DWA_01.3 Knowledge Check_DWA1

---

1. Why is it important to manage complexity in Software?
Managing complexity in software is important to reduce bugs, ensure maintainability, and enhance collaboration between developers. As software grows, the complexity increases, making it harder to understand and maintain the code. Managing complexity leads to a more robust and sustainable codebase, improving the scalability and reliability of the software.

---

2. What are the factors that create complexity in Software?
Software often fails catastrophically and it is impossible to create bug-free code. There is usually an overwhelming amount of moving parts and people. Poor design choices and rushed development schedules also create complexity. Lack of documentation also leads to complexity.

---

3. What are ways in which complexity can be managed in JavaScript?
By use of Object oriented programming(OOP) principles like encapsulation, inheritance and polymorphism. Also by naming variables and functions correctly, ensuring all related code is grouped together, attempt to also have code as readable as plain english. Prevent incorrect code from running and reviewing and recapping changes to code helps to manage complexity. Lastly, adding useful documentation and proper error handling also lowers complexity.

---

4. Are there implications of not managing complexity on a small scale?
Not managing complexity on a small scale leads to bad readability and maintainability of code , more bugs occur and theres a increased possibility of software failure which can lead businesses failing and going bankrupt. It also leads to developers taking longer to understand code which reduces productivity. Scalability also becomes more difficult.

---

5. List a couple of codified style guide rules, and explain them in detail.
Proper documentation, by writing good comments leads to better code understanding, easier maintenance and better collaboration and debugging.

Good naming conventions, leads to better readability and understanding, reducing the needs for excessive comments. Example, a variable named ‘itemPrice’ instead of ‘p’.

Modularity and flexibility of code, by breaking down complex systems, in to modular pieces, code is more organized and understandable.

Do not keep any unused variables as this makes code more confusing.

---

6. To date, what bug has taken you the longest to fix - why did it take so long?
While working on fixing code for a library app, a syntax error occurred due to bad naming of a few variables which was causing me to have no output in the browser, this took long find due to having too much too much code in one file, which i later fixed and learnt the importance of splitting up code into multiple files for better readability.
