COMP3211 Software Engineering

Assignment 2 Nov. 15th

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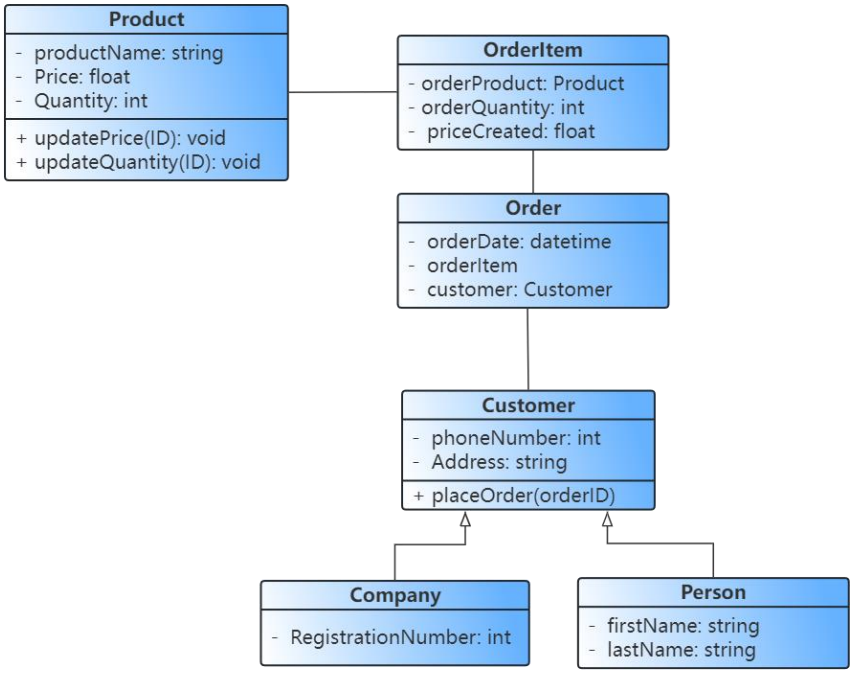
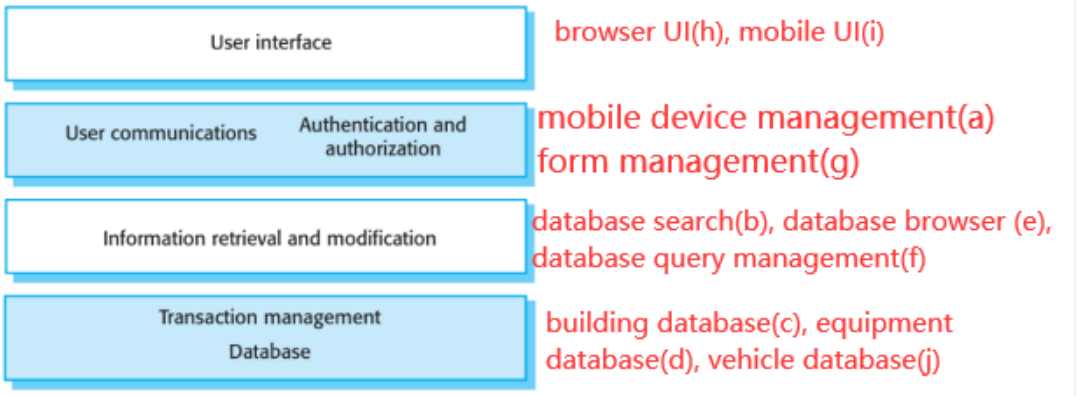
1. Class diagram



2. Layered Architecture



3. Software Testing

x	y	z	ExpectedResult	BrachesCovered
1	1	-1	false	c2==true
1	1	3	false	c2==false; c5==true
1	3	1	false	c2==false; c5==false; c7==true
3	1	1	false	c2==false; c5==false; c7==false; c9==true
3	4	5	true	C2==false; c5==false; c7==false; c9==false

4. Software Maintenance

   Four types of maintenance in mordern view of software maintenance
   1. Preventive: proactively identifying and resolving potential issues before they cause problems, such as code refactoring, and security enhancement.
   2. Corrective: fixing defects or erros in software. It will identify and resolve issue that are causing software to malfunction or produce incorrrect results.
   3. Perfective: improve software's perfoemance, efficiency or user experience, such as enhancing existing features, optimizing code, or adding new functionalities to meet evolving user needs.
   4. Adaptive: modifying software to accommodate changes in the environment, such as operating system upgrades, hardware changes or regulatory requirements.

Why difficult to distinguish:

These four types of maintenance often overlap each other. For example, fixing bug(corrective maintenance) may require adapting the software to new environment(adaptive maintenance) or improving some features(perfective maintenance). During improving some features, it may also involved with some code refactoring(preventive maintenance). These four types of maintenance are always interconnected, then it is always difficult to make a boundary clearly as they happpened simultaneously.