

Software maintenance Assignment - 2

Q 1: What is program Comprehension process model? Explain program Comprehension strategies.

Ans) Program Comprehension

It is the ability to of the programmer to understand what a computer program's source code does in computer science instruction. Comprehension of a program is frequently overloaded in favour of learning and syntax of computer language being taught. Writing comprehensible code, however is a universal need, regardless of the compiler language in which it is written. It is increasingly common that programmers cannot decipher their code own code, since it is often not written clearly and inactively.

Strategies

Programmers can use strategies to improve program comprehension and each has its own advantages & drawbacks. The first method is to add documentation to code during or after code creation, and the second is to write code with an emphasis in code structure. A combination of both approaches is helpful to most program although there are some code builders who prefer one strategy over another.

Date

which method to use is a matter of personal preference by the programmer and any attempt to clarify code is far better than none at all.

Adding documentation to code is the simple of the methods and when done well it can be very useful to programmers unfamiliar with the language the code is written in.

A program comprehension strategy is a technique used to form a model of target program. The model is constructed by combining information contained in the source code and documentation with the assistance and expertise of the domain knowledge that the programmer brings to the task.

* Top-down model

program understand is mapping from how program code key features

* Views the structure of the knowledge being understood as organised into distinct domains like the problem domain and the programming domain.

* program Comprehension involves reconstructing knowledge about these domains or the relationship b/w them. The reconstruction process is top-down, involving creation, confirmed

Bottom-up model

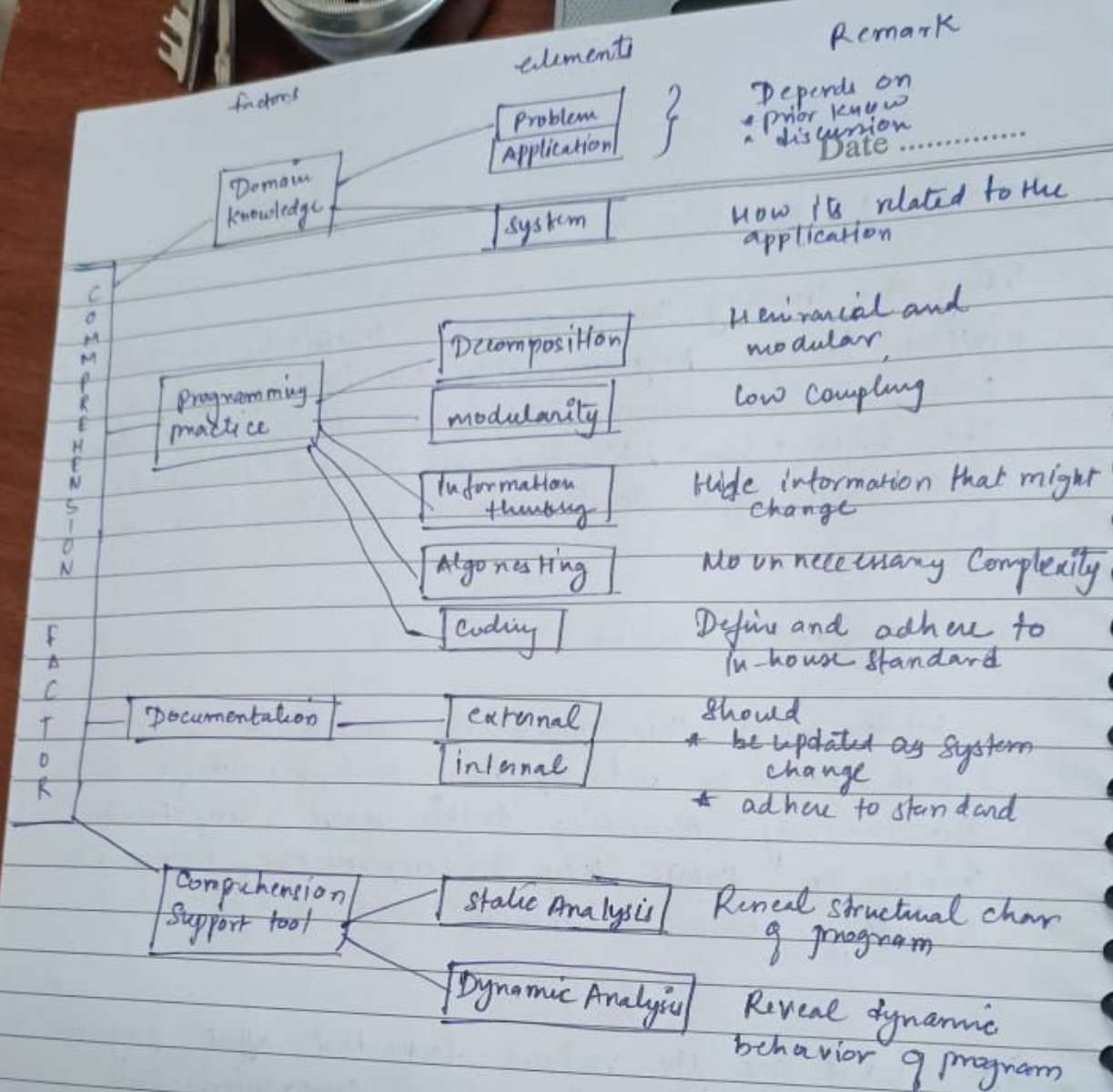
Using the strategy, the programmer successively reorganise pattern in the program. These are iteratively grouped into high-level, semantically more meaningful structures. The high-level structures are chunked throughout into even bigger structure in a repetitive bottom-up fashion.

* opportunistic model

While using this model, the understander makes use of both bottom-up and top-down strategies, although not simultaneously. According to this model, comprehension hinges on three key & complementary features - a knowledge base, a mental model and an

Q2 What are the various factor that affect program understanding & explain program Comprehension tools.

factors that affect understanding -



Comprehension Support tools :

These are tools that can be used to organise & present source code in a way that make it more legible, more readable and hence more understandable. These include the book paradigm the pretty-printer, the static analyzer and the browser.