

IEEE ZAGAZIG BRANCH-CS

OPINION ON JAVASCRIPT FRAMEWORKS

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There are many frontend frameworks. every one try to solve some problem or not (some are reduntant) but generally that is why they exist (probably also because of market as they have to make new ones to keep frontend developers constantly learning so they stay in business). Anyway as I have to learn a framework that would be Vue as it is built to be fast and also no company is pushing it like react & Facebook. Vue also has a nice feature it is extermely lightweight in fact that is why it was made in the first place. I personally don't have enough experience to recommend or to decide what is the best but Vue is used a lot, it is the second one after react.

Memory allocation in MBs \pm 95% confidence interval

Name	angular- v8.0.1- keyed	react- v16.8.6- keyed	vue- v2.6.2- keyed
ready memory Memory usage after page load.	4.8 \pm 0.0 (2.22)	2.2 \pm 0.0 (1.03)	2.2 \pm 0.1 (1.00)
run memory Memory usage after adding 1000 rows.	9.2 \pm 0.0 (1.34)	6.9 \pm 0.0 (1.00)	7.0 \pm 0.0 (1.03)
update eatch 10th row for 1k rows (5 cycles) Memory usage after clicking update every 10th row 5 times	9.5 \pm 0.0 (1.28)	8.0 \pm 0.0 (1.08)	7.4 \pm 0.0 (1.00)
replace 1k rows (5 cycles) Memory usage after clicking create 1000 rows 5 times	9.8 \pm 0.1 (1.29)	8.8 \pm 0.0 (1.15)	7.6 \pm 0.0 (1.00)
creating/clearing 1k rows (5 cycles) Memory usage after creating and clearing 1000 rows 5 times	6.5 \pm 0.0 (1.75)	4.6 \pm 0.0 (1.25)	3.7 \pm 0.0 (1.00)
slowdown geometric mean	1.54	1.10	1.01

Startup metrics (lighthouse with mobile simulation)

Name	angular- v8.0.1- keyed	react- v16.8.6- keyed	vue- v2.6.2- keyed
consistently interactive a pessimistic TTI - when the CPU and network are both definitely very idle. (no more CPU tasks over 50ms)	2,703.7 ± 0.4 (1.24)	2,353.2 ± 0.5 (1.08)	2,177.5 ± 0.3 (1.00)
script bootstrap time the total ms required to parse/compile/evaluate all the page's scripts	52.0 ± 70.5 (3.25)	16.0 ± 0.0 (1.00)	16.0 ± 0.0 (1.00)
total kilobyte weight network transfer cost (post-compression) of all the resources loaded into the page.	295.5 ± 0.0 (1.40)	260.7 ± 0.0 (1.24)	211.0 ± 0.0 (1.00)
slowdown geometric mean	1.78	1.10	1.00

Duration in milliseconds \pm 95% confidence interval (Slowdown = Duration / Fastest)

Name Duration for...	angular- v8.0.1- keyed	react- v16.8.6- keyed	vue- v2.6.2- keyed
create rows creating 1,000 rows	123.0 \pm 3.8 (1.00)	137.4 \pm 3.7 (1.12)	136.9 \pm 3.0 (1.11)
replace all rows updating all 1,000 rows (5 warmup runs).	115.6 \pm 1.4 (1.07)	108.7 \pm 1.6 (1.00)	108.3 \pm 1.5 (1.00)
partial update updating every 10th row for 1,000 rows (3 warmup runs). 16x CPU slowdown.	114.0 \pm 5.2 (1.00)	136.7 \pm 3.6 (1.20)	200.1 \pm 6.0 (1.76)
select row highlighting a selected row. (5 warmup runs). 16x CPU slowdown.	26.0 \pm 2.5 (1.00)	30.4 \pm 3.5 (1.17)	116.7 \pm 17.1 (4.50)
swap rows swap 2 rows for table with 1,000 rows. (5 warmup runs). 4x CPU slowdown.	337.7 \pm 2.6 (4.89)	344.5 \pm 4.5 (4.98)	69.1 \pm 6.2 (1.00)
remove row removing one row. (5 warmup runs).	36.4 \pm 0.6 (1.00)	39.7 \pm 0.5 (1.09)	44.8 \pm 1.7 (1.23)
create many rows creating 10,000 rows	1,211.7 \pm 30.2 (1.04)	1,443.8 \pm 36.0 (1.24)	1,161.5 \pm 38.2 (1.00)
append rows to large table appending 1,000 to a table of 10,000 rows. 2x CPU slowdown	247.5 \pm 7.8 (1.00)	263.5 \pm 4.0 (1.06)	255.8 \pm 3.3 (1.03)
clear rows clearing a table with 1,000 rows. 8x CPU slowdown	232.5 \pm 13.7 (1.90)	122.4 \pm 4.4 (1.00)	135.3 \pm 3.7 (1.11)
slowdown geometric mean	1.30	1.31	1.32