AI Powered Code-Review and Testing

Language: javascript

Your Code:

```javascript
class User {
  constructor(name, age) {
    this.name = name;
    this.age = age;
  }

  isAdult() {
    return this.age >= 18;
  }
}

function greetUser(user) {
  if (!(user instanceof User)) {
    throw new Error("Invalid user object");
  }

  if (user.isAdult()) {
    console.log(`Hello, ${user.name}. You are an adult.`);
  } else {
    console.log(`Hi, ${user.name}. You are not an adult yet.`);
  }
}

try {
  const alice = new User("Alice", 22);
  greetUser(alice);

  const bob = new User("Bob", 15);
  greetUser(bob);

  greetUser({ name: "Eve", age: 30 });
} catch (error) {
  console.error("Caught an error:", error.message);
}
```

Code Review:

The code is well-optimized and follows best practices. No improvements are necessary.

Generated Tests:

```javascript
import { describe, it } from "mocha";
import { expect } from "chai";
import sinon from "sinon";

// Embed the provided code
class User {
  constructor(name, age) {
    this.name = name;
    this.age = age;
  }

  isAdult() {
    return this.age >= 18;
  }
}

function greetUser(user) {
  if (!(user instanceof User)) {
    throw new Error("Invalid user object");
  }

  if (user.isAdult()) {
    console.log(`Hello, ${user.name}. You are an adult.`);
  } else {
    console.log(`Hi, ${user.name}. You are not an adult yet.`);
  }
}

// Unit Tests
describe('User Class and greetUser Function Tests', () => {

  it('should greet an adult user appropriately', () => {
```

```javascript
    const user = new User("Alice", 22);
    const consoleLogSpy = sinon.spy(console, 'log');
    greetUser(user);
    expect(consoleLogSpy.calledWith('Hello, Alice. You are an adult.')).to.be.true;
    consoleLogSpy.restore();
  });


  it('should greet a minor user appropriately', () => {
    const user = new User("Bob", 15);
    const consoleLogSpy = sinon.spy(console, 'log');
    greetUser(user);
    expect(consoleLogSpy.calledWith('Hi, Bob. You are not an adult yet.')).to.be.true;
    consoleLogSpy.restore();
  });


  it('should throw an error for invalid user object', () => {
    expect(() => greetUser({ name: "Eve", age: 30 })).to.throw("Invalid user object");
  });


  it('should throw an error for null input', () => {
    expect(() => greetUser(null)).to.throw("Invalid user object");
  });


  it('should throw an error for undefined input', () => {
    expect(() => greetUser(undefined)).to.throw("Invalid user object");
  });


  it('should handle edge case of age being exactly 18', () => {
    const user = new User("Charlie", 18);
    const consoleLogSpy = sinon.spy(console, 'log');
    greetUser(user);
    expect(consoleLogSpy.calledWith('Hello, Charlie. You are an adult.')).to.be.true;
    consoleLogSpy.restore();
  });
});
```

Test Report:

Hello, Alice. You are an adult.

Hi, Bob. You are not an adult yet.

Hello, Charlie. You are an adult.

```json
{
  "stats": {
    "suites": 1,
    "tests": 6,
    "passes": 6,
    "pending": 0,
    "failures": 0,
    "start": "2025-06-05T18:27:46.501Z",
    "end": "2025-06-05T18:27:46.512Z",
    "duration": 11
  },
  "tests": [
    {
      "title": "should greet an adult user appropriately",
      "fullTitle": "User Class and greetUser Function Tests should greet an adult user appropriately",
      "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
      "duration": 4,
      "currentRetry": 0,
      "speed": "fast",
      "err": {}
    },
    {
      "title": "should greet a minor user appropriately",
      "fullTitle": "User Class and greetUser Function Tests should greet a minor user appropriately",
      "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
      "duration": 1,
      "currentRetry": 0,
      "speed": "fast",
      "err": {}
    },
    {
      "title": "should throw an error for invalid user object",
      "fullTitle": "User Class and greetUser Function Tests should throw an error for invalid user object",
      "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
      "duration": 1,
      "currentRetry": 0,
      "speed": "fast",
      "err": {}
    },
```

```json
  {
    "title": "should throw an error for null input",
    "fullTitle": "User Class and greetUser Function Tests should throw an error for null input",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 1,
    "currentRetry": 0,
    "speed": "fast",
    "err": {}
  },
  {
    "title": "should throw an error for undefined input",
    "fullTitle": "User Class and greetUser Function Tests should throw an error for undefined input",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 0,
    "currentRetry": 0,
    "speed": "fast",
    "err": {}
  },
  {
    "title": "should handle edge case of age being exactly 18",
    "fullTitle": "User Class and greetUser Function Tests should handle edge case of age being exactly 18",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 1,
    "currentRetry": 0,
    "speed": "fast",
    "err": {}
  }
],
"pending": [],
"failures": [],
"passes": [
  {
    "title": "should greet an adult user appropriately",
    "fullTitle": "User Class and greetUser Function Tests should greet an adult user appropriately",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 4,
    "currentRetry": 0,
    "speed": "fast",
    "err": {}
  },
```

```json
  {
    "title": "should greet a minor user appropriately",
    "fullTitle": "User Class and greetUser Function Tests should greet a minor user appropriately",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 1,
    "currentRetry": 0,
    "speed": "fast",
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    "fullTitle": "User Class and greetUser Function Tests should throw an error for invalid user object",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 1,
    "currentRetry": 0,
    "speed": "fast",
    "err": {}
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  {
    "title": "should throw an error for null input",
    "fullTitle": "User Class and greetUser Function Tests should throw an error for null input",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 1,
    "currentRetry": 0,
    "speed": "fast",
    "err": {}
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    "fullTitle": "User Class and greetUser Function Tests should throw an error for undefined input",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
    "duration": 0,
    "currentRetry": 0,
    "speed": "fast",
    "err": {}
  },
  {
    "title": "should handle edge case of age being exactly 18",
    "fullTitle": "User Class and greetUser Function Tests should handle edge case of age being exactly 18",
    "file": "C:\\Users\\Kamal\\AppData\\Local\\Temp\\tmpbgt0m9jt\\__tests__\\test_script.test.mjs",
```

      "duration": 1,

      "currentRetry": 0,

      "speed": "fast",

      "err": {}

    }

  ]

}

      "duration": 1,

      "currentRetry": 0,

      "speed": "fast",

      "err": {}

    }