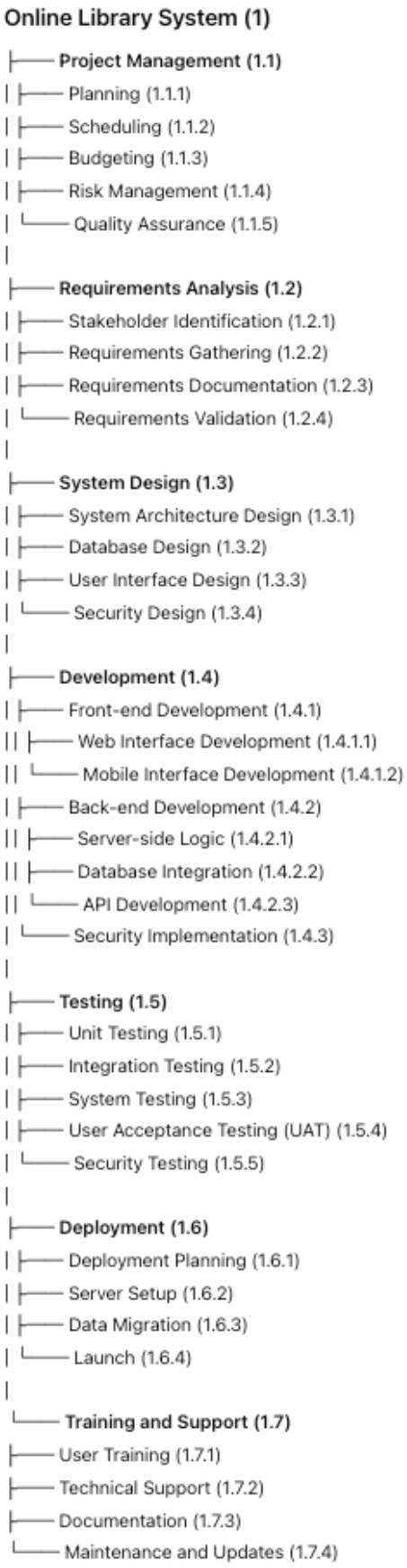
Chapter 05:

Describe the Work Breakdown Structure (WBS) for an online library system. << 10 marks>>



Chapter:06 <<10 marks>>

1. **Given the following project activities, durations, and dependencies, identify the critical path, calculate the total project duration, and determine the earliest and latest start and finish times for each activity:**

Activity	Duration (days)	Predecessor(s)
A	5	None
B	3	A
C	8	A
D	6	B
E	2	B
F	7	C
G	4	C
H	3	D, E
I	4	F, G
J	5	H, I

- **Draw the network diagram.**
- **Identify all possible paths from start to finish.**
- **Calculate the total duration of each path.**
- **Determine the critical path and its duration.**

Chapter:07 <<5 /10 marks>>

1. **A project has a total budget (BAC) of $200,000 and is planned to last 10 months. At the end of the 5th month, the following data is available:**

   Planned Value (PV): $100,000
   Earned Value (EV): $90,000
   Actual Cost (AC): $110,000

   Calculate the following:
   a) Schedule Variance (SV)
   b) Cost Variance (CV)
   c) Schedule Performance Index (SPI)
   d) Cost Performance Index (CPI)

Chapter:11

1. **List common sources of risks on IT projects.**

Technical Risks: Inadequate technology, system failures, software bugs.
Project Management Risks: Poor planning, unclear requirements, scope creep.
Organizational Risks: Resource availability, organizational changes, stakeholder conflicts.
External Risks: Regulatory changes, market fluctuations, vendor reliability.
Security Risks: Data breaches, cyber-attacks, compliance issues.

列出 IT 项目中的常见风险来源。

技术风险： 技术不足、系统故障、软件漏洞。
项目管理风险： 规划不当、需求不明确、范围蔓延。
组织风险： 资源可用性、组织变更、利益相关者冲突。
外部风险： 法规变化、市场波动、供应商可靠性。
安全风险： 数据泄露、网络攻击、合规问题。

2. **What are the key elements of planning risk management?**

Risk Management Plan: Defines how to approach, plan, and execute risk management activities.
Risk Identification: Process of identifying risks that might affect the project.
Risk Analysis: Qualitative and quantitative methods to analyze risks.
Risk Response Planning: Strategies to enhance opportunities and reduce threats.
Risk Monitoring and Control: Tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness.

