

Exception Handling

Name: _____ ID: _____

These questions do not have a formal, definitive answer. They are meant to be food for thoughts. Feel free to seek answers on browsing the Internet, talking to other software developers or reading books.

1. Agile development is a new approach to software development. Table 1 matches four different aspects of agile development and traditional development below. Discuss each line of this table, in terms of vantages and disadvantages:

Table 1: Left: characteristics of agile development. Right: characteristics of traditional development.

Individuals and interactions	–	Processes and tools
Working software	–	Comprehensive documentation
Customer collaboration	–	Contract negotiation
Responding to change	–	Following a plan

2. In your own words: what is agile development? What do you think this is supposed to be?

- (e) Face-to-face meetings are the best way to synchronize the development team.

 - (f) The measure of success is the working software

 - (g) Software development must be sustainable. That is, developers, managers and customers must be able to keep a continuous pace throughout the development phases.

 - (h) Simplicity – in this case the art of maximizing avoided work – is essential.

 - (i) Software development teams must be able to self-organize themselves.

 - (j) The software development teams must be able to perform some self-adjustment any time that is necessary.
6. Other than those principles enumerated above, can you think about any other principle that is desirable in the agile development approach?

7. Why requirements change so much? Is it the case that people do not know what they want? Can you cite any example from real life?

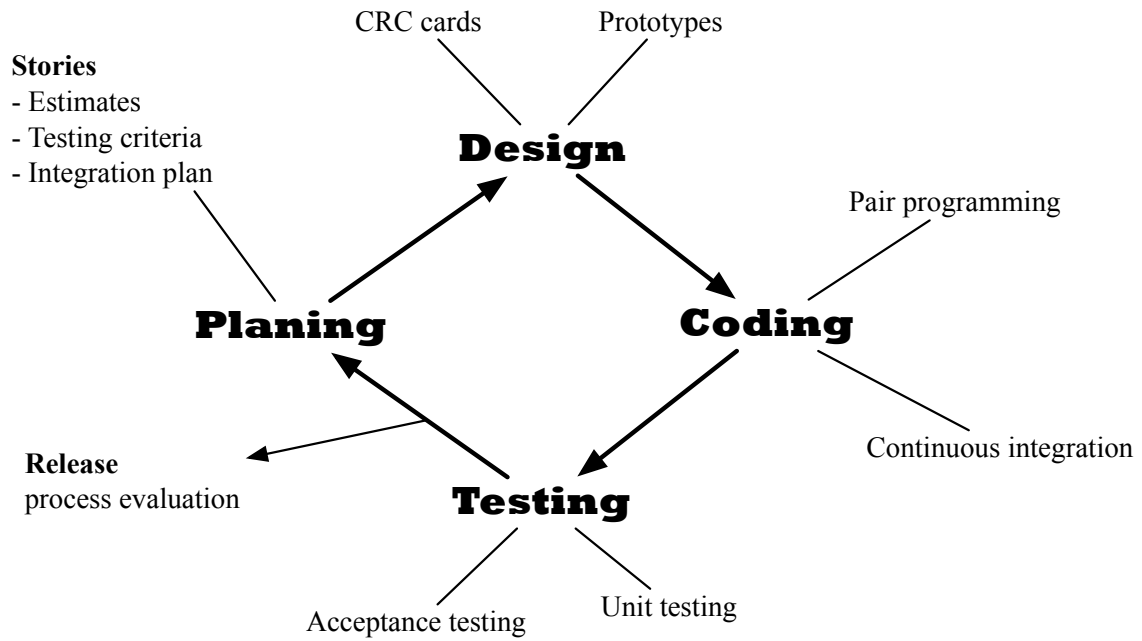
8. Agile methods advocate face-to-face meetings. A typical example is the *scrum* method. Have you ever heard of this approach? In each scrum meeting, which normally takes 15 minutes, there are three questions that must be answered. Which questions are these?

9. What is the importance of face-to-face meetings? Is it possible to have cooperation if the parties are geographically away?

10. In case you work in software development, can you explain at least one of the meeting approaches adopted in your work?

11. *Refactoring* is essential in agile development. What is refactoring, and why is it particularly important in agile development?

12. The extreme programming approach is an agile development method. The iterations, in this case, are divided into four phases, which are illustrated in the figure below. Explain each of these phases.



13. Extreme programming puts a strong emphasis on prototyping. What is prototyping? Are there any dangers related to prototyping during development?

14. Another characteristics of extreme programming is the concept of *pair programming*. What are the advantages and disadvantages of this approach to coding? Putting two programmers in the same machine would not waste a programmer's time?

15. **Group activity:** this exercise should be performed in the class room, with teams of three developers.

The boarders of directors of *Toy Inc.* is concerned about the high volume of spam that the company's e-mail system is receiving. They want your team to develop a spam filter. This filter is a program that reads an e-mail and parses it into several pieces: sender, message, time, etc. After analyzing the message the filter returns a real number, between 0 and 1, that says the probability that the message is a spam. There are many ways to detect a spam:

- (a) The message contains key words that often occur in spam messages.
- (b) The message has been seen before, and has been marked as a spam.
- (c) The message comes from a sender that is a notorious spam emitter.

Your team will have to plan the first iteration of a extreme programming cycle. Decide which task you will be handling first, what software you will be releasing, how coding tasks will be divided and which testing criteria will have to be successfully met. You must produce a quick prototype, that contains the basic algorithm used to solve this first task.