CIS 235 Rich Internet Applications - Winter 2025

W05 Lab: Advanced Components, Routing

(For the due date, please refer to this lab’s posting on Canvas)

Please leave the lab questions/instructions/rubrics/etc. in place. Just paste your screenshots and code below my instructions.

Purpose/knowledge/skills: Many professional Vue apps are created using slots, a command-line build, single-file components, and custom routing options. You’ll work with all three in this lab.

Task 1: Work with slots (10 points)

Steps to complete the task:

* 1. Open the file “slot-example.html” from the W05 lab files in Visual Studio and a web browser.
  2. Examine existing code, which demonstrates the use of two named slots.
  3. Modify the page to do any **two** of the following:
     1. Another-slot already displays text in the first instance of my-component. In the second instance of my-component, use another-slot to display your name.
     2. Create a new instance of my-component that displays today’s date as a string (such as “10/18/2023”).
     3. Create a third slot in the component definition and appropriate <template> to display the current year as a string (such as “2035”) in bright red text.
  4. Add comments near the top of the page to specify which two enhancements you created.
  5. Verify that the page displays as expected in a web browser. Debug as needed.
  6. When this works, take screenshots showing the changes and copy-and-paste your code below the rubric.

Rubric:

* Two enhancements: 6 points total, 3 points each
* Page works as expected: 4 points

Please paste a screenshot of a successful program run and copy-and-paste the text of your source code here:

|  |
| --- |
| Screenshot |
| + |
| Code text |
| <!DOCTYPE html>  <!-- [Praveena] [2/8/2025] -->  <!-- Enhancement 1: Use another-slot to display name -->  <!-- Enhancement 2: Create a new instance of my-component that displays today's date as a string' -->  <html>  <head>  <script src="https://unpkg.com/vue@3.2"></script>  </head>  <body>  <div id="app">  <my-component>  <template v-slot:my-component-content>  <p>Everyone needs to know about this!</p>  </template>  <template v-slot:another-slot>  <p>But this additional information is not that important.</p>  </template>  </my-component>  <my-component>  <template v-slot:my-component-content>  <p>And about this too!</p>  </template>  <template v-slot:another-slot>  <p>Praveena</p>  </template>  </my-component>  <my-component>  <template v-slot:default>  <p>**{{** new Date().toLocaleDateString() **}}**</p>  </template>  </my-component>  <my-component>  <template v-slot:year-slot>  <p style="color: red;">**{{** new Date().getFullYear() **}}**</p>  </template>  </my-component>  </div>  <script>  const MyComponent = {  template: `  <div>  <h1>Component Heading</h1>  <p><em>A Very Important Announcement!</em></p>  <hr />  <slot name="my-component-content"></slot> <!-- Text from HTML element is automatically inserted here -->  <slot name="another-slot"></slot> <!-- Text from HTML element is automatically inserted here -->  <slot name="year-slot"></slot> <!-- Text from HTML element is automatically inserted here -->  <slot></slot> <!-- Default slot -->  <hr />  </div>  `}  const { createApp } = Vue  var myApp = createApp({  components: { 'my-component': MyComponent },  data() {  return {  message: 'Hello World'  }  }  }).mount("#app");  </script>  </body>  </html> |

Task 2: Explore a create-vue project (10 points)

Steps to complete the task:

* 1. Open PowerShell.
     1. Click the start menu or search box.
     2. Type “PowerShell”
     3. Click the Windows PowerShell icon

The search will probably turn up other items, like “Developer PowerShell” and   
“PowerShell (x86)”. If you accidentally launch the wrong thing, close it and try again.

Advanced students please note, you do not need to “run as administrator” for this task.

* 1. Change directory to your desktop folder using the cd command.

For example, the instructor’s computer is cd C:\users\michael\Desktop

If you’re not sure how to get to the desktop folder:

Run these commands:

|  |
| --- |
| cd c:\Users  dir |

Your user name should be listed in the directories shown. If you’re on a SPSCC lab computer, the user name will include your student ID.

