

React vs. Angular vs. Vue •
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Qom Open Source Community •


Basic Question?

- Which framework should I choose?
- Is Angular better than React?
- Vue is better?
- What I should learn?
- I try to answer some of these questions...






Advanced Question?

- What are the **basic programming concepts** of the frameworks?
 - How easy is it to use the frameworks **for small or large applications**?
 - What does the **learning curve** look like for each framework?
 - What kind of **performance** can you expect from the frameworks?
 - Ready, set, GO!
- 




Angular History

- **Angular** is a TypeScript-based Javascript framework.
 - Developed and maintained by Google
 - Angular (also “Angular 2+”, “Angular 2” or “ng2”) is the rewritten, mostly incompatible successor to AngularJS (also “Angular.js” or “AngularJS 1.x”)
 - Released in October 2010
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Angular History

- The newest major release is version 5, Older version is 4 and version 3 was skipped.
 - Angular is used by Google, Wix, weather.com, healthcare.gov and Forbes
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Angular 2 or above

- Benefit
 - Modularity
 - Dependency Injection
 - Routing
 - Validation
 - TypeScript(like C#, like Java)
 - Clear separation between HTML an TypeScript
- 





Angular 2 or above

- Disadvantages
 - Angular feature can confusing for newcomers
 - Backward Compatibility (new release breaking change)
 - TypeScript (for java script background)
- 




React History

- **React** is described as “*a JavaScript library for building user interfaces*”.
 - Initially released in March 2013
 - React was developed and is maintained by Facebook
 - React components on several pages
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React History

- React is also used by Airbnb, Uber, Netflix, Twitter, Pinterest, Reddit, Udemy, Wix, Paypal, Imgur, Feedly, Stripe, Tumblr, Walmart and others
 - React Fiber was released with React 16 in September 2017.
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React

- Benefit
 - Support by Facebook
 - JSX (Mixing java script and HTML)
 - Active Community
 - Many Package
 - Easy to use
 - Like React native

```
const element = (  
  <div>  
    <h1>Hello!</h1>  
    <h2>Good to see you here.</h2>  
  </div>  
)  
;
```


React

- Disadvantage
 - JSX (can't use normal HTML)
 - Add extra router
 - Add extra form validation

```
const element = (  
  <h1 className="greeting">  
    Hello, world!  
  </h1>  
);
```





Vue History

- Vue describes itself as a “*Intuitive, Fast and Composable MVVM for building interactive interfaces.*”
 - **Vue** is one of the most rapidly growing JS frameworks in 2016.
 - It was first released in February 2014 by ex-Google-employee Evan You
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Vue History

- It's been quite a success, especially given that Vue is getting so much traction as a one-man show without the backing of a big company.
 - In 2016, version 2 was released.
 - Vue is used by Alibaba, Baidu, Expedia, Nintendo, GitLab
- 




Vue

- Benefit
 - Great Idea from angular and react
 - Use ES5 and ES6
 - Separation template and java script code
 - Normal HTML and Normal CSS
 - Easy to learn, Easy to use
 - Router is provided
 - Great Communication
 - A Great Documentation
- 



