Web Applications Powered by Vue.js!

From Concept to Launch!

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Introductions ...

- Peter Pavlovich
  - Front-End Evangelist and Technology Addict
  - CTO, Censinet, Inc. (Supply Chain Risk Management for the Healthcare Sector)
    - React/Vue/Rails/Python, Postgres/MongoDB/Redis, AWS/Heroku
  - Principal Advisor, Embue, Inc. (Smart Apartment Management Systems)
    - Angular/Vue/Meteor, Node, Scala/Java, Postgres/MongoDB, AWS

Introductions ...

- Peter Pavlovich
  - Entrepreneur, Open Source Contributor and Community Member
  - Instructor, Mentor and Speaker.
  - http://linkedin.com/in/peterpavlovich
  - pavlovich@gmail.com
  - @ppavlovich

Plan for our session ...

- Build and deploy a cool Task Manager App
- Along the way we will:
  - Explore all the major features of Vue.js
  - Understand the add-on technologies
  - Build a Web app
  - Utilize Vuex, and Vuetify
  - Witness amazingly easy application development
  - Love how simple, powerful, and fun Vue.js is!

Workshop PDF

- https://app.box.com/v/vue-workshop-pdf

What is Vue.js?

What is Vue.js

- A web application, front-end framework
- Based on work by Evan You, an ex-googler from the Angular world.
- "I figured, what if I could just extract the part that I really liked about Angular and build something really lightweight”

Why Vue.js?

- It is:
  - Approachable
  - Versatile
  - Performant
  - Maintainable
  - Testable

Why Vue.js?

- Progressive
  - Convert your existing app over time
  - Coexists with:
    - Angular, React, Polymer, etc.
    - Java/Grails, .net, Ruby/Rails, Meteor

Why Vue.js?

- Component Based
  - Stateless, functional components for performance
  - Stateful components for flexibility/power

Why Vue.js?

- Simultaneous support for:
  - Multiple scripting languages
    - ES5, ES6, ES7, coffeescript, typescript
  - Multiple styling libraries
    - Plain CSS, Less, Sass, Stylus
  - Multiple templating languages
    - HTML, Handlebars, JSX, Pug/Jade

Why Vue.js?

- Simultaneous support for:
  - Multiple component patterns:
    - Stand-alone mini-app 'components'
    - Stateful (class based) components
    - Functional (stateless) components
    - Manually rendered components: Explicit DOM construction using JavaScript

Vue is Reactive!

- When the data for our app changes the UI will update to reflect those changes.

Reactive demo

- Build a simple Vue page and see it react!

Why yet another framework?

Vue vs React

- Both: Use a virtual DOM
- Both: Components are reactive & composable
- Both: Provide stateful & stateless components
- Both: Well factored:
  - Core library
  - Routing, global state in separate libraries
- Both: Perform well with little differences

Vue vs React

- When React re-renders a component, it re-renders the entire component subtree.
  - Need 'shouldComponentUpdate' a lot = extra work for developers
- Vue.js does this for you automatically without extra coding for the developer.

Vue vs React

- In React, everything is just javascript
  - JSX templates everywhere
  - CSS is also 'javascript'
- Vue.js supports JSX when you need that but also supports plain HTML templates when you don't. Also supports Jade/Pug, handlebars, ...

Vue vs React

- Scaling
  - Big learning curve with React:
    - JSX, ES6+, build systems, etc.
  - Vue is simpler, more flexible, less opinionated.

Vue vs Angular

- AngularJS
  - Vue.js is simpler, component based, faster.
- Angular (2+)
  - Vue.js is smaller (50% less), less opinionated/flexible and does not mandate the use of Typescript.
- Vue.js has a much lower learning curve.

Vue.js Ecosystem

- Lots of great plugins:
  - Vuex: Redux for vue
  - Vue-Router: Full featured Router for vue
  - Nuxt: developer framework for vue
  - vuefire/vuexFire: Firebase bindings for vue
  - Vuemotion: Easy state transitions for vue

Vue.js Ecosystem

- More great plugins:
  - axios: easy REST calls integrated with vue
  - Vuelidate: model validation framework
  - Vue-apollo: Apollo/GraphQL integration
  - Vue-i18n: Internationalization plugin
  - vuetify: Material component framework

Vue.js Ecosystem

- Even more great plugins:
  - https://curated.Vue.js.org/module/github_com::vuetifyjs

Under the hood

How does Vue Work?

- In JS, you create an instance of Vue.js.
- In the constructor, you pass an options obj.
- You identify the DOM element from your HTML that you wish to be controlled by Vue.
- Vue takes the HTML from that element and creates a template function from it.
- The template function generates the HTML for the browser using info/data from the vue instance.

Creating Vue instance

```
new Vue({
 el: '#app'
});


<div id="app">
  <span>I love ice cream!</span>
</div>
```

Creating Vue instance

```
new Vue({
 el: '#app',
 data: {
   product: 'ice cream'
 },
 …
});
```

Using dynamic data

```
new Vue({
 el: '#app',
 data: {
   product: 'ice cream'
 }
});



<div id="app">
 <span>I love {{ product }}!</span>
</div>
```

Using methods

```
new Vue({
 el: '#app',
 methods: {
   locateMe: function(){
     return "Denver"
   }
 }
});


<div id="app">
 <span>I love it in {{ locateMe() }}!</span>
</div>
```

Using data & methods

```
new Vue({
 el: '#app',
 data: { place: 'Denver' },
 methods: {
   locateMe: function(){
     return this.place;
   }
 }
});


<div id="app">
 <span>I love it in {{ locateMe() }}!</span>
</div>
```

Dynamic HTML attributes

```
new Vue({
 el: '#app',
 data: {
  company: {
   name: 'Censinet',
   link: 'http://censinet.com'
  }
 }
});

<div id="app">
 <span>I love working at
  <a href="{{ company.link }}">{{ company.name }}</a>
 </span>
</div>
```

Vue's v-bind directive

```
new Vue({
 el: '#app',
 data: {
  company: {
   name: 'Censinet',
   link: 'http://censinet.com'
  }
 }
});

<div id="app">
 <span>I love working at
  <a v-bind:href="company.link">{{ company.name }}</a>
 </span>
</div>
```

Vue's binding ":" shortcut

```
new Vue({
 el: '#app',
 data: {
  company: {
   name: 'Censinet',
   link: 'http://censinet.com'
  }
 }
});

<div id="app">
 <span>I love working at
  <a :href="company.link">{{ company.name }}</a>
 </span>
</div>
```

Other directives: v-once

```
new Vue({
 el: '#app',
 data: {
  food: 'cheesecake'
 },
 methods: {
  updateName: function(){
   this.food = 'peas'
  }
 }
});

<div id="app">
 <span v-once>I love {{ food }}</span>
 <span>{{ food }} is my comfort food!</span>
</div>
```

Other directives: v-html

```
new Vue({
 el: '#app',
 data: {
  favorite: {
   name: 'Google',
   link: '<a href="http://google.com">Google</a>`
 }
});

<div id="app">
 <p>Try searching at {{favorite.name}}!</p>
 <p>{{ favorite.link }}</p>
 <p v-html="favorite.link"></p>
</div>
```

Exercise

- https://github.com/pavlovich/VueFiles
- Use http://codepen.io or http:// jsfiddle.net
- Import https://unpkg.com/vue/dist/vue.js
- Create a hard-coded task with id (number), name, icon URL (find a suitable one hosted on the web) and owner (email) and store that data in a vue instance's data.
- Output the task icon, name and priority information.
- Also, show the current date and time retrieved from the vue instance using a dynamic method.

