Web Application Development Assignment

Department of Information Technology

Subject: Web Application Development (2024–25)

Topic: JSHint

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Q.1) Illustrate the need for JSHint package

JSHint is an open-source static code analysis tool specifically designed to identify errors and potential problems in JavaScript programs. In modern web development, where JavaScript plays a critical role in both front-end and back-end applications, maintaining clean and error-free code is essential. JSHint helps achieve this by providing real-time feedback on coding mistakes, deprecated syntax, and stylistic inconsistencies.

The need for JSHint arises from the following reasons:
1. **Early Detection of Errors:** JSHint can detect issues such as missing semicolons, undeclared variables, and unused variables before the code is executed.
2. **Improved Code Quality:** By encouraging consistent coding practices, JSHint helps maintain high-quality, maintainable code.
3. **Team Collaboration:** In team environments, using JSHint ensures all team members follow the same coding standards.
4. **Customization:** JSHint is highly configurable, allowing teams to define rules according to project-specific requirements.
5. **Increased Productivity:** It saves time during the debugging phase and improves developer efficiency by catching issues early.

Therefore, JSHint plays a significant role in ensuring robust, clean, and maintainable JavaScript code.

Q.2) Implement a small application which will make use of the mentioned package (I/p, O/p)

Below is an example of how to use JSHint in a small JavaScript application.

Step 1: Install JSHint Globally Using npm

Command:

npm install -g jshint

Step 2: Create a JavaScript File (example.js) with the Following Code:

```
function greet(name) {
  if(name){
    console.log("Hello, " + name);
  }
  else{
    console.log("Hello, Guest");
  }
}
greet("Student");
```

Step 3: Run JSHint on the File

Command:

```
jshint example.js
```

Expected Output:
- If there are no syntax or style errors, JSHint will not return any output.
- If there are issues, it will list them with line numbers and descriptions, such as:
  'example.js: line 1, col 10, Missing semicolon.'

This allows developers to fix potential problems before running or deploying their code.

Q.3) Illustrate the need for code of ethics

The code of ethics in software development serves as a guideline for professionals to behave responsibly and ethically in the creation and deployment of software systems. As technology continues to influence every aspect of human life, the responsibilities of developers have grown significantly.

Need for a Code of Ethics:
1. **Protect User Rights and Privacy:** Developers must ensure that user data is collected, stored, and handled ethically, respecting privacy laws.
2. **Prevent Harm:** Software should not be used to cause harm to users, organizations, or society.
3. **Ensure Fairness and Inclusion:** Ethical standards promote fairness by avoiding biases in code and interfaces.
4. **Maintain Professional Integrity:** Developers should be honest about their qualifications, limitations, and the capabilities of their software.
5. **Accountability:** A code of ethics holds developers accountable for their work, encouraging them to test thoroughly and deliver reliable solutions.

In conclusion, adherence to a code of ethics helps build trust between developers, users, and society, and ensures that technology is used for the greater good.