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Chapter 2 Questions

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CS 2450 Section 2

Review Questions

1. The depth versus breadth issue in software development is a question of size and complexity. The breadth complexity of an issue refers to how wide or broad the issue is. How many inputs may be required, or how many languages will be needed. The depth on the other hand is the length of each process and how complex each process is. In other words, what will each input need to do and how many functions or processes will be associated with those inputs.
2. One way to simplify a complex problem is to break it down, or decompose, it into smaller problems. This could be based on features, or functions, or any other type of identifying criteria. In object oriented programming this is done by creating classes that handle specific issues or problems.
3. Two obvious technical concerns in developing large systems are which language to use, and what tools to use to develop them. Each developer on a project may argue that the language they know best is the one to use. This also can be applied to developers who are comfortable with a certain development environment versus another.
4. N(N-1) = 20(20-1) = 190 Paths

2 2

1. Four factors of to determine the number of post-release people are:
   1. One factor will be how many people it will take to train the users of the system.
   2. Then we will need to consider what problems and issues they will find and how to fix them
   3. Another factor will be the number of people to maintain the system.
   4. A fourth factor would be the number of people to support those using the system.

Exercise Questions

3. Integration is the collection of modules from developers and placed in the overall system. This is important to manage for large scale systems because more than on developer works on a project. At some point those working on separate things have to put their work together and if it is not managed well, then there could be problems in compatibility, timing delays, and other conflicts which could cost lots of money if not managed well.

4. The major tasks in developing and supporting a software system include:

1. The first thing to do is gather the requirements of the system. Figure out the technical needs as well as the non-technical needs

2. The second thing to do is design the system. It starts by decomposing the tasks and starting to modularize the properties or functions

3. Third code the system or construct the system. This includes managing the developers and making sure that the project is progressing

4. Fourth the project needs to be tested. The modules need to be tested as well as the project as a whole.

5. Fifth there will be a deployment and training of those using the software

6. Finally there will be support and maintenance of the project.

1. A. See attached files

B. The questions that I asked

1. What language should I write in?

2. What interface should the user have?

3. What will be quickest?

4. What will my user understand?

5. Do I need to handle exceptions and errors?

6. Do I need to test this?

7. When will I have time to write it?

8. What is the priority of this assignment versus other assignments?

9. Do I need to use file I/O or can I have the user put the numbers in?

10. When I’m finished will it be what the customer (in this case the teacher) desired?

C. In my view the skills needed to collect and specify the requirements of a system begin with education. It would be very difficult to know what a developer needs unless one has written programs. With that foundation and understanding what programming constraints and opportunities are, one can then begin to ask what the purpose of the program is.

1. The three areas that I see that need to be coordinated in a large software engineering project would be among the client and project managers, the project manager and the developers and the developers and testers or deployment team. I do not believe that any one of these areas is more important than the others. All of these areas are going to make the client happy.