Other directives: v-for (collection)

```
new Vue({
 el: '#app',
 data: {
  foods: [
   'rice', 'apples', 'steak'
  ]
});

<div id="app">
 <ul>
  <li v-for="food in foods">{{ food }}</li>
 </ul>
</div>
```

Other directives: v-for (collection/index)

```
new Vue({
 el: '#app',
 data: {
  foods: [
   'rice', 'apples', 'steak'
  ]
});

<div id="app">
 <ul>
  <li v-for="(f, i) in foods">({{i}}) {{f}}</li>
 </ul>
</div>
```

Other directives: v-for (object/with key)

```
new Vue({
  el: '#app',
  data: {
    foods: {
      rice: {type: 'grains', size: 'cup'},
      apple: {type: 'fruit', size: 'each'}
    }
  }
});

<div id="app">
  <ul> <li v-for="(p, name) in foods">
    {{`${name}(${p.type}) is sold by the ${p.size}` }}
  </li> </ul>
</div>
```

Other directives: v-for (over numbers)

```
new Vue({
  el: '#app'
});

<div id="app">
 <ul>
  <li v-for="num in 100">
    The count is now {{ num }}
  </li>
 </ul>
</div>
```

Other directives: v-on

```
new Vue({
  el: '#app',
  data: {
    foods: [rice', 'apples', 'steak']
  },
  methods: {
    enter:(event)=>{event.target.style.backgroundColor: 'red'}
    exit:(event)=>{event.target.style.backgroundColor: 'transparent'}
});

<div id="app">
  <ul>
    <li v-for="food in foods"
        v-on:mouseenter="enter"
        v-on:mouseleave="exit">{{ food }}</li>
  </ul>
</div>
```

Vue's listen "@" shortcut

```
new Vue({
  el: '#app',
  data: {
    foods: ['rice', 'apples', 'steak']
  },
  methods: {
    enter:(event)=>{event.target.style.backgroundColor = 'red'}
    exit:(event)=>{event.target.style.backgroundColor =
    'transparent'}
});

<div id="app">
  <ul>
    <li v-for="food in foods"
       @mouseenter="enter"
       @mouseleave="exit">{{ food }}</li>
  </ul>
</div>
```

Passing arguments

```
new Vue({
  el: '#app',
  data: {
    foods: [rice', 'apples', 'steak']
  },
  methods: {
    enter:(food, event)=>{event.target.style.backgroundColor: 'red'}
    exit:(food, event)=>{event.target.style.backgroundColor:
    'transparent'}
});

<div id="app">
  <ul>
    <li v-for="food in foods"
       @mouseenter="enter(food, $event)"
       @mouseleave="exit(food, $event)">{{ food }}</li>
  </ul>
</div>
```

Exercise

- Hardcode a list of tasks in a vue instance
- Display that list using an unordered list showing only the name
- When you click on one of these items, change its background to indicate it is selected and display the details of it below the task list.
- If you click it a second time, 'unselect' it and clear the area below the task list.

Using modifiers

```
const myApp = new Vue({
  el: '#app',
  data: { x: 0, y: 0 },
  methods: {
    move: function(e){ this.x = e.clientX; this.y = e.clientY; },
    noMove: function(event){ event.stopPropagation(); }
  }
});

<div id="app">
  <div @mousemove="move">
      This is a test
       <span @mousemove="noMove"> ... this is only a test!</span>
       <span @mousemove.stop> ... this, too, is only a test!</span>
  </div>
  <div> {{ x }} / {{ y }}</div>
</div>
```

Key event modifiers

```
const myApp = new Vue({
  el: '#app',
  data: { text: 'nothing yet’ },
  methods: {
    key: function({target}){ this.text = target.value },
    clear: function({target}){
      target.value = "";
      this.text = 'cleared';
    }
  }
});

<div id="app">
  <div>
    <input type="text" @focus="clear" @keyup.enter.space="key" />
  </div>
  <div> {{ text }} </div>
</div>
```

Exercise

- Change the previous exercise so that when you select a task, an input field containing its name appears. The input field is contained in a form and is displayed below the list.
- When you change the text in the input field and press enter, the form is submitted and the edited text becomes the new name for the selected task and the task is then unselected.
- If you click a selected task before pressing enter, it simply is unselected with no update and the input field is hidden.

2-way binding: v-model

```
const myApp = new Vue({
  el: '#app',
  data: { text: ‘Enter something …’ }
  }
});

<div id="app">
  <div>
    <input type=“text" v-model=“text”/>
  </div>
  <div> {{ text }} </div>
</div>
```

2-way binding: v-model

```
const myApp = new Vue({
  el: '#app',
  data: { text: ‘Type something … press space or enter to update’ },
  methods: {
    key: function({target}){ this.text = target.value },
    clear: function({target}){
      target.value = "";
      this.text = 'cleared';
    }
  }
});

<div id="app">
  <div>
    <input type=“text” @focus="clear" @keyup.enter.space="key" />
  </div>
  <div> {{ text }} </div>
</div>
```

Computed properties

```
const myApp = new Vue({
  el: '#app',
  data: { msg: ‘Greetings,’, name: ‘Peter Pavlovich’ },
  methods: {
    key: function({target}){ this.text = target.value },
    clear: function({target}){
      target.value = "";
      this.text = ‘No message for’;
    }
  },
   computed: { greeting: function() { return `#{msg} #{name}.` }}
});

<div id="app">
  <div>
    <input type="text" @focus="clear" @keyup.enter.space="key" />
  </div>
  <div> {{ greeting }} </div>
</div>
```

Watching properties

```
const myApp = new Vue({
  el: '#app',
  data: { text: 'initial' },
  watch: {
    text: function(value, original){
     console.log(`My text changed from ${original} to ${value}`)
    }
   },
  methods: { changeText: function(){this.text = 'updated'} }
});


<div id="app">
  <div>
    <span>My text is {{ text }}</span>
  </div>
  <button @click="changeText">Update text</button>
</div>
```

Exercise

- Convert the previous example to use v-model to update a temporary copy of the selected task prior to updating.
- Display a confirmation dialog to the user if they attempt to unselect or select a different task when editing a task and unsaved changes are present.