Run cd YourUserName\Desktop

For example, on the instructor computer, the commands are:

|  |
| --- |
| cd c:\Users\  dir  cd c:\mhaensel\Deskop |

* 1. Run the following commands in PowerShell:

|  |
| --- |
| npm init vue@3.2 |

Accept all default settings by pressing <enter> repeatedly.  
This will take several minutes to complete.

|  |
| --- |
| cd vue-project  npm install  npm run dev |

Your PowerShell window will look something like:

|  |
| --- |
| Graphical user interface, text  Description automatically generated |

* 1. Open a web browser.
  2. 5. Navigate to the URL shown in your PowerShell window. It will be something like:

|  |
| --- |
| http://localhost:XXXX |

where XXXX is the port number for your instance of vite.

* 1. Your browser will display something like:

|  |
| --- |
| A picture containing text  Description automatically generated |

* 1. Open the “vue-project” folder in Windows explorer.
  2. Examine the vue-project folders and files to answer the questions at the end of this task.

Rubric:

* Questions: 10 points total, 2 points each

QUESTIONS

1. Which file has the <div> where the vue app is mounted?

|  |
| --- |
| index.html |

1. In the src/components folder, which component displays “You’ve successfully created a project”?

|  |  |  |
| --- | --- | --- |
| HelloWorld.vue | WelcomeItem.vue | TheWelcome.vue |

1. Which folder contains the scalable **.svg** vue logo?

|  |  |  |  |
| --- | --- | --- | --- |
| src/components | src/assets | src/components/icons | public/ |

1. Which folder contains npm-imported modules for use in vue?

|  |  |  |
| --- | --- | --- |
| public/modules | src | node\_modules |

1. In your own words, describe what is in the README.md file.

|  |
| --- |
| In the README.md file states that the template is designed to help developers get started with Vue 3 in Vite. It recommends using Visual Studio Code along with the Volar extension. Instructions for setting up the project are provide, including running the command npm install to install the necessary dependencies. Instructions for compiling and hot-reloading the project for development (npm run dev). Instructions for compiling and minifying the project for production (npm run build). Overall, this files serves as a guide for setting up the development environment, customizing configuration. |

Task 3: Explore vue.js routes (10 points)

Steps to complete the task:

* 1. Open PowerShell.
  2. Change directory to your desktop folder using the cd command.
  3. Run the following commands in PowerShell:

|  |
| --- |
| npm init vue@3.2 my-router-project |

When asked, please add the Vue Router:

|  |
| --- |
|  |
| cd my-router-project  npm install  npm run dev |

Your PowerShell window will look something like:

|  |
| --- |
| Graphical user interface, text  Description automatically generated |

* 1. Open a web browser.
  2. Navigate to the URL shown in your PowerShell window. It will be something like:

|  |
| --- |
| http://localhost:XXXX |

where XXXX is the port number for your instance of vite.

* 1. Your browser will display something like:

|  |
| --- |
| Text, timeline  Description automatically generated |

* 1. Click the Home and About buttons to navigate to different vue components.
  2. Open the my-router-project folder in Windows explorer.
  3. Examine the my-router-project folders and files to answer the questions at the end of this task.

Rubric:

* Questions: 10 points total, about 2 points each

QUESTIONS

1. Where is the router folder located?

|  |  |  |  |
| --- | --- | --- | --- |
| .vscode | node\_modules | public | src |

1. Which file uses named slots?

|  |  |  |
| --- | --- | --- |
| WelcomeItem.vue | TheWelcome.vue | HelloWorld.vue |

1. Where is the <RouterLink> element used to create the Home and About buttons?

|  |  |  |
| --- | --- | --- |
| Index.js | App.vue | HelloWorld.vue |

1. What four components are used in this project? (Choose four)

|  |  |  |  |
| --- | --- | --- | --- |
| App.vue | HelloWorld.vue | TheWelcome.vue | WelcomeItem.vue |

1. What routes are defined in src/router/index.js? You can list either the path or the name.

|  |
| --- |
| src |

1. Where is the vue app created and mounted?

|  |  |  |  |
| --- | --- | --- | --- |
| Index.html | src/App.vue | src/main.js | src/components/Main.vue |

Task 4: Expand an existing vue project with slots and routes (20 points)

Steps to complete this task:

* 1. Create a backup copy of the my-router-project, so you can return to a clean copy at any time.
  2. Update the my-router-project to do **one** of the following:
     1. Add another route to the HomeView component
     2. Update the AboutView page by changing the contents of the AboutView component
     3. Add a third button that navigates to the AboutView or HomeView component
     4. A content-based enhancement of your choice
  3. Update the my-router-project to also do **one** of the following:
     1. Use a slot to insert text into one of the components
     2. Add a new .vue single-file component, and a route to reach that component
     3. Another router-based enhancement of your choice
  4. Add comments near the top of the file(s) to specify which two enhancements you created.
  5. Verify that the page displays as expected in a web browser. Debug as needed.
  6. When this works, take screenshots showing the changes and copy-and-paste your code below the rubric.

