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Week 4 Written Exercises

Software Engineering 5.1 - *How are software changes classified by their purpose? What is the most common purpose of the change?*
Ans:
1. **Corrective Changes:** Changes that correct the software by removing bugs and malware.
2. **Protective Changes:** These changes are invisible to users and they shield the software and its value in a proactive way.
3. **Perfective changes:** Changes that introduce new features and functionality to software which inturn increases its value.
4. **Adaptive Changes:** Changes that adapt the software to new situations but within the boundaries of existing software.

The most common purpose of change is perfective change which consists of 2/3rd of all software changes.

Software Engineering 5.3 - *When is it permissible to do quick-fix changes?*
Ans: Quick-fixes are to be done in the evolution stage especially in a time constrained situation i.e. an emergency state where human life or something substantial is at stake. These fixes are considered high priority and warrant fices to be quick and urgent.

Software Engineering 5.5 - *What is a product backlog?*
Ans: The product backlog also known as the requirements database or project wishlist is a list that contains desired future product properties and functions. It contains a shared vision of stakeholders for the future of the product and is used for better management and structuring of the project. This will avoid misunderstandings in future and keep a clear idea of what the product will contain.

Software Engineering 6.6 - *Describe a situation when a grep search fails. What would you do if this happened to you?*
Ans: Grep fails when:
1. The query does not produce results.
2. Names usually do not appear in the code as there is no code or identifier or comment that indicates presence of concept extension.
3. Text does not exist.

If for some reason, you are unable to search text using grep, one can use other methods to search such as using the search button in VSC. It is recommended to always double check the query that you are putting for grep as well. For the future, one can select good identifiers and comments in code that will lead to concept extension.