Dynamic Styling (via classes)

```
const myApp = new Vue({
  el: '#app',
  data: { isRed: false },
  methods: {
    toggleColor: function() { this.isRed = !this.isRed}
  }
});


<div id="app">
  <div class="demo-text"
       @click="toggleColor"
       :class="{'make-it-red': isRed, 'make-it-blue': !isRed }" >
      Click to change colors
  </div>
</div>

css is as you would expect it to be.
```

Dynamic Styling (via code)

```
const myApp = new Vue({
  el: '#app',
  data: { isRed: false },
  methods: { toggleColor: function() { this.isRed = !this.isRed} },
  computed: { myClasses: function(){
   return {'make-it-red': this.isRed, 'make-it-blue': !this.isRed}
  }
});


<div id="app">
  <div class="demo-text"
       @click="toggleColor"
       :class="myClasses" >
      Click to change colors
  </div>
</div>

css is as you would expect it to be.
```

Dynamic CSS (via data props)

```
const myApp = new Vue({
  el: '#app',
  data: { isRed: false, dynClass: ‘super-bold’ },
  methods: { toggleColor: function() { this.isRed = !this.isRed} }
});


<div id="app">
  <div class="demo-text"
       @click="toggleColor"
       :class=“[dynClass, {‘make-it-red’: isRed}]” >
      Click to change colors
  </div>
</div>

css is as you would expect it to be.
```

Dynamic CSS (via computed styles)

```
const myApp = new Vue({
  el: '#app',
  data: { bgColor: ‘green’, bdrStyle: ‘1px solid blue’ }
});


<div id="app">
  <div class=“demo-text"
       :style=“{‘background-color’: bgColor, borderTop: bdrStyle}”>
      Sample text
  </div>
</div>

css is as you would expect it to be.
```

Conditional Rendering: v-if / v-else-if / v-else

```
const myApp = new Vue({
  el: '#app',
  data: { showFormal: false, showCasual: false }
});


<div id="app">
  <div v-if="showFormal">
    Greetings!
  </div>
  <div v-else-if="showCasual">
    Hi there!
  </div>
  <div v-else>
    There you are!
  </div>
</div>
```

Conditional Rendering: v-show

```
const myApp = new Vue({
  el: '#app',
  data: { showFormal: false, showCasual: false }
});


<div id="app">
  <div v-show="showFormal">
    Greetings!
  </div>
  <div v-show="showCasual">
    Hi there!
  </div>
</div>
```

Rendering multiple top-level elements

```
const myApp = new Vue({
  el: '#app',
  data: { showMe: true }
});


<div id="app">
  <template v-if="showMe">
    <div> One </div>
    <div> Two </div>
  </template>
</div>
```

Referencing HTML elements

```
const myApp = new Vue({
 el: '#app',
 data: { showMe: true },
 methods: {
   updateText: function(){
     this.$refs.one.innerText = 'New One'
   }
 }
});

<div id="app">
  <template v-if="showMe">
    <div ref="one" @click="updateText"> One </div>
    <div> Two </div>
  </template>
</div>
```

Manually Mounting Vue

```
const myApp = new Vue({
 data: { showMe: true },
 methods: {
   updateText: function(){
     this.$refs.one.innerText = 'New One'
   }
 }
});

myApp.$mount(`#app`);

<div id="app">
  <template v-if="showMe">
    <div ref="one" @click="updateText"> One </div>
    <div> Two </div>
  </template>
</div>
```

Vue instance lifecycle

Slide credit to: Maximilian Schwarzmüller (udemy Vue course)

Project Setup

Install WebStorm

- https://www.jetbrains.com/webstorm/download/

Install Sourcetree

- https://www.atlassian.com/software/sourcetree

Install the vue-cli

```
npm install -g yarn
npm install -g @vue/cli
```

Using the all-new GUI Project Manager

Using the all-new GUI Project Manager

Using the all-new GUI Project Manager

Using Vue ui

Create a new project
Details
Presets
Features
Configuration
Project folder
Type a name
/Users/pavl...entations/vue/workshop/src/
Package manager
Default
Additional options
Overwrite target folder if it exists
Git repository
Initialize git repository (recommended)
Initial commit message (optional)
Cancel
Next

Using Vue ui

Create a new project
Details
Presets
Features
Configuration
Project folder
taskmaster
/...entations/vue/workshop/src/taskmaster
Package manager
yarn
Additional options
Overwrite target folder if it exists
Git repository
Initialize git repository (recommended)
From Vue UI Generator
Cancel
Next

Using Vue ui

Create a new project

Details | Presets | Features | Configuration

A preset is an association of plugins and configurations. After you've selected features, you can optionally save it as a preset so that you can reuse it for future projects, without having to reconfigure everything again.

Select a preset

- censinet_standard
  vue-router, vuex, sass, babel, typescript, pwa, eslint, unit-mocha, e2e-cypress (Use config files)
- Standard_presentation_config
  babel, eslint (Use config files)
- NFJS_Workshop
  vue-router, vuex, less, babel, eslint (Use config files)
- test preset
  vue-router, vuex, less, babel, eslint
- Default preset
  babel, eslint
- Manual
  Manually select features
- Remote preset

← Previous Next →

Using Vue ui

Create a new project

Details | Presets | Features | Configuration

Babel
Transpile modern JavaScript to older versions (for compatibility) More Info

TypeScript
Add support for the TypeScript language More Info

Progressive Web App (PWA) Support
Improve performances with features like Web manifest and Service workers More Info

Router
Structure the app with dynamic pages More Info

Vuex
Manage the app state with a centralized store More Info

CSS Pre-processors
Add support for CSS pre-processors like Sass, Less or Stylus More Info

Linter / Formatter
Check and enforce code quality with ESLint or Prettier More Info

Unit Testing
Add a Unit Testing solution like Jest or Mocha More Info

E2E Testing
Add an End-to-End testing solution to the app like Cypress or Nightwatch More Info

Use config files
Use specific configuration files (like '.babelrc') instead of using 'package.json'.

Previous | Next

Using Vue ui

Create a new project

Details | Presets | Features | Configuration

Use history mode for router? (Requires proper server setup for index fallback in production)
By using the HTML5 History API, the URLs don't need the '#' character anymore. More Info

Pick a CSS pre-processor:
PostCSS, Autoprefixer and CSS Modules are supported by default.

Less

Pick a linter / formatter config:
Checking code errors and enforcing an homogeneous code style is recommended.

ESLint + Prettier

Pick additional lint features:

- Lint on save
- Lint and fix on commit

Previous | Create Project

Using Vue ui

router? (Requires proper server setup for index fallback in production)
Save as a new preset
Preset name
RWX Workshop
Save the features and configuration into a new preset
Cancel
Continue without saving
Create a new preset

Using Vue ui

res proper server setup for index fallback in production)
URLs don't need the '#' character anymore. More Info
ules are supported by default.
an homogeneous code style is recommended.
Installing Vue CLI plugins. This might take a while...
Previous
Create Project
Resolving packages

Using Vue ui

res proper server setup for index fallback in production)
URLs don't need the '#' character anymore. More Info
ules are supported by default.
an homogeneous code style is recommended.
Installing Vue CLI plugins. This might take a while...
Previous
Create Project
Resolving packages

Using Vue ui

Project dashboard
Customize
Welcome tips
Welcome to your new project!
You are looking at the project dashboard where your can put widgets. Use the 'Customize' button to add more! Everything is automatically saved.
On the left are the different available pages. 'Plugins' let you add new Vue CLI plugins, 'Dependencies' for managing the packages, 'Configuration' to configure the tools and 'Tasks' to run scripts (for example webpack).
Return to the project manager with the dropdown at the top left of the screen or the home button in the status bar at the bottom.
Understood
Kill port
Ready to kill
Enter a network port
Kill

Using Vue ui

Project dashboard
Customize
Kill port
Ready to kill
Enter a network port
Kill

Using Vue ui

Project plugins
+ Add plugin
Installed plugins
@vue/cli-service
version 3.2.0
latest 3.2.0
Official
Installed
local service for vue-cli projects
More Info
@vue/cli-plugin-babel
version 3.2.0
latest 3.2.0
Official
Installed
babel plugin for vue-cli
More Info
@vue/cli-plugin-eslint
version 3.2.1
latest 3.2.1
Official
Installed
eslint plugin for vue-cli
More Info