Rubric:

* Screenshot of web browser showing changes, may require multiple screenshots: 5 points
* Content-based enhancement: 5 points
* Slot- or router-based enhancement: 10 points
* Comment describing enhancements: -15 points if fails

Please paste a screenshot of a successful program run and copy-and-paste the text of your source code here:

|  |
| --- |
| Screenshot |
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|  |
| Code text |
| AboutView  <template>  <div class="about">  <h1>This is an about page Updated one</h1>  </div>  </template>  <style>  @media (min-width: 1024px) {  .about {  min-height: 100vh;  display: flex;  align-items: center;  }  }  </style>  HomeVew  <script setup>  import TheWelcome from '@/components/TheWelcome.vue'  </script>  <template>  <div>  <h1>Home View</h1>  <slot></slot> <!-- Add a slot here -->  </div>  </template>  NewRouteView  <script setup>  import TheWelcome from '@/components/TheWelcome.vue'  </script>  <template>  <div>  <h1>New Route View</h1>  <p>Welcome to the new route view!</p>  </div>  </template>  <script>  export default {  name: 'NewRouteView'  };  </script>  <style scoped>  /\* You can add styles specific to this component here \*/  </style>  <div id="app">  <h1>Hello App!</h1>  <p>  <router-link to="/">Go to Home</router-link>  <router-link to="/about">Go to About</router-link>  </p>  <!-- component matched by the route will render here -->  <router-view></router-view>  </div>  App.vue  <script setup>  import { RouterLink, RouterView } from 'vue-router'  import HelloWorld from './components/HelloWorld.vue'  </script>  <template>  <header>  <img alt="Vue logo" class="logo" src="@/assets/logo.svg" width="125" height="125" />  <div class="wrapper">  <HelloWorld msg="You did it!" />  <nav>  <Router-Link to="/">Home</Router-Link>  <Router-Link to="/about">About</Router-Link>  <Router-link to="/new-route">New Route</Router-link>  <router-view>  <template v-slot>  <p>This text is inserted into the slot of HomeView component.</p>  </template>  </router-view>  </nav>  </div>  </header>  </template>  <style scoped>  header {  line-height: 1.5;  max-height: 100vh;  }  .logo {  display: block;  margin: 0 auto 2rem;  }  nav {  width: 100%;  font-size: 12px;  text-align: center;  margin-top: 2rem;  }  nav a.router-link-exact-active {  color: var(--color-text);  }  nav a.router-link-exact-active:hover {  background-color: transparent;  }  nav a {  display: inline-block;  padding: 0 1rem;  border-left: 1px solid var(--color-border);  }  nav a:first-of-type {  border: 0;  }  @media (min-width: 1024px) {  header {  display: flex;  place-items: center;  padding-right: calc(var(--section-gap) / 2);  }  .logo {  margin: 0 2rem 0 0;  }  header .wrapper {  display: flex;  place-items: flex-start;  flex-wrap: wrap;  }  nav {  text-align: left;  margin-left: -1rem;  font-size: 1rem;  padding: 1rem 0;  margin-top: 1rem;  }  }  </style>  index.js  // [Praveena] [2/9/2025]  // Enhancement 1: Add another route to the HomeView component  // Enhancement 2: Use a slot to insert text into one of the components  import { createRouter, createWebHistory } from 'vue-router'  import HomeView from '../views/HomeView.vue'  const router = createRouter({  history: createWebHistory(import.meta.env.BASE\_URL),  routes: [  {  path: '/',  name: 'home',  component: HomeView  },  {  path: '/about',  name: 'about',  // route level code-splitting  // this generates a separate chunk (About.[hash].js) for this route  // which is lazy-loaded when the route is visited.  component: () => import('../views/AboutView.vue')  }  ]  })  export default router |