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| --- |
| ­­  let sum=0;  const calc=(n)=> {  for(let i=0;i<=n;i++)  sum += i;  }  console.time();  console.log(calc(6));  console.timeEnd();  output:  gauravraj@Gauravs-MacBook-Pro ~ % node memo.js  21  default: 3.834ms |

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| --- |
| let sum=0;  const calc=(n)=> {  for(let i=0;i<=n;i++){  sum+=i;  }  return sum;  }  const memoize=(fun)=>{  let cache={};  return function(...args){  let n=args[0];  if (n in cache){  console.log("cache");  return cache[n];  }else{  console.log("calculating first time");  let result= fun(n);  cache[n]= result;  return result;  }  }  }  console.time();  const efficient=memoize(calc);  console.log(efficient(6));  console.timeEnd();  console.time();  console.log(efficient(6));  console.timeEnd();    output:  calculating first time  21  default: 3.044ms  cache  21  default: 0.034ms |
| useMemo  import React, { useState, useMemo } from 'react';  const UserComponent = () => {  // State for user information  const [firstName, setFirstName] = useState('Gaurav');  const [lastName, setLastName] = useState('Raj');  // useMemo to memoize the full name  const fullName = useMemo(() => {  console.log('Calculating full name...');  return `${firstName} ${lastName}`;  }, [firstName, lastName]); // Dependencies: recalculates only if firstName or lastName change  return (  <div>  <h2>User Information</h2>  <p>  <strong>First Name:</strong> {firstName}  </p>  <p>  <strong>Last Name:</strong> {lastName}  </p>  <p>  <strong>Full Name:</strong> {fullName}  </p>  </div>  );  };  export default UserComponent; |