Using Vue ui

Add a plugin

Search | Configuration | Files changed

vuetify

vue-cli-plugin-vuetify 0.4.6
Vuetify *Framework Plugin for Vue CLI 3* 57.5K vuetifyjs More Info

vue-cli-plugin-form-generator-vuetify 0.2.3
Plugin for Vue CLI 3 2.8K Gripon-web More Info

vue-cli-plugin-vuetify-cordova 0.0.13
Vuetify *Cordova plugin. Make the world easy* 7.6K canhkieu More Info

vue-cli-plugin-vuetify-electron 0.0.7
Electron plugin for vue-cli-3 5.4K canhkieu More Info

1

Search by algolia | Browse local plugin | Cancel | Install vue-cli-plugin-vuetify

Using Vue ui

Add a plugin
Search
Configuration
Files changed
Installation of vue-cli-plugin-vuetify
Choose a preset:
Default (recommended) (Default)
Cancel
Finish installation

Using Vue ui

Add a plugin

Search | Configuration | Files changed

Files changed 9

Search file | Collapse all

package.json

```
10  10      "dependencies": {
11  11        "vue": "^2.5.17",
12  12        "vue-router": "^3.0.1",
    13  +     "vuetify": "^1.3.0",
13  14        "vuex": "^3.0.1"
14  15      },
15  16      "devDependencies": {
                ...
23  24        "less": "^3.0.4",
24  25        "less-loader": "^4.1.0",
25  26        "lint-staged": "^7.2.2",
26      -     "vue-template-compiler": "^2.5.17"
    27  +     "stylus": "^0.54.5",
    28  +     "stylus-loader": "^3.0.1",
    29  +     "vue-cli-plugin-vuetify": "^0.4.6",
    30  +     "vue-template-compiler": "^2.5.17",
    31  +     "vuetify-loader": "^1.0.5"
27  32      },
28  33      "gitHooks": {
29  34        "pre-commit": "lint-staged"
```

Commit changes | Skip

Using Vue ui

Project dashboard
Done
Run task
Run task
Configure widget
Kill port
Kill port
Enter a network port
Kill
Add widgets
Welcome tips
Some tips to help you get sta...
Plugin updates
Monitor plugin updates
Dependency updates
Monitor dependencies updat...
Vulnerability check
Check for known vulnerabiliti...
Run task
Shortcut to run a task
News feed
Read news feed

Using Vue ui

Project dashboard
Customize
Run task
Configure widget
Kill port
Ready to kill
Enter a network port
Kill

Using Vue ui

Using Vue ui

Project dashboard
Customize
Run task
serve
Compiles and hot-reloads for developm...
Run task
Go to Task
Kill port
Ready to kill
Enter a network port
Kill

Using Vue ui

Project dashboard
Customize
Run task
serve
Running
Stop task
Go to Task
Kill port
Ready to kill
Enter a network port
Kill

Using Vue ui

Project dashboard
Customize
Run task
serve
Running
Stop task
Go to Task
Kill port
Ready to kill
Enter a network port
Kill
Run task
inspect
Done
Run task
Go to Task

Using Vue ui

Project tasks
serve
Running
build
Compiles and minifies for p...
lint
Lints and fixes files
inspect
Done
serve Compiles and hot-reloads for development
vue-cli-service serve
Stop task
Parameters
Output
Dashboard
Analyzer
Status
Success
Errors
0
Warnings
0
Assets
5.2MB (Parsed)
Modules
1.7MB (Parsed)
Dependencies
1.6MB 97.96%
Idle (12s)
Speed stats
Global Average 6s
3G Slow 104.96s
4G 4.82s
DSL 27.93s
Mobile Edge 175.1s
3G Basic 26.44s
LTE 3.56s
Cable 8.39s
2G 150.17s
3G Fast 26.29s
Dial Up 836.59s
FIOS 2.1s
Assets
Parsed Global 3G Slow 3G Fast
app.js 5.2MB 5.99s 104.66s 26.22s
about.js 12.7kB 0.04s 0.65s 0.21s
favicon.ico 1.1kB 0.03s 0.42s 0.16s
index.html 0.9kB 0.03s 0.42s 0.15s
Dependencies
vuetify 1.0MB
vue 207.0kB
sockjs-client 180.5kB
vue-router 64.4kB
html-entities 57.4kB
core-js 39.3kB

Using Vue ui

Project tasks
serve
Running
build
Compiles and minifies for p...
lint
Lints and fixes files
inspect
Done
serve
Compiles and hot-reloads for development
vue-cli-service serve
Stop task
Parameters
Output
Dashboard
Analyzer
Analyzer
Go up
Go to home
Chunk app (app)
Parsed
vue-router
Stats: 64.4kB
Parsed: 64.4kB
Gzip: 0.0kB

Using Vue ui

Project tasks

serve
Running

build
Compiles and minifies for p...

lint
Lints and fixes files

inspect
Done

serve Compiles and hot-reloads for development

vue-cli-service serve

Stop task | Parameters

Output | Dashboard | Analyzer

Output

```
67% building 493/513 modules 20 active ...ylus/components/_date-picker-table
67% building 494/513 modules 19 active ...ylus/components/_date-picker-table
67% building 495/513 modules 18 active ...ylus/components/_date-picker-table
68% building 496/513 modules 17 active ...ylus/components/_date-picker-table
68% building 497/513 modules 16 active ...ylus/components/_date-picker-table
68% building 498/513 modules 15 active ...ylus/components/_date-picker-table
68% building 499/513 modules 14 active ...ylus/components/_date-picker-table
68% building 500/513 modules 13 active ...ylus/components/_date-picker-table
68% building 501/513 modules 12 active ...ylus/components/_date-picker-table
68% building 502/513 modules 11 active ...ylus/components/_date-picker-table
68% building 503/513 modules 10 active ...ylus/components/_date-picker-table
68% building 504/513 modules 9 active ...ylus/components/_date-picker-table.
69% building 505/513 modules 8 active ...ylus/components/_date-picker-table.
69% building 506/513 modules 7 active ...ylus/components/_date-picker-table.
69% building 507/513 modules 6 active ...ylus/components/_date-picker-table.
69% building 508/513 modules 5 active ...ylus/components/_date-picker-table.
69% building 509/513 modules 4 active ...ylus/components/_date-picker-table.
69% building 510/513 modules 3 active ...ylus/components/_date-picker-table.
69% building 511/513 modules 2 active ...ylus/components/_date-picker-table.
69% building 512/513 modules 1 active ...ylus/components/_date-picker-table.
98% after emitting DONE Compiled successfully in 11908ms06:27:32

WARN
Couldn't parse bundle asset "/Users/pavlovich/Documents/Presentations/vue/wor
kshop/src/taskmaster/dist/about.js".
Analyzer will use module sizes from stats file.


App running at:
- Local:   http://localhost:8080/
- Network: http://172.20.2.161:8080/


Note that the development build is not optimized.
To create a production build, run yarn build.
```