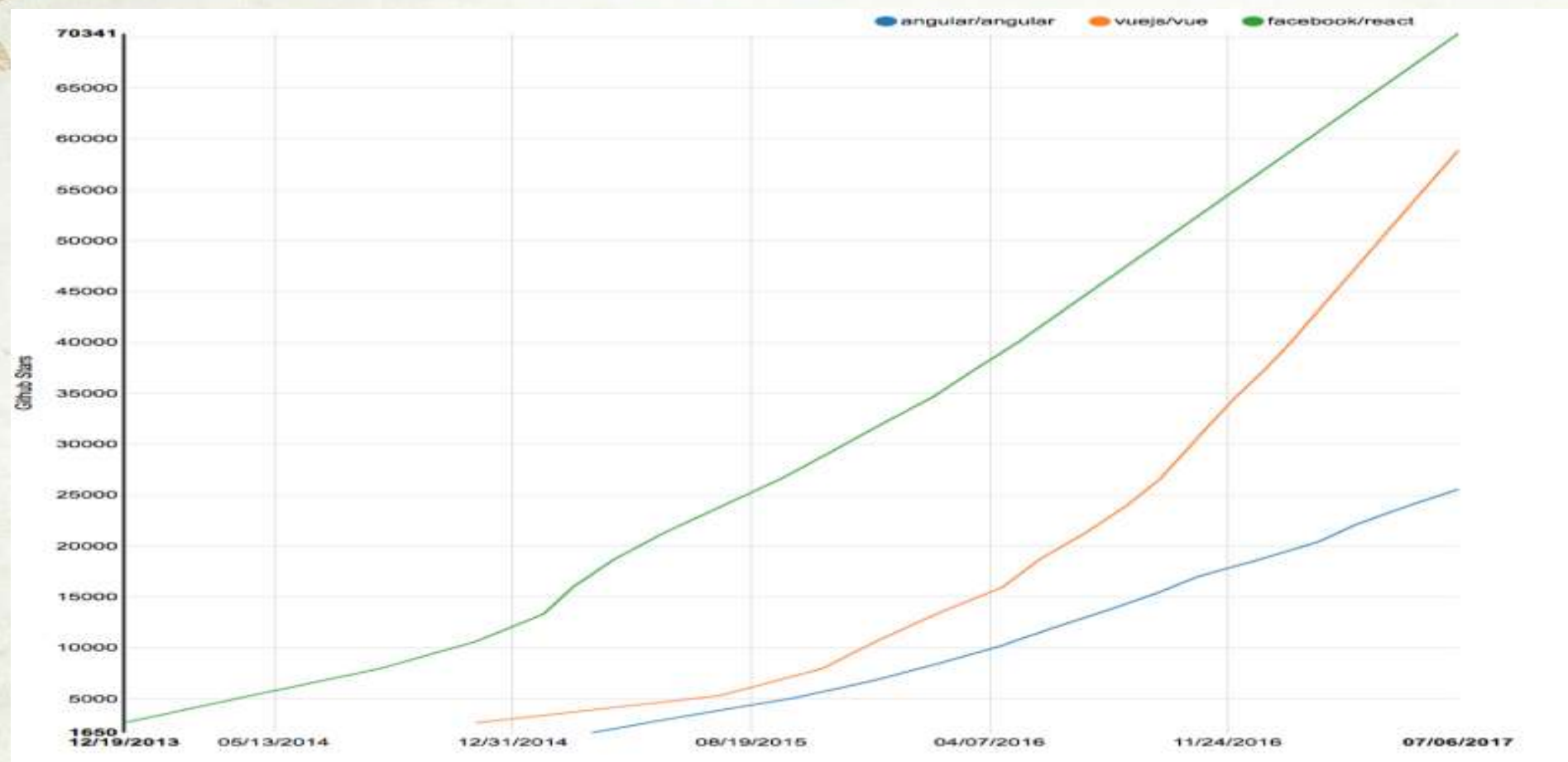
Vue

- Disadvantage
 - Is New
 - Lack dependency injection
 - Don't use by a great company
 - Less job
- 



Comparison of React, Angular & Vue

GitHub Star



NPM Trends

angular vs react vs vue vs @angular/core

Enter an npm package...

