



Dashboard ► Technical Competency Training ► Single-Page Application

# DEV-206 Single-Page Application

Your progress

## 1. Purpose

Now Javascript extends to a lot of tools and frameworks that allow developers building almost everything on the client side. You will be asked to use the frameworks and tools to develop a simple front-end application. There are many popular frameworks in JavaScript web front-end world but for practice, you are allowed to select one of three of most popular framework: Angular, React/Redux, or Vue.js

**Target:** Software Engineer

**Difficulty Level:** 3 of 5

**Estimated Time:** 36 - 42 hours

**Type:** Assignment of developing Dashboard Web Application

**Prerequisites:** 'HTML and CSS' and 'JavaScript Fundamentals' course

**Benefits:** After completing this course, learners will

- Good understanding of the architecture of a front-end framework and its features
- Understand how Angular2/React/Vue.js Rendering work
- Understand component-based architecture, type of components and know how to build a reusable and composable UI components
- Understanding of application state and component state
- Strictly follow best practice in each framework or lib

## 2. Resources

**Coding Guidelines:** <https://github.com/kms-technology/coding-guidelines/blob/master/web-front-end.md>

**React/Redux:**

- React: <https://facebook.github.io/react/>
- Redux: <http://redux.js.org/>
- Read more: <https://egghead.io/courses/getting-started-with-redux>

**Angular:**

- Angular: <https://angular.io/docs/ts/latest/>
- TypeScript: <https://www.typescriptlang.org/>
- Read more: <https://github.com/angular/angular-cli>

**Vue.js:**

- [TBU]



## 3. Tasks

### 3.1. Overview

Dashboard is a web application that helps the user manage their dashboards. From the dashboard page, the user can choose a layout and add desired widgets that are supported by the system.

View mode:

Dashboard

Admin

Dashboard Title

Text Widget

Lorem Ipsum is simply dummy text of the printing and typesetting industry.

Datatable Widget

1 to 5 of 20 Contacts

ID	Name	Title
1	Stella Payne Diaz	Director
2	Luke Warm	Director
3	Meg Meehan Hoffaz	Developer
4	Peggy Flaming	Tester

Todo List Widget

What needs to be done?

2 Items left

AllActiveCompleted

Clear Completed

☒ Learning HTML/CSS

☒ Learning JavaScript

☐ Learning Angular

☐ Learning React

Simple Chart Widget

Director

EM

BA

Tester

Developer

Stock Ticker Widget

VNM	\$ 15.10	↓ 0.20
DOWJ	\$ 36.10	↑ 0.50
AAPL	\$ 108.18	↑ 0.25
NKE	\$ 56.10	↓ 0.28
YHO	\$ 42.94	↑ 1.79

Org Chart Widget

Edit mode:

DashboardAdmin

Dashboard Title

Text Widget

Lorem Ipsum is simply dummy text of the printing and typesetting industry.

Datatable Widget

1 to 5 of 20 Contacts

ID	Name	Title
1	Stella Payne Diaz	Director
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3	Meg Meehan Hoffaz	Developer
4	Peggy Flaming	Tester

Todo List Widget

What needs to be done?

2 Items left All Active Completed Clear Completed

- ☒ Learning HTML/GSS
- ☒ Learning JavaScript
- ☐ Learning Angular
- ☐ Learning React

Simple Chart Widget

- Director
- EM
- BA
- Tester
- Developer

Stock Ticker Widget

VNM	\$ 15.10	↓ 0.20
DOWJ	\$ 36.10	↑ 0.50
AAPL	\$ 108.18	↑ 0.25
NKE	\$ 56.10	↓ 0.28
YHO	\$ 42.94	↑ 1.79

Org Chart Widget

Add Widget

Add Widget

Add Widget

## 3.2. Features

### 3.2.1 Login/Logout Page

Login to Your Account

Username

Password

Login

In case of wrong username/password, show error message "Authentication failed!".

### 3.2.2 Dashboard Page

- Render page with selected layout and widgets
- Switch View & Edit mode
- View mode:
  - Show widgets in View mode
- Edit mode:
  - Show widgets in Edit mode

- Drag & Drop to re-arrange widget location on the dashboard

### 3.2.3 Widget Components

There are many different widget types but the required widget types are Text.