Using Vue ui

```
~/Doc/Pr/v/w/src  vue ui
🚀  Starting GUI...
🌠  Ready on http://localhost:8000
{"type":"warning","data":"\"@vue/cli-plugin-babel > babel-loader@8.0.4\" has unmet peer dependency \"webpack@>=2\".\"}
{"type":"warning","data":"\"@vue/cli-plugin-eslint > eslint-loader@2.1.1\" has unmet peer dependency \"webpack@>=2.0.0 <5.0.0\".\"}
{"type":"warning","data":"\" > less-loader@4.1.0\" has unmet peer dependency \"webpack@^2.0.0 || ^3.0.0 || ^4.0.0\".\"}

🚀  Invoking generator for vue-cli-plugin-vuetify...
📦  Installing additional dependencies...

{"type":"warning","data":"\"@vue/cli-plugin-babel > babel-loader@8.0.4\" has unmet peer dependency \"webpack@>=2\".\"}
{"type":"warning","data":"\"@vue/cli-plugin-eslint > eslint-loader@2.1.1\" has unmet peer dependency \"webpack@>=2.0.0 <5.0.0\".\"}
{"type":"warning","data":"\" > less-loader@4.1.0\" has unmet peer dependency \"webpack@^2.0.0 || ^3.0.0 || ^4.0.0\".\"}
{"type":"warning","data":"\" > vuetify-loader@1.0.8\" has unmet peer dependency \"webpack@^4.0.0\".\"}
⚓  Running completion hooks...

✔  Successfully invoked generator for plugin: vue-cli-plugin-vuetify
   The following files have been updated / added:

     src/assets/logo.svg
     src/plugins/vuetify.js
     package.json
     public/index.html
     src/App.vue
     src/components/HelloWorld.vue
     src/main.js
     src/views/Home.vue
     yarn.lock

   You should review these changes with git diff and commit them.
```

Using Vue ui

[Beta] serve - Project tasks -
CLI Service | Vue CLI 3
taskmaster
localhost:8080
VUETIFYMATERIAL DESIGN
LATEST RELEASE
Welcome to Vuetify
For help and collaboration with other Vuetify developers,
please join our online Discord Community
What's next?
Explore components
Select a layout
Frequently Asked Questions
Important Links
Documentation
Chat
Made with Vuetify
Twitter
Articles
Ecosystem
vuetify-loader
github
awesome-vuetify

Using the vue-cli

```
> cd ~/projects
projects> vue create taskmaster
```

```
Vue CLI v3.0.0-rc.4
? Please pick a preset:
  censinet_standard (vue-router, vuex, sass, babel, typescript, pwa, eslint, unit-mocha, e2e-cypress)
  Standard_presentation_config (babel, eslint)
  NFJS_Workshop (vue-router, vuex, less, babel, eslint)
  default (babel, eslint)
> Manually select features
```

```
Vue CLI v3.0.0-rc.4
? Please pick a preset: Manually select features
? Check the features needed for your project:
>◉ Babel
 ◯ TypeScript
 ◯ Progressive Web App (PWA) Support
 ◯ Router
 ◯ Vuex
 ◉ CSS Pre-processors
 ◉ Linter / Formatter
 ◯ Unit Testing
 ◯ E2E Testing
```

Using the vue-cli

```
Vue CLI v3.0.0-rc.4
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, CSS Pre-processors, Linter
? Pick a CSS pre-processor (PostCSS, Autoprefixer and CSS Modules are supported by default):
  SCSS/SASS
> LESS
  Stylus
```

```
Vue CLI v3.0.0-rc.4
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, CSS Pre-processors, Linter
? Pick a CSS pre-processor (PostCSS, Autoprefixer and CSS Modules are supported by default): LESS
? Pick a linter / formatter config:
  ESLint with error prevention only
  ESLint + Airbnb config
  ESLint + Standard config
> ESLint + Prettier
```

Using the vue-cli

```
Vue CLI v3.0.0-rc.4
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, CSS Pre-processors, Linter
? Pick a CSS pre-processor (PostCSS, Autoprefixer and CSS Modules are supported by default): LESS
? Pick a linter / formatter config: Prettier
? Pick additional lint features: (Press <space> to select, <a> to toggle all, <i> to invert selection)
>◉ Lint on save
 ◯ Lint and fix on commit
```

```
Vue CLI v3.0.0-rc.4
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, CSS Pre-processors, Linter
? Pick a CSS pre-processor (PostCSS, Autoprefixer and CSS Modules are supported by default): LESS
? Pick a linter / formatter config: Prettier
? Pick additional lint features: Lint on save
? Where do you prefer placing config for Babel, PostCSS, ESLint, etc.? (Use arrow keys)
> In dedicated config files
  In package.json
```

Using the vue-cli

```
Vue CLI v3.0.0-rc.4
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, CSS Pre-processors, Linter
? Pick a CSS pre-processor (PostCSS, Autoprefixer and CSS Modules are supported by default): LESS
? Pick a linter / formatter config: Prettier
? Pick additional lint features: Lint on save
? Where do you prefer placing config for Babel, PostCSS, ESLint, etc.? In dedicated config files
? Save this as a preset for future projects? (y/N)
```

Using the vue-cli

```
Vue CLI v3.2.1
✨  Creating project in /Users/pavlovich/Documents/Presentations/vue/workshop/src/taskmaster.
🗃  Initializing git repository...
⚙  Installing CLI plugins. This might take a while...

yarn install v1.7.0
info No lockfile found.
[1/4] 🔍  Resolving packages...
[2/4] 🚚  Fetching packages...
[3/4] 🔗  Linking dependencies...
[4/4] 📃  Building fresh packages...
success Saved lockfile.
info To upgrade, run the following command:
$ curl --compressed -o- -L https://yarnpkg.com/install.sh | bash
✨  Done in 19.99s.
🚀  Invoking generators...
📦  Installing additional dependencies...

yarn install v1.7.0
[1/4] 🔍  Resolving packages...
[2/4] 🚚  Fetching packages...
[3/4] 🔗  Linking dependencies...
[4/4] 📃  Building fresh packages...

success Saved lockfile.
✨  Done in 7.06s.
⚓  Running completion hooks...

📄  Generating README.md...

🎉  Successfully created project taskmaster.
👉  Get started with the following commands:

 $ cd taskmaster
 $ yarn serve

~/Doc/Pr/v/w/src
```

Using the vue-cli

```
$ cd taskmaster
$ yarn serve

~/Doc/Pr/v/w/src  yarn serve
yarn run v1.7.0
error Couldn't find a package.json file in "/Users/pavlovich/Documents/Presentations/vue/workshop/src"
info Visit https://yarnpkg.com/en/docs/cli/run for documentation about this command.
~/Doc/Pr/v/w/src  cd taskmaster
~/Doc/Pr/v/w/src/t  git  b7fe5  master  clear
~/Doc/Pr/v/w/src/t  git  b7fe5  master  yarn serve
yarn run v1.7.0
$ vue-cli-service serve
 INFO  Starting development server...
 98% after emitting CopyPlugin

 DONE  Compiled successfully in 4150ms


  App running at:
  - Local:   http://localhost:8080/
  - Network: http://172.20.2.161:8080/

  Note that the development build is not optimized.
  To create a production build, run yarn build.
```

[Beta] serve - Project t | CLI Service | Vue CLI 3 | taskmaster

localhost:8080

Welcome to Your Vue.js App

For a guide and recipes on how to configure / customize this project,
check out the vue-cli documentation.

