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# Software Project Management Study Guide

## Summary

This document outlines key aspects of software project management. The goal is to enable efficient teamwork towards successful project completion. The project manager's responsibilities include project planning, monitoring, and control. Estimating software cost involves determining the product size, then estimating the effort needed based on size, and finally, determining project duration and cost from the effort estimate. Furthermore, compressing the delivery schedule can significantly increase human effort, while using fewer people over a longer period can be beneficial.

## Notes

### Software Project Management (General)

- **Goal:** Enable efficient teamwork for successful software project completion.

### SPMP Document

- **Purpose:** Documents project plans after planning phase.

### Organization of SPMP Document

- **Introduction:** Objectives, major functions, performance issues, management & technical constraints.
- **Project Estimates:** Historical data, estimation techniques, effort, cost, project duration.
- **Project Resources Plan:** People, hardware/software, special resources.
- **Schedules:** Work Breakdown Structure (WBS), task network, Gantt chart, PERT chart.
- **Risk Management Plan:** Risk analysis, identification, estimation, abatement procedures.
- **Project Tracking and Control Plan.**
- **Miscellaneous Plans:** Process tailoring, quality assurance.

# MCQs

1. **According to the text, what is one way experts can estimate software project effort?** a) Using historical data from similar projects. b) Dividing the software into components and summing individual estimates. c) Applying a standard formula based on lines of code. d) Consulting with the project stakeholders.

2. **What is an example of a component unit that experts might divide a software product into for estimation purposes?** a) Project budget b) GUI c) Risk assessment d) Project timeline

3. **The text mentions that the staffing level during the life cycle of a software product development follows what kind of curve?** a) Bell curve b) Exponential curve c) Rayleigh curve d) Linear curve

4. **According to the text, when is the maximum number of engineers typically required during a software product development lifecycle?** a) Requirements gathering b) Design phase c) Coding phase d) Testing phase

5. **What is "Expert Judgement" used for in software project management, according to the text?** a) Risk mitigation b) Cost estimation c) Resource allocation d) Communication planning

6. **Which of the following is NOT mentioned as a component unit for expert estimation?** a) GUI b) Database module c) Data communication module d) Project Management module

7. **The Rayleigh curve is associated with:** a) Project budget allocation b) Staffing levels during software development c) Risk assessment probability d) Code complexity measurement

8. **What type of team organization is mentioned in the text?** a) Hierarchical team organization b) Matrix team organization c) Mixed team organization d) Agile team organization

9. **The expert judgement method relies on:** a) Statistical analysis of past projects b) Intuition and experience of experts c) Automated tools for estimation d) Detailed project documentation

10. **The staffing level in a software project typically:** a) Remains constant throughout the project b) Increases linearly over time c) Follows a Rayleigh curve d) Decreases exponentially over time

11. **Which phase of software development generally requires the most engineers, according to the text?** a) Design b) Implementation c) Testing d) Deployment

12. **What is the primary purpose of dividing a software product into component units for estimation?** a) To simplify the estimation process b) To improve communication among team members c) To identify potential risks d) To allocate resources more efficiently

# Explanation

**Software Project Management: The Basics**

The goal of software project management is to help teams work together effectively to complete a software project successfully. The project manager is in charge of planning, keeping an eye on, and controlling the project.

**Estimating Software Cost:**

1. Figure out the size of the software product.
2. Estimate the amount of effort needed based on the product's size.
3. Determine the project's duration and cost from the effort estimate.

**Important Note:** Trying to finish the project faster can make the team work much harder and increase costs. Sometimes, having fewer people work over a longer period can be more efficient.

**Software Project Management Plan (SPMP) Document:**

This document outlines the project plans after the planning phase. Here's what it includes:

1. **Introduction:**
2. Objectives
3. Major functions
4. Performance issues

5. Management and technical constraints

6. **Project Estimates:**

7. Historical data
8. Estimation techniques
9. Effort
10. Cost

11. Project duration

12. **Project Resources Plan:**

13. People
14. Hardware/software

15. Special resources

16. **Schedules:**

17. Work Breakdown Structure (WBS)
18. Task network
19. Gantt chart

20. PERT chart

21. **Risk Management Plan:**

22. Risk analysis
23. Identification
24. Estimation

25. Abatement procedures

26. **Project Tracking and Control Plan**

27. **Miscellaneous Plans:**

28. Process tailoring
29. Quality assurance

## YouTube Resources

### Software Project Management Tutorials

- [Software Project Management Tutorial](#)
- [Software Project Management Tutorial](#)

### Software Project Management Lectures

- [Software Project Management Lecture](#)
- [Software Project Management Lecture](#)

### Basics of Software Project Management

- [Basics of Software Project Management](#)
- [Basics of Software Project Management](#)

### Full Course on Software Project Management

- [Software Project Management: Full Course](#)

### Software Project Management for Beginners

- [Software Project Management for Beginners](#)

### Software Project Management: Crash Course

- [Software Project Management: Crash Course](#)
- [Software Project Management: Crash Course](#)

# Web Articles

- [Agile Development Best Practices](#)
- [Software Project Management Best Practices](#)
- [Software Development Project Management Best Practices](#)
- [What is Software Project Management?](#)
- [Best Practices in Project Management](#)
- [Software Project Management Guide](#) ```