# CMPE312 Problem Session 24.05.2019

Chapter 11. Software Configuration Management (SCM)

11.1. What is the subject of SCM?

11.2. What are the parts of SCM?

11.3. What are the three categories of software configuration items?

Chapter 10. Software Quality Management

10.1. What is quality?

10.2. What are the three activities of quality management?

10.3. What is the aim of quality planning?

10.4. What is the aim of quality assurance?

10.5. What is the aim of quality control?

10.6. What tools are used in quality control?

10.7. What is the aim of Pareto analysis? What is 80-20 rule? How Pareto diagram is built?

10.8. What is the aim of statistical sampling?

10.9. How sample size is defined? What is certainty? Error? Certainty factor? How certainty factor is defined using Standard normal probability distribution tables? What is the certainty factor value for certainty 98%? What is error for certainty 98%? What is sample size for certainty 98%?

10.10. What is the aim of Six sigma approach?

10.11. What is DMAIC concept?

10.12. Using Standard normal probability distribution, show that 99.7% of the population lies inside –[-$3σ, 3σ]$. Show that number of defective units per billion is 2, 700, 000 for that case.

10.13. Show that for Six sigma conversion table, DPMO is 66, 800 for $σ=3$ with (shift 1.5)

10.14. What is the seven run rule?

10.15. When testing is applied in the sofyware development life cycle?

10.16. What eight issues are covered by software quality assurance?

10.17. What are the three elements of quality?

10.18. What are the components of the cost of quality?

10.19. What are the components of defects prevention cost?

10.20. What are the components of the cost of failure of control?

10.21. How quality assurance activities are related with the software product development activities?

10.22. What are the tasks of the formal technical reviews (FTR)?

10.23. What is the IBM’s software defect amplification model?

10.24. Who are the four players of FTR?

10.25. What are the possible outcomes of FTR?

10.26. What are 11 guidelines to organize FTR’s?

10.27. What are the four aims of statistical quality assurance?

10.28. How phase index is calculated? How error index is calculated?

10.29. What are the ISO9001 20 requirements for a quality assurance system?

Chapter 9. Project Scheduling and Tracking

9.1. What are the 8 reasons for late software product delivery?

9.2. What are a manager strategies in the case when the project completion time estimate exceeds the time available for the project implementation?

9.3. How critical path is related to the project duration?

9.4. What are the 7 basic principles of the software project scheduling?

9.5. How human effort is related to the number of people involved? What is the number of communication paths? How productivity depends on the number of people?

9.6. What are the 5 project types?

9.7. How degree of rigor is defined? What are the 12 adaptation criteria?

9.8. How a task set selector value is calculated?

9.9. What is a macroscopic schedule? What is a macro-task? Subtask?

9.10. What is a critical path? What is earliest start? Earliest end? Latest start? Latest finish? Float time? Drag?

9.11. What are the 5 activities related to schedule tracking?

9.12. How activity network diagram with hierarchical tasks is transformed to the one with leaf level tasks only? Explain example on Slides 47, 48

9.13. How many time estimates are used in PERT? What is PERT? What are these estimates? How these estimates are related to Beta probability distribution? How expected time is calculated using the estimates?

9.14. How, given three PERT time estimates, critical path expected time duration can be calculated?

9.15. How, given PERT time estimates, critical path variance of time duration can be calculated?

9.16. How z-value is calculated using time duration we need assessing, and critical path expected time and standard deviation? How probability is estimated using z-value and Standard normal distribution?

9.17. How can be defined optimal crashing strategy?

9.18. What is the difference between CPM and PERT methods?

Chapter 8. Requirements (slides 23-45)

8.1. What non-functional requirement is?

8.2. What is service-oriented approach in requirements elicitation?

8.3. What use-case is? What is use-case scenario? What is normal flow of events (main success scenario)? What is exception (alternative) in the flow of events? What is use-case diagram? How a template for use-case scenario is structured?

8.4. What is a sequence diagram? How it is related to use-case scenario?

8.5. How test plan can be defined using use-case scenario?