Installed CLI Plugins

babel eslint

Essential Links

Core Docs Forum Community Chat Twitter News

Ecosystem

vue-router vuex vue-devtools vue-loader awesome-vue

Exercise

- Create a new Vue project named ‘taskmaster’
  - Use the CLI
  - Follow the selections as on the slides.

Review of base template

- Demo ...

Vue's ecosystem

- Vue has a number of 'plug-ins'
  - Official
    - Vue-router
    - Vuex (centralized store - like Redux)
  - Community
    - Vuetify (Material Design Inspired UI)

Let's add our UI widgets

```
~/Doc/Pr/v/w/src/t  git  b7fe5  master  vue add vuetify

📦  Installing vue-cli-plugin-vuetify...

yarn add v1.7.0
[1/4] 🔍  Resolving packages...
[2/4] 🚚  Fetching packages...
[3/4] 🔗  Linking dependencies...
[4/4] 📃  Building fresh packages...

success Saved lockfile.
success Saved 1 new dependency.
info Direct dependencies
└─ vue-cli-plugin-vuetify@0.4.6
info All dependencies
└─ vue-cli-plugin-vuetify@0.4.6
✨  Done in 4.31s.
✔  Successfully installed plugin: vue-cli-plugin-vuetify

? Choose a preset: (Use arrow keys)
❯ Default (recommended)
  Prototype (rapid development)
  Configure (advanced)
```

Let's add our UI widgets

```
? Choose a preset: Default (recommended)

🚀  Invoking generator for vue-cli-plugin-vuetify...
📦  Installing additional dependencies...

yarn install v1.7.0
[1/4] 🔍  Resolving packages...
[2/4] 🚚  Fetching packages...
[3/4] 🔗  Linking dependencies...
[4/4] 📃  Building fresh packages...

success Saved lockfile.
✨  Done in 5.40s.
⚓  Running completion hooks...

✔  Successfully invoked generator for plugin: vue-cli-plugin-vuetify
   The following files have been updated / added:

     src/assets/logo.svg
     src/plugins/vuetify.js
     package.json
     public/index.html
     src/App.vue
     src/components/HelloWorld.vue
     src/main.js
     yarn.lock

   You should review these changes with git diff and commit them.

~/Doc/Pr/v/w/src/t  git  b7fe5  master
```

Let's add our UI widgets

```
  147 | </style>
  148 |


62 warnings found.
62 warnings potentially fixable with the `--fix` option.

You may use special comments to disable some warnings.
Use // eslint-disable-next-line to ignore the next line.
Use /* eslint-disable */ to ignore all warnings in a file.

  App running at:
  - Local:   http://localhost:8080/
  - Network: http://172.20.2.161:8080/

  Note that the development build is not optimized.
  To create a production build, run yarn build.

^C
~/Doc/Pr/v/w/src/t  git  b7fe5  master  yarn lint --fix
yarn run v1.7.0
$ vue-cli-service lint --fix
The following files have been auto-fixed:

  src/App.vue
  src/components/HelloWorld.vue
  src/main.js
  src/plugins/vuetify.js

 DONE  All lint errors auto-fixed.
✨  Done in 2.00s.
```

Let's add our UI widgets

```
~/Doc/Pr/v/w/src/t  git  b7fe5  master !?  yarn serve
yarn run v1.7.0
$ vue-cli-service serve
 INFO  Starting development server...
 98% after emitting CopyPlugin

 DONE  Compiled successfully in 13512ms


  App running at:
  - Local:   http://localhost:8080/
  - Network: http://172.20.2.161:8080/

  Note that the development build is not optimized.
  To create a production build, run yarn build.
```

Let's add our UI widgets

Review of Vuetify App

- Demo ...

Basic *.vue Component

```
<template lang="… | default is the Vue template syntax">
  <SomeComponentINeed></SomeComponentINeed>
</template>

<script lang="typescript | coffee | default is ES6">
 import <SomeComponentINeed>;

 export default {
  name: 'MyComponentName',
  props: [propName1, propName2, …],
  data: () => { return {stateVar1: initValue1, …} },
  computed: {propName: ()=> {return value}, …},
  methods: {methodName: () => {… do something …}},
  watch: {propName: (newValue, oldValue){… do something …}, …}
  lifecycleMethod1(){ … do something …}, …,
  components: {LocalCmpName: SomeComponentINeed, …}
 }
</script>

<style [scoped] lang="scss | stylus | less | default = plain css">
 …
</style>
```

A sneak peak!

- Our initial setup is now complete.
- Let's explore what we will ultimately build together!
  - Demo

But where do we start?

- That is a lot of functionality!
- Where do we start?
  - You get one 'gift':
    - Slides up to this point (for reference)
    - 'Starter' App.vue component file
- https://app.box.com/v/vue-workshop-cp1

Starting point app

- Let's look at the 'starter' App.vue file
  - Demo

Establish Baseline: Exercise

- Set up base app for workshop
  - Get starter files:
    - Replace App.vue using supplied file
    - Remove HelloWorld.vue
    - Run the app and ensure it looks like ...

Task Master

TASKS

Logged In User: your email address

Task List

Task 1

Task 2

Task 3

© 2018 [Your company name here]

Exercise: Initial Breakdown

- Break up monolithic Vue component into:
  - Main App component that will load and use three, top-level components:
    - Component for the NavBar
    - Component for Tasks
    - Component for Footer

Exercise: Further Breakdown

- Break up Tasks Vue component into:
  - Tasks component that will load and use the following components:
    - Component for the TaskListHeader
    - Component for TaskList

Exercise: Final Breakdown

- Break up TaskList Vue component into:
  - TaskList component that will load and use the TaskItem component for each Task
- Hints:
  - Create hard-coded array of strings representing task names stored in some component's state data.
  - Use v-for to iterate over that collection passing each string in the array as a prop to its own TaskItem component.

Checkpoint!

- You can download a copy of the current state of our app from here:
  - https://app.box.com/v/vue-workshop-check-2

Exercise: Extract Model

- Create a Task model class to represent tasks.
- Instances of Task will contain the following properties:
  - id: number (default: null)
  - name: string (default: '')
  - private: boolean (default: true)
  - complete: boolean (default: false)
  - createdAt: Date (default: new Date())
- Refactor your app to use your new model class.
  - For your 3 existing (new) Tasks, ensure you give them unique identifiers (0, 1 and 2, respectively).
  - Hard-coded for now is fine.

Let's add a task filter!

Exercise: Name Filter

- Add a TaskFilter component that looks like this:

- Filter appears below header and above list.
- Typing in the entry field will filter the tasks so only those containing the entered text will be displayed.
  - Clicking the clear button will clear the contents of the filter box and restore the entire list.
- Hints: New 'starter' file:
  - https://app.box.com/v/vue-workshop-task-filter-cmp

Let's make new Tasks!

Task List

Type here to filter Tasks

Clear

Task 1

Task 2

Task 3

Type the name for a new task and press <Enter> to create it.

Task List

Type here to filter Tasks

Clear

Task 1

Task 2

Task 3

My new task I am about to create...

Exercise: New Tasks

- Add a NewTask component that looks like this:

  Type the name for a new task and press <Enter> to create it.

