Open-Source Technology Use Report

Proof of knowing your stuff in CSE312

# Guidelines

Provided below is a template you must use to write your report for each of the technologies you use in your project.

Here are some things to note when working on your report, specifically about the **General Information & Licensing** section for each technology.

* **Code Repository**: Please link the code and not the documentation. If you’d like to refer to the documentation in the **Magic** section, you’re more than welcome to, but we’d like to see the code you’re referring to as well.
* **License Type**: Three letter acronym is fine.
* **License Description**: No need for the entire license here, just what separates it from the rest.
* **License Restrictions**: What can you *not* do as a result of using this technology in your project? Some licenses prevent you from using the project for commercial use, for example.
* **Who worked with this?**: It’s not necessary for the entire team to work with every technology used, but we’d like to know who worked with what.

Also, feel free to extend the cell of any section if you feel you need more room.

If there’s anything we can clarify, please don’t hesitate to reach out! You can reach us using the methods outlined on the course website or see us during our office hours.

# [react.js]

## General Information & Licensing

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| Code Repository | https://github.com/facebook/react |
| License Type | MIT License |
| License Description | * Commercial use is allowed * Modification is allowed * Distribution is allowed * Private use is allowed |
| License Restrictions | * There is no liability * There is no warranty regarding the program / project |
| Who worked with this? | Junwoo Park, Taylor Evans |

*Use as many of the sections below as needed, or create more, to explain every function, method, class, or object type you used from this library/framework.*

# [React from ‘react’]

## Purpose

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| * What does this tech do for you in your project?   Instead of using HTML template, the react frameworks enable developers to build dynamic web application with JavaScript eXtended (JSX), which incorporates HTML, Stylesheets, and Javascript into a single file. Unlike traditional DOM manipulation that costs lots of computing power and resources, react makes use of Virtual DOM (VDOM) to update only corresponding part of the webpage rendered.   * Where specifically is this tech used in your project? Give us some details like file location and line number, if applicable. If too cumbersome, a general description of where it’s used for a given purpose is fine as well.   Our team decided to use react to render all the page views and UI components, such as navigation bar. All the react components inside /frontend/src and /frontend/src/componets utilize react frameworks. Due to the modularized characteristics of the react, there are less redundant code bases which is often found from conventional web application using HTML template engine, including (EJS, pug, etc…). |

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| * How does this technology do what it does for you in the **Purpose** section of this report? Please explain this in detail, starting from after the TCP socket is created. Remember, to be allowed to use a technology in your project, you must be able to know how it works.   In pure technological perspective, the compiled react application consists of static files, index.html as app’s entry point along with chunk.js and style.css. However, the development process differs from traditional web development. Unlike typical frontend side stack including HTML, CSS and Javascript, react uses special syntax called ‘jsx’ that integrates all the three different stacks into single jsx file. Given the single-entry html file, the entire app is mounted on the top of designated ‘div’ element of the index.html file. Since the html file and associated static files are loaded, rest of the app logic is purely based on the Javascript logic, chunk .js. Thanks to this logic, the App uses VDOM to update its component, simulate frontend side routing, dynamic rendering based on the changes of the component (App) state.   * Where is the specific code that does what you use the tech for? You ***must*** provide a link to the specific file in the repository for your tech with a line number or number range.   + All the react components: /frontend/src/App.jsx and views & UI components under /frontend/src/components use react. All the corresponding components have .jsx format to indicate the file is coded as react component. The react library changes class & functional object into the react component with either inherent react life cycle or logics that mimic the life cycle by using series of methods called ‘react hooks’.   \*This section may grow beyond the page for many features. |

# [ReactDOM from ‘react-dom’]

## Purpose

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| Replace this text with some that answers the following questions for the above tech:   * There is only one file that uses ReactDOM and it’s located in /frontend/src/index.js. This file mount the entire react project on index.html which is the entry point to the users. |

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| Dispel the magic of this technology. Replace this text with some that answers the following questions for the above tech:   * ReactDOM simply mounts entire compiled react package on the top of designated ‘div’ element inside index.html. * Where is the specific code that does what you use the tech for? You ***must*** provide a link to the specific file in the repository for your tech with a line number or number range.   + The file called index.js under /frontend/src uses ReactDOM to mount react web application to the index.html which is the entry point of the entire web app.   + Once the app is mounted, react web app runs its own cycle throughout the app’s runtime.   \*This section may grow beyond the page for many features. |

# [{useState} from ‘react’]

## Purpose

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| Replace this text with some that answers the following questions for the above tech:   * This function is one of the react hooks that add react life cycle to the functional component in react. * Functional style component that needs state with react life cycle needs this function since pure component does not have any states or the life cycle. Since our app makes use of functional style components, all the components under the /frontend/src/components import this function. |

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| Dispel the magic of this technology. Replace this text with some that answers the following questions for the above tech:   * For example, in the Login page view, there are two states: Login and Registration. Unlike conventional approach where there should be two separate pages built to render Login and Registration pages, react can simply update the part of the page by changing the component’s state. * Where is the specific code that does what you use the tech for? You ***must*** provide a link to the specific file in the repository for your tech with a line number or number range.   + At the moment of writing this document, there is only one component uses this method and its under /frontend/src/components/Login directory.   \*This section may grow beyond the page for many features. |

# [Left here for future usage]

## Purpose

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| Replace this text with some that answers the following questions for the above tech:   * What does this tech do for you in your project? * Where specifically is this tech used in your project? Give us some details like file location and line number, if applicable. If too cumbersome, a general description of where it’s used for a given purpose is fine as well. |

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| Dispel the magic of this technology. Replace this text with some that answers the following questions for the above tech:   * How does this technology do what it does for you in the **Purpose** section of this report? Please explain this in detail, starting from after the TCP socket is created. Remember, to be allowed to use a technology in your project, you must be able to know how it works. * Where is the specific code that does what you use the tech for? You ***must*** provide a link to the specific file in the repository for your tech with a line number or number range.   + If there is more than one step in the chain of calls *(hint: there will be)*, you must provide links for the entire chain of calls from your code, to the library code that actually accomplishes the task for you.   + Example: If you use an object of type HttpRequest in your code which contains the headers of the request, you must show exactly how that object parsed the original headers from the TCP socket. This will often involve tracing through multiple libraries and you must show the entire trace through all these libraries with links to all the involved code.   \*This section may grow beyond the page for many features. |