testing Library



React Testing Library

Created by Kent C. Dodds and is now maintained by a community of developers.

React Testing Library (RTL) is a testing utility that provides a simple and intuitive API for testing React components.

Simulating user interactions and checking that the component renders the expected output.

React Testing Library - Common Utilities

- render
- fireEvent
- waitFor
- screen
- act



Testing Results

```
PASS src/App.test.tsx (6.985 s)
  FinalSubmit
    ✓ closes order component when X button is clicked (190 ms)
    ✓ Choose amount of plain bagels (51 ms)
    ✓ Choose amount of Everything bagels (51 ms)
  signUpModal
    ✓ closes SignUp component when X button is clicked (384 ms)
    ✓ Name (62 ms)
    ✓ Email (64 ms)
    ✓ Phone number (58 ms)
    ✓ shows Snackbar when Phone Number already in use (43 ms)
  VerificationModal
    ✓ renders correctly (65 ms)
  MuiDrawer
    ✓ should render a Menu icon button (10 ms)
  Home Component
    ✓ renders bagel menu items (95 ms)
  LoginModal
    ✓ closes LoginModal component when X button is clicked (27 ms)
    ✓ shows Snackbar when account does not exist (30 ms)
    ✓ updates phone number on input change (29 ms)
  About component
    ✓ renders the title (4 ms)
    ✓ renders the bagel image (4 ms)
    ✓ renders the text content (4 ms)
  contact component
    ✓ renders Contact component (85 ms)
    ✓ submits contact form successfully (148 ms)

A worker process has failed to exit gracefully and has been force exited.
an also cause this, ensure that .unref() was called on them.
Test Suites: 1 passed, 1 total
Tests:      19 passed, 19 total
Snapshots:  0 total
Time:       9.494 s, estimated 26 s
Ran all test suites related to changed files.
```

Frontend test results for JB BB

```
PASS src/test/VerticalInfiniteScrollList.test.tsx
PASS src/test/AccountScreen.test.tsx
PASS src/test/SideBarMenu.test.tsx
PASS src/test/Form.test.tsx
PASS src/test/About.test.tsx
PASS src/test/settingScreen.test.tsx
PASS src/test/FormInput.test.tsx
PASS src/test/dialogScreenEventNavigator.test.tsx (18.592 s)

Test Suites: 8 passed, 8 total
Tests:      30 passed, 30 total
Snapshots:  0 total
Time:       20.618 s, estimated 22 s
Ran all test suites related to changed files.
```

Frontend test results for MSW

Demo



Thank you very much!

