Maintenance

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Terminology

1. **Maintenance**

   Maintenance is the process that occurs when a software artifact is modified because of a problem or because of a need for improvement or adaptation. It occurs whenever software is modified regardless of whether this takes place before or after installation of the software product.

2. **Postdelivery Maintenance**

   Any change to any component of the product (including documentation) after it has passed the acceptance test.

Catagory

1. **Corrective maintenance**

   To correct residual faults.

   e.g. analysis, design, implementation, documentation, or any other type of faults.

2. **Perfective maintenance**

   Client requests changes to improve product effectiveness.

   e.g. add additional functionality, make product run faster, improve maintainability.

3. **Adaptive maintenance**

   Responses to changes in the environment in which the product operates.

   e.g. the product is ported to a new compiler, operating system, and/or hardware.

Obstacles for Maintenance of Object-Oriented Software

Inheritance and polymorphism can have a positive effect on development, but a negative effect on maintenance.

1. **The complete inheritance hierarchy can be large**

   The inheritance tree may be spread over the entire product.

2. **The consequences of polymorphism and dynamic binding**

   It takes extra efforts to determine which version of a polymorphic function is actual the buggy one.

3. **The consequences of inheritance**

   Modify a superclass will affect all descendent subclasses.

   i.e. "Fragile base class problem"