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Assignment 1

1. Some of the characteristics of the different approaches to rapid software development are that the processes of specification, design, and implementation work together which means that there is no detailed system specification. The user requirements document is only for the most important characteristics. The system is developed in a series of versions and end-users and stakeholders can propose changes and requirements that will be later included. Also, the user interfaces are developed using an interactive system that allows it to be created quickly.
2. The types of systems that agile approaches is likely to be successful are product development where a company is developing a small/medium sized product or a custom system development within an organization where there is a clear commitment from the customer to become involved in development process and there are not many external rules and regulations.
3. The 5 principals of agile methods are customer involvement, incremental delivery, people not process, embrace change, maintain simplicity.
4. 4 questions that should be asked when deciding whether or not to adopt an agile method of software development are: Are systems that are developed using an agile approach maintainable, given the emphasis in the development process of minimizing formal documentation? Can agile methods be used effectively for evolving a system in response to customer change requests? FINISH THIS QUESTION
5. Extreme programming has important characteristics which include that the requirements are expressed as user stories which are implemented directly as a series of tasks, programmers work in pairs and develop tests before writing the code, extreme programming also involves a number of practices that reflect the 5 principles of agile methods. Also, in an XP process, customers are involved in specifying and prioritizing the requirements by discussing with the development team.
6. Test-first development is where instead of writing code then writing tests for that code, you write the tests before you write the code. Test driven development is a process that requires repetition of a short development cycle, and the code is produced as the tests succeed. The relation between them is that test-first development is used in test driven development. They both require you to create tests to base your code off of.
7. The possible problems of test-first development include how programmers prefer programming to testing so they may take shortcuts when writing tests so they may not check for all possible exceptions. Also, some tests can be very difficult to write incrementally, and it is also difficult to judge the completeness of a set of tests. Crucial parts of the system may not be executed and so remain untested.
8. The advantages of pair programming are that it supports the idea of collective ownership and responsibility for the system. Also, it acts as an informal review process because each line of code is looked at by at least two people. Finally, it helps support refactoring, which is a process of software improvement.
9. The conceptual differences between sprint and scrum are that scrum is a general agile method, but its focus is on managing iterative development rather than specific technical approaches to agile software engineering whereas sprint is a cycle in development that develops an increment of the system.
10. The barriers to introducing agile methods into large companies are that project managers who do not have experience of agile methods may be reluctant to accept the risk of a new approach since they don’t know how it will affect their projects. Large organizations also often have quality procedures and standards that all projects are expected to follow. Also, agile methods seem to work best when team members have a relatively high skill level, and in large companies, there are likely to be a range of skills and abilities. Finally, there may be cultural resistance to agile methods, especially in organizations that have a long history of using conventional systems.