- New component appears below the task list.
- Initially shows "Type the name for a new task and press <Enter> to create it" for a placeholder.
  - When the user types in the field and presses enter, create a new task (with sequential Id), and add it to the list by updating the state data. Also, set the initial collection of tasks to an empty array
  - After creating the task, clear the contents and set focus back to the new task entry field, ready for the user to enter the next one.
- Hints: New 'starter' file:
  - https://app.box.com/v/vue-workshop-new-task-cmp

Checkpoint!

- You can download a copy of the current state of our app from here:
  - https://app.box.com/v/vue-workshop-check-25

Exercise: Logging In

- Use the existing log in field that looks like this:

- When the user enters their username (email or anything else) into this field and hits <Enter>, store their username in some component's state.
- When the user clears the field and hits <Enter>, log the user out by setting that state data to null.
- Use that 'logged in status' to decide whether to show the NewTask component or not, only allowing logged in users to create new Tasks.

Exercise: Owning It!

- When a logged in user creates a Task, ensure they get credit for it!
  - Add an 'owner' property to the Task model and populate it with the username of the logged in user who creates it.
  - Display the owner's username in parenthesis following the name of the Task in the task list

Exercise: Losing It!

- Allow task owners to delete their tasks by clicking an 'x' displayed to the far-right of the owner's username in each task list entry.
- Only display the 'x' for tasks for which the logged in user is the owner.

Problem:
Passing the Buck

The shell game

- We have to pass 'username' around to virtually EVERY component in our system.
- Way to much chance for error and far too much boilerplate code to write.

Playing 'telephone'

- We have to manually propagate the 'delete' event all the way up from the inner-most component to the top-level component.
- Too much boilerplate and opportunity to err.

Solution:

Vuex

What is Vuex?

- A central 'store' for your application state.
- Data is 'safe'
  - No changes without sending notifications
  - Very predictable change management
- Easy access
  - Convenient accessing from any component

What is Vuex?

- Implements a 'one-way' data update flow
  - State is held in 'trust'
  - Views render a copy of that state.
  - Actions are 'dispatched'
    - From user interaction or external events.
    - Can result in API calls being made

What is Vuex?

- Implements a 'one-way' data flow (continued)
  - The 'store' reacts to those actions
    - Updates the data in the 'store'
    - Emits 'events' documenting the changes
  - The views are (partially) re-rendered based on the changes signaled by the events emitted by the store.

Backend API
Vuex
Dispatch
Actions
Commit
Vue Components
Mutations
Devtools
State
Render
Mutate

When should you use it?

- Quote from Dan Abramov (author of Redux):

  "Flux libraries are like glasses:
  you'll know when you need them"

Using Vuex

- Install Vuex
  - vue add vuex
- Configure vuex
  - Create a 'store' file
  - Similar to creating a Vue component
  - Import the 'store'
  - Tell Vue to use it

Installing Vuex

- Vuex is an official plug-in for Vue

```
~/Doc/Pr/v/w/src/t  git  2fa64  master  xxx   vue add vuex

🚀  Invoking generator for core:vuex...
📦  Installing additional dependencies...

yarn install v1.7.0
[1/4] 🔍  Resolving packages...
[2/4] 🚚  Fetching packages...
[3/4] 🔗  Linking dependencies...
[4/4] 📃  Building fresh packages...
success Saved lockfile.
✨  Done in 3.69s.
✔  Successfully invoked generator for plugin: core:vuex
   The following files have been updated / added:

     src/store.js
     package.json
     src/main.js
     yarn.lock

   You should review these changes with git diff and commit them.
```

Configure Vuex: store.js

```
import Vue from 'vue'
import Vuex from 'vuex'

Vue.use(Vuex)

export default new Vuex.Store({
  state: { // holds the actual state in ‘Trust’
    counter: 23, todos: [new Todo({…}), new Todo({…}), …]
  },
  mutations: { // updates the store directly. SYNCHRONOUS ONLY
    changeCounter(state, amount){state.counter = counter + amount}
  },
  getters: { // like computed props on a component
    doneTodos: (state, args) => {
      return state.todos.filter(todo => todo.done)
    }
  }
  actions: { // Can do async calls. Calls mutations via #commit
    increaseCounter: (context, amount) => {
      return context.commit(‘changeCounter’, amount)
    }
  }
})
```

Accessing the store

- inside a component
  - this.$store
- Outside a component
  - import store from '..../store';

Dispatching Actions

- Get hold of the store and call 'dispatch'

```js
actions: {
  increment ({ commit }) {
    commit('increment')
  }
}
```

```js
store.dispatch('increment')
```

Dispatching Actions

```js
actions: {
  incrementAsync ({ commit }) {
    setTimeout(() => {
      commit('increment')
    }, 1000)
  }
}
```

```js
// dispatch with a payload
store.dispatch('incrementAsync', {
  amount: 10
})

// dispatch with an object
store.dispatch({
  type: 'incrementAsync',
  amount: 10
})
```

Access state in components

```
import { mapState } from 'vuex'

export default {
  // ...
   computed: {
    count () {
      return this.$store.state.count
    }
  }
}

export default {
  // ...
  computed: mapState({
    count: state => state.count,
    countAlias: 'count',

    // Use a normal function to access local state with ‘this’
    countPlusLocalState (state) {
      return state.count + this.localCount
    }
  })
}
```

Access state in components

```
import { mapState } from 'vuex'

export default {
  // ...
  computed: {
    localComputed () { /* ... */ },
     // mix into the outer object with the object spread operator
     ...mapState({
    count: state => state.count,
    countAlias: 'count',

    // Use a normal function to access local state with ‘this’
    countPlusLocalState (state) {
      return state.count + this.localCount
    }
  })
}
```

Access state in components

```
import { mapState } from 'vuex'

export default {
  // ...
  computed: {
    localComputed () { /* ... */ },
    // map this.counter to store.state.counter
    // map this.tasks to store.state.tasks
    ...mapState([‘counter’, ‘tasks’])
}
```

Defining getters

```
const store = new Vuex.Store({
  state: {
    todos: [
      { id: 1, text: '...', done: true },
      { id: 2, text: '...', done: false }
    ]
  },
  getters: {
    doneTodos: state => {
      return state.todos.filter(todo => todo.done)
    },
    doneTodosCount: (state, getters) => {
      return getters.doneTodos.length
    },
    getTodoById: (state) => (id) => {
      return state.todos.find(todo => todo.id === id)
    }
  }
})
```

Accessing getters

```
import { mapGetters } from 'vuex'

export default {
  // ...
  computed: {
    // mix the getters into computed with object spread operator
    ...mapGetters([
      'doneTodosCount',
      'anotherGetter',
      // ...
    ])
  }

OR

  computed: {
    ...mapGetters({
     // map `this.doneCount` to `this.$store.getters.doneTodosCount`
    doneCount: 'doneTodosCount'
    })
  }

}
```

Accessing mutations

```
import { mapMutations } from 'vuex'

export default {
  // ...
  methods: {
    ...mapMutations([
      'increment',
       // map `this.increment()` to
          `this.$store.commit('increment')`

      // `mapMutations` also supports payloads:
      'incrementBy'
       // map `this.incrementBy(amount)` to
          `this.$store.commit('incrementBy', amount)`
    ]),
    ...mapMutations({
      add: 'increment'
       // map `this.add()` to
          `this.$store.commit('increment')`
    })
  }
}
```

