

DWA_01.3 Knowledge Check_DWA1

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

Managing complexity allows one to monitor and manage systems so that if things go wrong, it can be detected early and possible solutions to the issues may be analyzed and applied. This prevents things from crashing on a much larger scale when it is dealt with on a lower level.

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

- Programming comes with its own unavoidable complexity
 - User requirements are constantly evolving, and therefore many changes have to be made to what is being built
 - Technical debt
 - Scaling in terms of the size and weight of a project, some of which grow, and doing so, the programming and processes for it has to change each time.
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3. What are ways in which complexity can be managed in JavaScript?

- Code style
- Adding document comments, which not only describes what the code does, but documents the types and shapes of features, and gives more information on the values in the code
- Makes built code more modular: it becomes easy to reuse, and at the same time, keeps one aware of the reused values and structure. If the logic was extracted and applied somewhere else, related elements are kept close and together
- Abstraction to not only keep code manageable by putting them into smaller pieces of software, but also keep as much internal complexity hidden from the reader as possible

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

There is. If code is not managed on a smaller scale, where it can be detected more easily and quickly, any issues will escalate and affect systems on a much larger scale. This will cause an overall imbalance and throw systems out of control.

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

- Indenting one's code the more detailed elements get, to recognise the level of importance of a line
- Putting code on new lines for readability
- Writing global variables at the top of the file and in upper Snake Case so that when it is applied in the code, the reader will know what type of scope it is in
- Commenting in order to give the reader a better understanding, as to understand code others have written one needs to get an inkling of their thought process

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

The bug that had taken me the longest to fix was loop-related. The structure of the loop was congested since too much was written inside, and values were not properly inputted. This caused nothing to be outputted and plenty of time spent on the rearrangement of code.
