React Compiler

What it is

React Compiler is a new experimental compiler that we've open sourced to get early feedback from the community. It is a build-time only tool that automatically optimizes your React app. It works with plain JavaScript, and understands the Rules of React, so you don't need to rewrite any code to use it.

What it does

React lets you express your UI as a function of their current state (more concretely: their props, state, and context). In its current implementation, when a component's state changes, React will re-render that component and all of its children — unless you have applied some form of manual memoization with useMemo(), useCallback(), or React.memo().

the simplified c function

```
import { useState } from "react";

export function c(size) {
  return useState(() => new Array(size))[0];
}
```

the c function

```
25 ••• export function c(size: number) {
26       return React.useState(() => {
27         const $ = new Array(size);
28         for (let ii = 0; ii < size; ii++) {
29           $[ii] = $empty;
30         }
31         // This symbol is added to tell the react devtools that this array is from
32         // useMemoCache.
33         // @ts-ignore
34         $[$empty] = true;
35         return $;
36       })[0];
37     }
```

Meta (Facebook, IG, …) REPLs (Read Evaluate Print Loop)

- https://playground.react.dev/#N4Igzg9grgTgxgUxALhAgHgBwjALgAgBMEAzAQygBsCSoA7OXASwjvwFkBPAQU0wAoAlPmAAdNvhgJcsNgB5CTAG4A+ABIJKlCPgDqOSoTkB6

How to start

- Follow React Rules
- use strict mode
- Appy react compiler eslint rule
- Compiler will detect files it can’t optimize and use transpiler (not always)

https://react.dev/learn/react-compiler

Sources

- https://react.dev/learn/react-compiler
- https://jherr2020.medium.com/react-compiler-with-react-18-1e39f60ae71a
- https://www.youtube.com/watch?v=PYHBHK37xlE
    - https://github.com/jherr/compiler-repl