#### 3.2.3.1 Widget common feature:

- Maximize mode: show body content of the selected widget in full-screen
- Widget title
- Edit mode:
  - Delete widget button
- Widget settings:
  - Widget type
  - Min width: when the width of the widget is smaller than min-width, show horizontal scrollbar. For example, a widget has min-width is 500px shows on a small size screen device which its width is 300px. In this case, the actual size of widget is still 500px, but because the full size is only 300px thus the scrollbar will be shown.
  - Min height: the height of the widget should not smaller than min-height

#### 3.2.3.2 Text Widget

- Content: Display HTML content
- Setting: integrate a Markdown editor with WYSIWYG support

**Widget Settings** [X]

Widget title:

Widget type:  Min width:  Min height:

---

Text Content:

**Rich Text Editor Toolbar:** [B] [I] [U] [Link] [Unlink] [List] [Text Color] [Background Color] [Fullscreen]

Text Content Area:  
 Lorem Ipsum is simply dummy text of the printing and typesetting industry.

#### 3.2.3.3 Datatable Widget

- Content: Display data-table, sort columns and filter data at client-side
- Setting: Data source (Contact,...) and data properties for data-table columns

Widget Settings

×

Widget title:

New widget

Widget type:

Min width:

Min height:

Datatable

400

200

---

Data source:

Contact

Columns:

Selected columns:

ID

Email

Phone

Name

Title

#### 3.2.3.4 SimpleChart widget (optional)

- Content: display a chart in type of Line, Column, Pie
- Setting: Chart type (line, column, pie), Data source (Contact,...), Data property for x-axis and y-axis

Widget Settings

×

Widget title:

New widget

Widget type:

Min width:


Min height:


Simple Chart


400

200

---







Data source:

Group by:

Contact




Title

#### 3.2.3.5 TodoList widget (optional)

- Content: Create, toggle completion, delete item, list and filter items. Data load from server-side
- When there is more than one TodoList widget, they must display the same content
- Setting: none

- View mode:

### Todo List Widget



What needs to be done?

2 Items left

All

Active

Completed

Clear Completed

☒ Learning HTML/CSS

☒ Learning JavaScript

☐ Learning Angular

☐ Learning React

### 3.2.3.6 StockTicker widget (optional)

- *Content: Stock Ticker watchlist by using websocket technique*
- *Setting: Stock codes*

Widget Settings

Widget title:

New widget

Widget type:

Min width:

Min height:

Stock Tiker

400

200

Stock Codes:

VMN x

DOW x

AAPL x

SBUX x

NKE x

YHOO x

SDC x

DWW x

HJR x

## Initial Code and Submission

## The initial code:

- **[React/Redux]** <https://tgit.kms-technology.com/fundamentals/dev-206-react>
- **[Angular]** <https://tgit.kms-technology.com/fundamentals/dev-206-angular>
- **[Vue.js]** [TBU]

[Backend code] <https://tgit.kms-technology.com/fundamentals/dev-206-restapi>

**Before doing the assignment**, you need to access the above project URL which you choose to practice on to check your account permission (blocked or 404 error)

Ask L&D team (Ind@kms-technology.com) to unlock your account and/or add you to the course repository

**Then,**

- **Fork** the project to your account.
- Create your branch and work on it
- Do your assignment and commit all your code and related files/documents to your repository.
- Tag your source code for submission purpose.

**Finally,** you submit the evaluation request of the technology you practice on KLMS.

**Specific grading items are noted clearly in the Evaluation Request.**

**Please make sure that you cover them all before submitting your assignment.**



### Evaluation Request



In the request form, you should take note/comment for all grading items to explain:

- What you did,
- What you did not do,
- What is your code design approach,
- And what you think it is needed to let the advisor know about your assignment.

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## 4. Working Steps

- Learn the requirements in section 'Tasks' carefully to understand what you are supposed to do.
- Study the resources listed in section 'Resources', or doing your self-research to learn about needed requirements.
- Setup working environment to get ready for implementation.
- Design and implement your application and ensure it complies with section 'Tasks'.
- Test your implementation carefully to ensure it matches all requirements then submit the evaluation request.
- Join a review session with your advisor and go through all grading points which you will explain what you did to meet the criteria of the assignment.

Please note that grading should only base on the listed items (i.e. there is no hidden trap).

**Throughout the whole process, if you have any doubt, questions or need advice, feel free to contact your advisor.**

Good luck and enjoy coding!

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Instructor-led session - 29 Mar 2019





## NAVIGATION

### Dashboard

- Site home

Site pages

Current course

#### Single-Page Application

Participants

Badges

1. Purpose

2. Resources

3. Tasks

Initial Code and Submission

4. Working Steps

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My courses

Courses



## ADMINISTRATION

### Course administration



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Grades



Competencies

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