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SPM activity

SPM

1. What do you understand by software project planning? What are the various planning objectives? Also discuss various types of project plans with suitable example.

Sol)A Software Project is the complete methodology of programming advancement from requirement gathering to testing and support, completed by the execution procedures, in a specified period to achieve intended software product.

Software development is a sort of all new streams in world business, and there's next to no involvement in structure programming items. Most programming items are customized to accommodate customer's necessities. The most significant is that the underlying technology changes and advances so generally and rapidly that experience of one element may not be connected to the other one. All such business and ecological imperatives bring risk in software development; hence, it is fundamental to manage software projects efficiently.

A web user may ask for a fast system. The quantitative requirement should be all screens must load in under three seconds. Describing the time limit during which the screen must load is specific and tangible. For that reason, you’ll know that the requirement has been successfully completed when the objective has been met.

2. Write short notes on the following with suitable example:

1. Software project estimation models

Effort estimation

Cost estimation

Resource estimate

### 1. Top-Down Estimate

Once more detail is learned on this technique is usually followed where high-level chunks at the feature or design level are estimated and are decomposed progressively into smaller chunks or work-packets as information is detailed.

### 2. Bottom-Up Estimate

This technique is used when the requirements are known at a discrete level where the smaller workpieces are then aggregated to estimate the entire project. This is usually used when the information is only known in smaller pieces.

### 3. Analogous Estimating

This project estimation technique is used when there is a reference to a similar project executed and it is easy to correlate with other projects. Expert judgment and historical information of similar activities in a referenced project are gathered to arrive at an estimate of the project.

### 4. Parametric Estimate

This technique uses independent measurable variables from the project work.  For example, the cost for construction of a building is calculated based on the smallest variable as the cost to build a square feet area, the effort required to build a work packet is calculated from the variable as lines of codes in a software development project. This technique gives more accuracy in project estimation.

### 5. Three-point Estimating

This technique uses a mathematical approach as the weighted average of an optimistic, most likely and pessimistic estimate of the work package. This is often known as the.

2. Structure of a software project management plan.

### Integration Management

This is the phase in the project solidifies. Components within the project are joined together. In this phase, the charter and management plan are developed. Project knowledge, project work, and change control are part of this area. Finally, the project close phase belongs in this component of project management.

### Scope Management

In this area, the scope outlines the approved work breakdown structure and describes how any changes to it will be handled. The scope is defined, validated, and controlled. Not only is the scope planned out, but requirements are gathered, and a **work breakdown structure** is created. This is an organized hierarchy that outlines the project and divides it into workable chunks.

### Schedule Management

In the schedule management area, we define how the details of the work plan will be updated to show progress on a regular recurring basis. Here, the sequence of activities and their duration are outlined. The schedule is then developed and managed.

### Cost Management Plan

No project is without expense. This knowledge area explains what measures will be in place to create a budged, monitor and control costs, and find areas where costs can be reduced or eliminated.

### Quality Management

It isn't enough to deliver a project on time and on budget. Just slamming something in will result in serious issues down the line. Thus, there is a need for quality management in projects. The purpose of quality management is to plan, manage, and control quality throughout the project life cycle.

### Resources Management

3. Describe the following:

1. Vision and scope document

Vision and scope documents define what your customer or company has in mind as well as describe the work process necessary to reach that vision. For example, entrepreneurs benefit from writing a vision and scope document to define their business ideas and list how to develop them into reality. Project managers use such a document to identify the expected result of the project and to set forth the methods and activities necessary to achieve that result.

2. Management Spectrum

For properly building a product, there’s a very important concept that we all should know in software project planning while developing a product. There are 4 critical components in software project planning which are known as the 4P’s namely:

* Product
* Process
* People
* Project

3. SPM framework

**1. Project life cycle** This is the cycle a project goes through from beginning to end. It consists of five phases: **Initiation**: This is where you define what the project actually is. You can outline your objectives in a project charter and identify any potential risks. **Planning**: In this phase, you list all the project tasks in a detailed roadmap. Estimate how long each one will take, create deadlines, and add assignees. **Execution**: Put the plan into action. Teams commence work on project tasks and align their schedules to achieve key deliverables. **Monitoring and controlling**: Project managers oversee progress by tracking team performance, creating reports, and readjusting priorities if necessary. **Closure**: The final phase incorporates the results achieved when all project tasks are completed. A project manager will analyze these results and plan the next steps.

**2. Project control cycle** The control cycle is the process of monitoring and controlling the project. **3. Tools and templates** Project plans, project management reports, and risk logs are common tools and templates for managing projects.

4. Decision Process

Decision making is **the process of making choices by identifying a decision, gathering information, and assessing alternative resolutions**. Using a step-by-step decision-making process can help you make more deliberate, thoughtful decisions by organizing relevant information and defining alternatives

4. What you understand by work break structure (WBS)? What are the various types of WBS? What is the role of WBS directory and what the contents of it? Explain.

