DWA_01.3 Knowledge Check_DWA1

---

1. Why is it important to manage complexity in Software?

Managing complexity in a software promotes maintainability, readability, debugging efficiency, scalability, collaboration and reduces risks. It enables developers to build robust and adaptable software that evolve over time while minimizing the challenges associated with its development and maintenance.

---

2. What are the factors that create complexity in Software?

1. Requirements:complex or ambiguous requirements can lead to complex software.
2. Size and Scope: Large software systems tend to become more complex. As the number of features, modules and interactions between components increases.
3. Architecture and Design: The software's architecture and design decisions play a significant role in its complexity
4. Dependencies: Software often relies on external libraries, frameworks or services.
5. Time and Resource Constraints: When there are tight deadline or limited resources available for software development.

---

3. What are ways in which complexity can be managed in JavaScript?

1. Modularization
2. Abstraction and Encapsulation
3. Clear and Descriptive Naming
4. Code Organization
5. Comments and Documentation

6. Liniting
7. Testing
8. Code Reviews
9. Avoid Global Scope Pollution
10. Refactoring

---

4. Are there implications of not managing complexity on a small scale?

1. Difficulty in Understanding Code
2. Increased Bug Introduction
3. Slower Development Process
4. Limited Extensibility and Scalability
5. Increased Maintenance Effort
6. Higher Risk of Errors and Failures
7. Decreased Code Reusability
8. Impact on Collaboration and Teamwork

---

5. List a couple of codified style guide rules, and explain them in detail.

1. Consistent Naming Conventions: this rule suggests using consistent naming conventions for variables, functions, classes and other code entities throughout the project
2. Maximum Line Length: this rule sets a maximum limit on the number of characters allowed in a single line of code. This rule aims to improve code readability and avoid horizontal scrolling when viewing the code.

---

6. To date, what bug has taken you the longest to fix - why did it take so long?

1. Heisenbugs: this bug has made my work disappear or change the behavior when attempts are made to investigate or debug them.
