ENPM808X: Software Development for Robotics

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September 18, 2018

1. **Software Engineering 5.1**
   How are software changes classified by their purpose? What is the most common purpose of the change?

   Classification of software changes characterized by their *purpose*:

   - Perfective changes: Changes that introduce new functionality and increase the value of software.
   - Adaptive changes: Changes that adapt software to new circumstances within which the software operates.
   - Corrective changes: Changes that correct software bugs and malfunctions.
   - Protective changes: Changes that are invisible to the user, and they shield the software and its value in a proactive way.

   The most common purpose of change is the **perfective change** and they constitute approximately two-thirds of all software changes.

2. **Software Engineering 5.3**
   When is it permissible to do quick-fix changes?

   Quick fixes are to be done when during the evolution stage, the situation is an emergency i.e a human life or something or substantial value is at stake. Situations like these warrant fixes to be quick and the urgency outweighs every other consideration.

3. **Software Engineering 5.5**
   What is a product backlog?

   The product backlog is the stored set of *requirements* or set of *user stories* that the programmers manage. It is also known as *requirement database* and in some other contexts, it is also called *project wish list* because it lists desired future product properties and functions.

   The product backlog describes a shared vision of the project stakeholders for the future of the product.

4. **Software Engineering 6.6**
   Describe a situation when a grep search fails. What would you do if this happened to you?

   A grep search fails often when the query does not produce a result. grep also fails in a search for implicit concepts; names do not appear in code because there exists no code, identifier or comment thar indicates the presence of the concept extension.

   When a grep search fails we must rely on other concept location techniques to search.