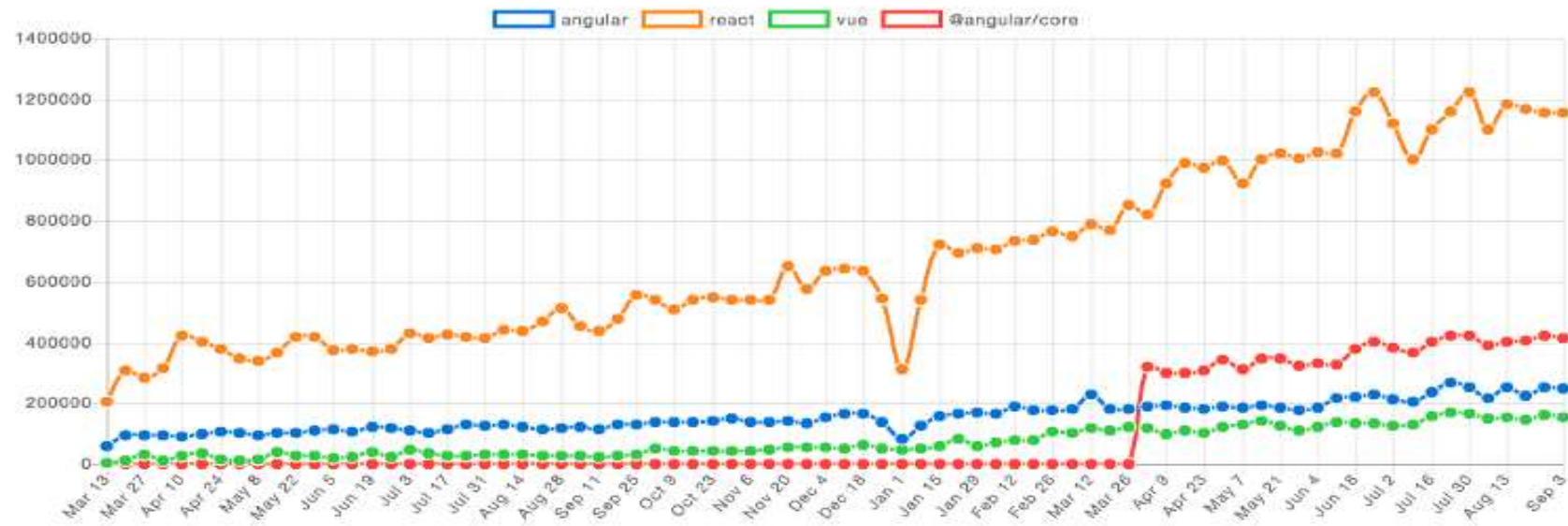
angular x

react x

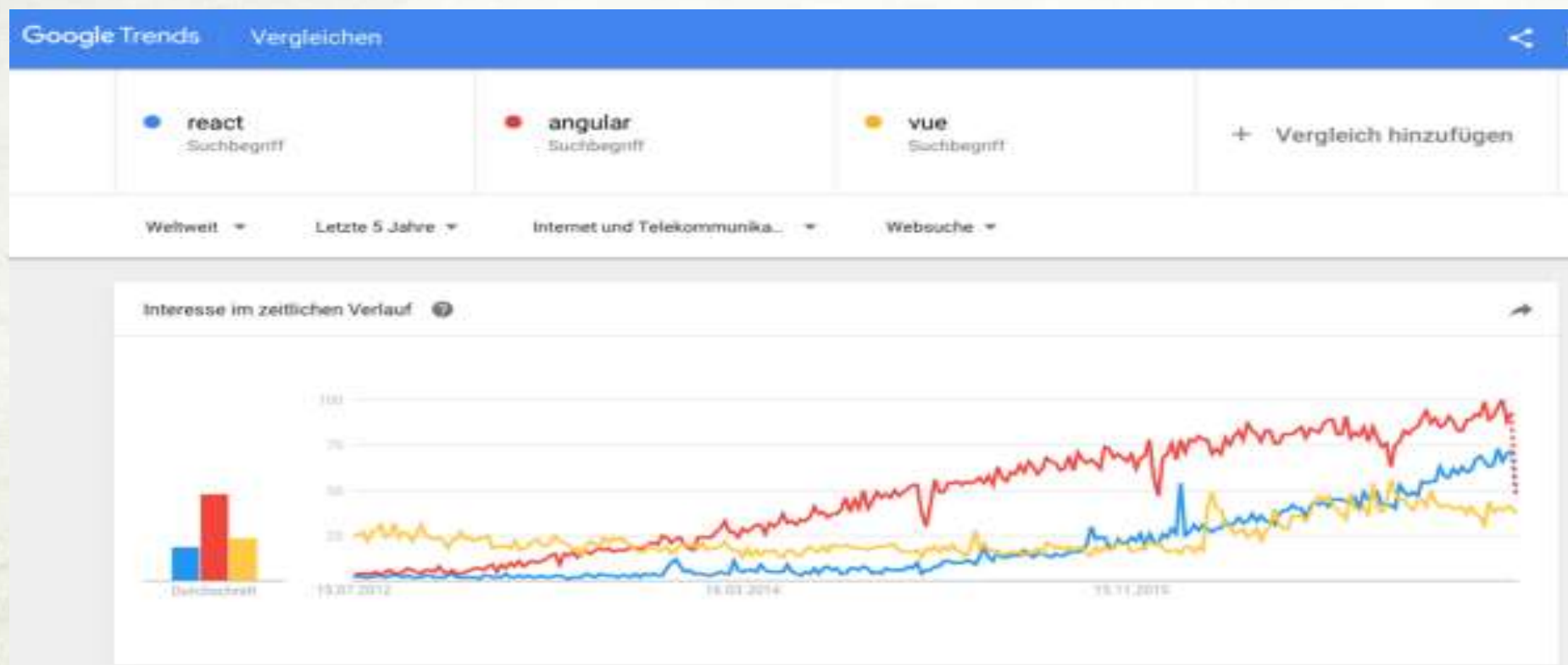
vue x

@angular/core x

Downloads in past 2 Years ▾




Google Trends





Components

- The frameworks in question are all component-based.
 - The defined components should be easy to reuse on the webpage or within other components.
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TypeScript vs. ES6 vs. ES5