Accessing Actions

```
import { mapActions } from 'vuex'

export default {
  // ...
  methods: {
    ...mapActions([
      'increment',
        // map `this.increment()` to
           `this.$store.dispatch('increment')`

      // `mapActions` also supports payloads:
      'incrementBy'
       // map `this.incrementBy(amount)` to
          `this.$store.dispatch('incrementBy', amount)`
    ]),
    ...mapActions({
      add: 'increment'
       // map `this.add()` to
          `this.$store.dispatch('increment')`
    })
  }
}
```

Defining Filters

```
import { mapActions } from 'vuex'

ex
```

Handling 2-way binding

```html
<input v-model="message">
```

```js
// ...
computed: {
  message: {
    get () {
      return this.$store.state.obj.message
    },
    set (value) {
      this.$store.commit('updateMessage', value)
    }
  }
}
```

Other considerations

- Prefer initializing your store's initial state with all desired fields upfront.
- When adding new properties to an Object in the store, you should either:
  - Use Vue.set(obj, 'newProp', 123), or
  - Replace that Object with a fresh one as in:

```js
state.obj = { ...state.obj, newProp: 123 }
```

Exercise: Store It!

- Add Vuex to your project
- Create a store in a new store file (root of proj)
- Move ‘username’, ‘nextId’, ‘tasks’, ‘newTask’ ‘filterString’ and ‘filteredTasks’ into Vuex store.
- Hints:
  - Download slides + state of app at this point
  - https://app.box.com/v/vue-workshop-third-check

Routing

Vue's core router

- Nested route/view mapping
- Modular, component-based router configuration
- Route params, query, wildcards
- View transition effects powered by Vue.js' transition system
- Fine-grained navigation control
- Links with automatic active CSS classes
- HTML5 history mode or hash mode, with auto-fallback in IE9
- Customizable Scroll Behavior

Installation

- Another core add-on:
  - vue add router (select ‘history’ mode!)

Installation

```
~/Doc/Pr/v/w/src/t  git  76569  master  vue add router
? Use history mode for router? (Requires proper server setup for index fallback in production) Yes

🚀  Invoking generator for core:router...
📦  Installing additional dependencies...

yarn install v1.7.0
[1/4] 🔍  Resolving packages...
[2/4] 🚚  Fetching packages...
[3/4] 🔗  Linking dependencies...
[4/4] 📃  Building fresh packages...
success Saved lockfile.
✨  Done in 3.46s.
✔  Successfully invoked generator for plugin: core:router
   The following files have been updated / added:

     src/router.js
     src/views/About.vue
     src/views/Home.vue
     package.json
     src/App.vue
     src/main.js
     yarn.lock

   You should review these changes with git diff and commit them.

~/Doc/Pr/v/w/src/t  git  76569  master !?
```

Group Exercise: Add Routing

- Demo

Persistence

GraphQL

- We will be using MongoDB to store our data

GraphQL basics

- What is GraphQL?
  - Language
  - Data standard
  - Open source project

GraphQL basics

- Let's look at our typical REST APIs:
  - Fixed schema/endpoints
    - Rigid, painful to add endpoints
  - Fixed data payloads
    - Many endpoints or conditional logic to accommodate various needs
    - Over-pulling data
    - Example: https://swapi.co/

GraphQL basics

- What can I do with it?
- How does it differ from typical REST APIs?
  - Easiest way to understand this is a demo
  - https://graphql.org/swapi-graphql/

What is Apollo?

- A set of tools and libraries which make it easy to work with GraphQL from within Javascript applications.
  - Apollo Boost: a project bootstrapper
  - Apollo-vue: a vue-specific wrapper around apollo making GraphQL easy to use with Vue.js.

Let's get started ...

- Add NPM dependencies
  - GraphQL/Apollo
  - Vue-Apollo

Create Apollo server

- Create server JS file
- Require in Apollo server, create instance
- Activate instance (start listening on port)
  - Default is port 4000

Basic Plumbing

- NPM additions:

```
"dependencies": {
  "vue": "^2.5.17",
  "vue-router": "^3.0.1",
  "vuetify": "^1.3.0",
  "vuex": "^3.0.1",

  "apollo-server": "^2.0.0-rc.7",
  "graphql": "^0.13.2"
},
"devDependencies": {
  "@vue/cli-plugin-babel": "^3.2.0",
  "@vue/cli-plugin-eslint": "^3.2.0",
  "@vue/cli-service": "^3.2.0",
  "@vue/eslint-config-prettier": "^4.0.0",
  "babel-eslint": "^10.0.1",
  "eslint": "^5.8.0",
  "eslint-plugin-vue": "^5.0.0-0",
  "less": "^3.0.4",
  "less-loader": "^4.1.0",
  "stylus": "^0.54.5",
  "stylus-loader": "^3.0.1",
  "vue-cli-plugin-vuetify": "^0.4.6",
  "vue-template-compiler": "^2.5.17",
  "vuetify-loader": "^1.0.5",

  "nodemon": "^1.18.1"
}
```

Basic Plumbing

- Add NPM script entry:

```
{
  "name": "taskmaster",
  "version": "0.1.0",
  "private": true,
  "scripts": {
    "server": "nodemon server.js",
    "serve": "vue-cli-service serve",
    "build": "vue-cli-service build",
    "lint": "vue-cli-service lint"
  },
  "dependencies": {
    "vue": "^2.5.17",
```

Basic Plumbing

- New server.js file:

```
const { ApolloServer, gql } = require("apollo-server

const todos = [
  { name: "wash car", completed: false },
  { name: "clean house", completed: true }
];

const typeDefs = gql`
  type Todo {
    name: String
    completed: Boolean
  }

  type Query {
    getTodos: [Todo]
  }
`;

const resolvers = {
  Query: {
    getTodos: function() {
      return todos;
    }
  }
};

const server = new ApolloServer({
  typeDefs,
  resolvers
});

server.listen().then(({ url }) => {
  console.log(`Server up and listening on ${url}`);
});
```

Try it out!

```
~/Doc/Pr/v/w/src_/t  git  4318c  graphql  npm run server

> taskmaster@0.1.0 server /Users/pavlovich/Documents/Presentations/
> nodemon server.js

[nodemon] 1.18.10
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node server.js`
Server up and listening on http://localhost:4000/
```

Navigate to http://localhost:4000

Deployment

zeit.co/now

- We will be using Now to host/deploy our app

WRAP UP!!!

Thank You!

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http://linkedin.com/in/peterpavlovich

https://github.com/pavlovich/vue-workshop

Resources

- Main site: http://www.Vue.js.org
- Add-ons:
  - Vuetify: https://vuetifyjs.com
  - Vuex: https://vuex.Vue.js.org
  - Router: https://router.Vue.js.org
  - Nuxt: https://nuxtjs.org
- Curated Lists:
  - https://curated.Vue.js.org
  - https://github.com/nuxt-community/awesome-nuxt
- New feeds:
  - https://www.Vue.jsradar.com
  - https://github.com/Vue.js/awesome-vue

Courses

- Udemy:
  - Anything by Max!
    - https://www.udemy.com/Vue.js-2-the-complete-guide
    - https://www.udemy.com/nuxtjs-Vue.js-on-steroids

Max's courses are awesome! Some graphics came from his courses.

Highly recommended!

Questions?