Have you encountered work breakdown structures and wondered how they can help in your project management efforts? A work breakdown structure (WBS) is a visual tool for defining and tracking a project deliverable and all the small components needed to create it. With a work breakdown structure, you can stay focused on what you need to accomplish as you move toward the project deadline.

This article will help you understand what a work breakdown structure is and what it is not, the advantages of using a work breakdown structure, and how to create one. You’ll also learn from leading experts on how to use this powerful and essential product management tool with confidence.

5. 1) What is the difference between the project life cycle and product life cycle? Discuss.

A project life cycle measures the work that goes into a project from beginning to end. The phases in product life cycle are initiation, planning, execution, and closure. During initiation, a business case and goals are created, and resources are assigned

2) Write a short note on organizational behaviour.

All businesses have an internal culture that is unique to their company. Each employee contributes not only a certain skill set but also a personality with inherent values and beliefs, and those values and beliefs will determine how they will interact in work groups, with other employees, and toward management. Organizational Behavior (OB) is the multidisciplinary study of the employee interactions and the organizational processes that seek to create more efficient and cohesive organizations.

In the field of Organizational Behavior, researchers have found that scientific approaches can be applied to personnel management to bring out the best in employees and improve the overall success of an organization. Researchers in the disciplinary fields of psychology, sociology, social psychology, anthropology, political science and economics have all contributed to the research of Organizational

6. What do you mean by project scheduling? What are the scheduling objectives? How to build the project schedule?

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Knowing how to establish a realistic timeline that ensures the team can meet project deadlines is a key skill to develop if you're thinking about pursuing a career as a project manager. Project management schedules allow you to track a project's progress and keep the team informed about tasks to complete. Learning how to construct a successful schedule can help your team stay organised and complete their tasks before the deadline. In this article, we explore what project scheduling is, explain why it's important, show the difference between planning and scheduling and list key elements of scheduling in project management.

7. What is the significance of project monitoring and control? What are the various dimensions of project monitoring and control? Does monitoring and control affect the project schedule? Discuss.

Project monitoring and control helps you measure project performance. Use the process to look at the project plan, review project status, identify potential problems, and implement changes when necessary. This phase coincides with the execution phase of the project lifecycle.

You can use this phase to keep a project on schedule and within budget while also managing risk and avoiding scope creep. At the end of the monitoring and control phase, the customer accepts the completed project deliverables.

Project monitoring and control are essential to completing a project on time, on budget, and within scope. Monitoring and control processes identify deviations from the project plan. Project monitoring and control ensure that performance is seamless, efficient, and on track.

Alan Zucker describes the importance of project monitoring and control for delivering a successful project: "Project managers know that no project proceeds perfectly according to plan. We must be diligent in tracking performance to see if it meets our expectations for success. If not, we must determine what is needed to keep the project on track."

8. 1) what do you understand by schedule performances index (SPI)? Discuss. 2) What do you mean by software review? What is the significance of software reviews in software project management?

The variation in a project's actual schedule, as compared to its planned schedule, is measured by its schedule variance (SV), which measures the difference between the earned value (EV) (the value of work actually performed) and the planned value (PV), so SV = EV – PV. However, SV is expressed as a monetary unit (e.g., in dollars), which makes it difficult to understand as a variance in the schedule, which should presumably be measured in time units, such as days or months. Several authors have proposed a “time-based” earned schedule (ES), which is easier to interpret.

Software Review is systematic inspection of a software by one or more individuals who work together to find and resolve errors and defects in the software during the early stages of Software Development Life Cycle (SDLC). Software review is an essential part of Software Development Life Cycle (SDLC) that helps software engineers in validating the quality, functionality and other vital features and components of the software. It is a whole process that includes testing the software product and it makes sure that it meets the requirements stated by the client.

Usually performed manually, software review is used to verify various documents like requirements, system designs, codes, test

What do you mean by software review? What is the significance of software reviews in software project management?

9. Write short notes on the following with examples: 1) Code Review 2) Error Tracking

10. 1) what is software testing? What are software testing objectives? Discuss various types of testing in detail. 2) Write a short note on testing automation and testing tools.

11. 1) what is the difference between testing principles and testing strategies? Discuss. 2) What is the difference between program verification and program validation? Explain the life cycle verification approach with suitable diagram.

12. 1) Write a short note on SEI capability maturity model (CMM). 2) Explain the term statistical quality assurance and clean room process.

13. What do you understand by software configuration management (SCM)? What are various software configuration items and tasks? Discuss with suitable example.

14. Describe the following with example: 1) Risk breakdown structure (RBS) 2) Cost benefits analysis.

15. What is the role of a software project management tool? Describe any software project management tool in detail.