

1. What are the four P's of effective project management?

people, product, process, and project

2. What steps can be take to avoid many of the problems that cause software projects to fail?

- Start on the right foot
- Maintain momentum
- Track progress
- Make smart decisions
- Conduct a postmortem analysis

3. List 4 of the 6 critical software practices required by performance-based management.

formal risk management  
empirical cost and schedule estimation  
metric-based project management  
earned value tracking  
defect tracking against quality targets  
people-aware program management

4. How is software scope defined?

By defining how the software to be built fits into a larger systems, product, or business context and the constraints imposed by the context. Determining what visible objects the customer expects to see as output and what input objects are required to produce them. Determining the software function needed transform input to output and any special performance characteristics. Attempting to bound all information quantitatively, when possible, and descriptively, when numbers cannot be used.

5. Make a list of 10 guidelines that will lead to software people who work to their full potential.

1. Thou shalt get smarter (provide education).
2. Thou shalt focus on quality.
3. Thou shalt listen to the customer.
4. Thou shalt understand the problem.

5. Thou shalt work within a repeatable process.
  6. Thou shalt not agree to ridiculous schedules.
  7. Thou shalt measure the product, the process and yourself.
  8. Thou shalt document the work in the most effective way.
  9. Thou shalt remember that others will also work on the software.
  10. Thou shalt continually improve
6. Describe three real-life situations in which the customer and the end user are the same. Describe three situations in which they are different.

Same person: (1) an engineer who must develop a program for personal use; (2) a business person creating a spreadsheet model for personal use; (3) an entrepreneur who has a new concept for a killer App.

Different person: (1) an IS department servicing some business function; (2) a software development group servicing marketing needs; (3) a contractor building to customer specs.

7. The decisions made by senior management can have a significant impact on the effectiveness of a software engineering team. Provide five examples to illustrate that this is true.

In today's environment downsizing and outsourcing have the most immediate and significant impact. In addition, "expense reduction measures" that lead to lower product quality; unrealistic project deadlines; failure to "listen" to the customer, or conversely, to warnings noted by the software engineers doing the work.

8. You have been asked to develop a small application that analyzes each course offered by a university and reports the average grade obtained in the course (for a given term). Write a statement of scope that bounds this problem.

The GradeAnalyzer application will obtain grades for all undergraduate and graduate for-credit courses contained in the Registrar's data base of courses for a given semester. GradeAnalyzer will read all grades for each course and compute the average grade using a numerical scale in which an A = 4.0 and other grades are assigned values as indicated in grade value document UC29-1. GradeAnalyzer will print and/or display a report that lists each course, the instructor, the average grade. The report may be sorted by department, by highest to lowest average grade, by instructor or by any permutation of these characteristics. GradeAnalyzer will be implemented to run under Microsoft Windows Visat environment.

