

Research Document

On JavaScript framework selection

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Student number: 3870707

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Introduction

At the start of my individual project, it was made known to me that I would require a JavaScript framework which would manage all Front-end activities, being that there are a lot which have the basic similarities and I would have to choose one of the frameworks that would best serve my project idea, the creation of a research document is required.

Criteria for choosing my JavaScript framework:

- Ease of learning
- Performance
- Completeness of framework
- Popularity
- High status in creating chat rooms
- Helpful community base

JavaScript Framework Descriptions:

The decision for choosing a framework started off with filtering all known JavaScript frameworks to the most popular and widely used by developers. These frameworks are Angular, React, and Vue, and below gives a quick description about the individual frameworks:

Angular:

Angular is a framework based on TypeScript, which helps in saving time catching errors and providing fixes to one's code before it is run, according to the official website about TypeScript given by Angular: "TypeScript provides a way to validate your code is working correctly by using types to describe the shape of an object thus providing better documentation" (Microsoft, 2010).

React:

React is a JavaScript framework which bases its application on the use of components namely Class components and Functional components which work with JavaScript principles. Also, with the use of JSX which is an XML syntax inputted data can be passed into components and easily rendered. (Facebook, 2013).

Vue:

Vue is a JavaScript framework which is widely known for being easy to understand and use as a new developer, being that it mainly focuses on the view layer only.

Unlike the other two popular frameworks React and Angular, Vue is not backed by a huge corporation but instead by a community of developers.

It takes a lot of inspiration from React and some from Angular but makes the concepts taken a lot easier to use.

(Flaviocopes, 2018).

Features and Comparison of JavaScript framework selections

Angular

Benefits of Angular:

- Ideal for larger complex projects with significant future expansion plan
- With its use of type script, this helps for angular developers to spot bugs easier rather than in other frameworks.
- Writing code with angular you are ensured that the coding style will be consistent unlike a framework like react which has two ways of creating and working with components
- Angular provides better security and higher code quality by having a preconfigured environment at setup so rarely the need for introducing third party libraries

Drawbacks of Angular:

- Needs sound knowledge of JavaScript to build large-scale applications
- Uses TypeScript (which takes time getting to know)
- The creation of web application with angular might be bad for end users that do not have JavaScript installed in their OS being that Angular requires you to have JavaScript.
- Its learning curve takes a long time to properly understand.

React

Benefits of React:

- React is backed by a huge community base, which enables problem solving to be easier.
- Its application of components, makes coding with react easier being that you can re-use these components if some code you require is in a component you have created before
- Its use of JSX which is a combination of JavaScript and Html makes coding easier and faster being that you would not have to learn a new method like using Typescript in Angular
- Lots of resources to learn from.
- The use of JavaScript.

Drawbacks of React:

- It has a really large library size so it can be quite difficult to get use to their uses.
- Due to react constantly having updates, documentation for react easily goes out of date, thus developers find it difficult to update themselves in a short time span.
- Due to react using client-side rendering search engines like Google find it hard/poorly index dynamic web pages which react produces.

Vue

Benefits:

- Detailed documentation helps with quick learning curve.
- Easy to learn
- Very small actual size makes for better performance.

Drawbacks:

- Lack of support for large scale projects.
- Limited resources.
- Lack of experienced developers using it due to it being a relatively young technology

Table of comparisons

	Angular	React	Vue
Ease of learning	Has a steep learning curve	Easy to learn, especially for developers with little frontend experience	Easy to learn due to its flexible nature
Performance	Good	Varies, due to its client-side rendering	Tiny size and very good at scaling
Completeness of framework	Has a complete framework	Framework Undergoes constant updates	Fully-fledged
Popularity/Community base	Popular and well-used	Popular and has a large community base	Less popular amongst high level web developers
Application in handling and creating chat rooms/messaging platforms	Not used mainly for chat rooms	Has a high popularity in making media related applications e.g Reddit, Facebook, Netflix	Commonly used for design web apps

General conclusion:

After an extensive research and practise of tutorials on each individual framework, I came to the conclusion that react would be serve my Individual project, being that it has a good management system for media related web applications and thus its community base is large which would enable easily find out information if I do get stuck while using react.

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