The tool I used was Flow, which is an open-source static type checker for JavaScript from Facebook. It allows static type checking on JavaScript with little to none type annotations. The tool also has a Visual Studio Code extension that is running automatically when you work on a JavaScript code.

I set up the Flow tool on Linux Mint OS using yarn package manager for the tests. The installation process was minimal. I did need a JavaScript compiler called Babel, since vanilla JavaScript does not support type annotations by default. Afterwards, the source code with type annotations compiled into a compatible vanilla JavaScript when running Babel. I utilized Flow on a popular package called Prettier, which is a library used in code bases where the style of the code is auto formatted to a specific one. Then, Flow was used on a new web framework called Fastify, which is a library that is faster and has lower overhead over the most popular web frameworks like Express.

When running Flow on Prettier, I found an odd false positive where Flow stated that it found an error in the code. The error stated that /* : */ is an unexpected token. The reason that this is a false positive is because /* */ is a multi-line comment in JavaScript and it should ignore anything in the middle of the two comment tokens. I have tested this with other symbols inside and it seemed to only be happening with the colon symbol. Besides the false positive it found no other errors in Prettier's code.

When running Flow on Fastify, my terminal froze and then my Linux computer froze up. Due to this, I was unable to tell if it found any errors or not. I had to force shutdown my laptop to recover from the freeze. Instead, I ran Flow on Express and it found 2238 errors with the code in

21.87 seconds. Most of the errors required the user to put type annotations and others, were false alarms on how functions are exported in the node modules.

Lastly, I used the Flow extension in Visual Studio Code called Flow Language Support. In Visual Studio Code, it shows any errors Flow finds as you are working on code. It also shows the Flow's type coverage percentage of the code and where in the code it needs type annotations. The response time of the extension is very minimal. As I type the code and save it, the extension shows the errors right away.

To summarize, Flow was very easy to install and only had some issues like crashing of an OS and one odd false positive. I would recommend this tool to be used on a large JavaScript code base that would require too much time and effort to convert to TypeScript, but still wanted some level of static type checking.