- React focuses on the use of Javascript ES6. Vue uses Javascript ES5 or ES6. Angular relies on **TypeScript**.
- TypeScript also introduces concepts like decorators and static types. Static types are useful for code intelligence tools, like automatic refactoring, jump to definitions, etc.
- TypeScript adds a lot of (learning) overhead to projects

Templates — JSX or HTML

- React breaks with long-standing best practices. For decades, developers were trying to separate UI templates and inline Javascript logic, but with JSX, these are intermixed again.
- JSX is a big advantage for development, because you have everything in one place, and code completion and compile-time checks work better.
- *“Angular 2 continues to put ‘JS’ into HTML. React puts ‘HTML’ into JS.”*. This is a good thing, because Javascript is more powerful than HTML.




Framework vs. library

- Angular is a framework rather than a library because it provides strong opinions as to how your application should be structured and also has more functionality out of the box. Angular is a “complete solution.
 - React and Vue, on the other hand, are universally flexible. Their libraries can be paired to all kinds of packages.
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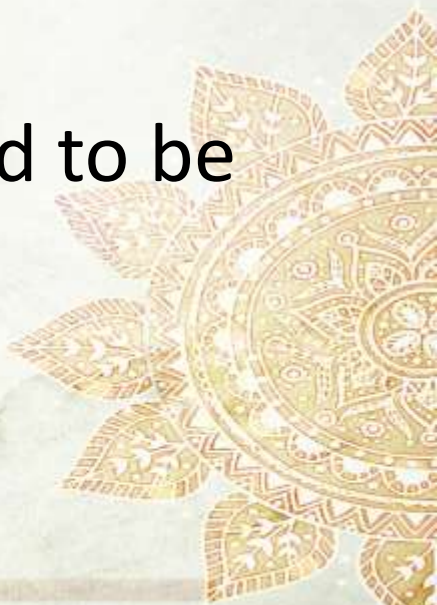


Other programming concepts

- The model-view-controller pattern (MVC) splits a project into three components: model, view and controller. Angular as an MVC-framework has MVC out of the box. React only has the V — you need to solve the M and C on your own.
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Flexibility & downsizing to microservices


- You can work with React or Vue by simply adding the Javascript library to the source code. This is not possible with Angular because of its use of TypeScript.
 - Angular work best for SPA, as it is probably too bloated to be used for microservices.
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Long-term support & migrations- React

- React APIs are quite stable, as Facebook states in their design principles. There are also some scripts to help you move from your current API to a newer one.
- Migrations are quite easy and there is no such thing (needed) as a long-term-support version.
- When they add a deprecation warning, they keep it for the rest of the current release version before the behavior is changed in the next major version.




Long-term support & migrations - Angular

- There will be one major update every six months, and there will be a deprecation period of at least six months (two major releases).
 - Angular team has announced **long-term-support versions starting with Angular 4.**
 - This means Angular 4 will be supported until at least **September 2018** with bug-fixes and important patches.
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Long-term support & migrations - Vue

- The update process for Vue 1.x to 2.0 should be easy for a small app — the developer team has asserted that 90% of the APIs stayed the same.
 - There is no clear (public) roadmap about the next major version or information on plans for LTS versions.
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What should I choose?

- If you love TypeScript: **Angular (or React)**
 - If you love object-orientated-programming (OOP): **Angular**
 - If you need guidance, structure and a helping hand: **Angular**
 - If you like flexibility: **React**
 - If you love big ecosystems: **React**
 - If you like choosing among dozens of packages: **React**
 - If you love JS & the “everything-is-Javascript-approach”: **React**
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What should I choose?

- If you like really clean code: **Vue**
- If you want the easiest learning curve: **Vue**
- If you want the most lightweight framework: **Vue**
- If you are working alone or have a small team: **Vue (or React)**
- If your app tends to get really large: **Angular (or React)**
- If you want to build an app with react-native: **React**
- If you want to have a lot of developers in the pool: **Angular or React**
- If you work with designers and need clean HTML files: **Angular or Vue**



THE END & Thanks.