风险管理规划的关键要素是什么？

风险管理计划： 定义如何进行风险管理活动的方法、计划和执行。
风险识别： 识别可能影响项目的风险的过程。
风险分析： 使用定性和定量方法分析风险。
风险应对规划： 增强机会和减少威胁的策略。
风险监控和控制： 跟踪已识别的风险，监控残留风险，识别新风险，并评估风险过程的有效性。

Question: What is Scrum and how does it benefit project management?

Answer:

Scrum is an Agile framework for managing complex projects, typically software development. It promotes an iterative, incremental approach to optimize predictability and control risk. Scrum is well-regarded for its flexibility, collaborative nature, and ability to deliver high-value products to customers efficiently.

Overview of Scrum: Scrum divides projects into time-boxed iterations called "Sprints," usually lasting two to four weeks. Each Sprint aims to produce a potentially shippable product increment. The framework includes defined roles, events, and artifacts to guide the process.

Key Roles:

1. **Product Owner:** The Product Owner represents stakeholders and is responsible for maximizing the product's value. They manage the Product Backlog, ensuring it is clear, prioritized, and conveys what is needed for the product.
2. **Scrum Master:** The Scrum Master facilitates the process, helps remove impediments, and ensures the team adheres to Scrum practices. They act as a coach, supporting the team in self-organization and continuous improvement.
3. **Development Team:** This is a cross-functional group responsible for delivering the product increment. They self-organize to decide how to accomplish the work within a Sprint.

Core Events:

1. **Sprint Planning:** The team collaborates to define what can be delivered in the upcoming Sprint and how to achieve it. The Product Owner presents prioritized items from the Product Backlog, and the team selects those they commit to completing.
2. **Daily Scrum:** A short, daily meeting where team members synchronize their work and plan for the next 24 hours. Each member answers three questions: What did I do yesterday? What will I do today? Are there any impediments?
3. **Sprint Review:** At the end of each Sprint, the team demonstrates the increment to stakeholders, gathers feedback, and discusses what to do next. This ensures continuous alignment with stakeholder needs and expectations.
4. **Sprint Retrospective:** The team reflects on the Sprint, identifying what went well, what could be improved, and how to enhance their processes. This fosters a culture of continuous improvement.

Scrum Artifacts:

1. **Product Backlog:** An evolving list of product requirements ordered by priority. The Product Owner manages it, ensuring it reflects the current needs and goals of the project.
2. **Sprint Backlog:** A list of tasks the Development Team commits to completing during the Sprint. It includes selected items from the Product Backlog and a plan for delivering them.
3. **Increment:** The sum of all completed Product Backlog items at the end of a Sprint, representing a potentially shippable product.

Benefits of Scrum:

1. **Flexibility and Adaptability:** Scrum's iterative nature allows for frequent reassessment and adaptation of plans based on feedback and changing requirements.

2. **Improved Collaboration:** The defined roles and regular meetings foster better communication and collaboration among team members and stakeholders.

3. **Enhanced Transparency:** Scrum's emphasis on visibility ensures all stakeholders are aware of the project's progress, risks, and any issues.

4. **Faster Delivery:** By focusing on delivering small increments of value, Scrum enables quicker releases, allowing for faster feedback and adjustment cycles.

5. **Continuous Improvement:** Regular retrospectives promote a culture of learning and improvement, helping teams to enhance their processes continuously.

In conclusion, Scrum is a powerful framework that supports Agile principles, enabling teams to manage complex projects efficiently. By emphasizing collaboration, flexibility, and continuous delivery of value, Scrum helps organizations respond swiftly to changes and deliver high-quality products that meet customer needs.

问题：什么是 **Scrum**，它如何有助于项目管理**?**

回答：

Scrum 是一种用于管理复杂项目的敏捷框架，通常用于软件开发。它提倡一种迭代、增量的方法，以优化可预测性并控制风险。Scrum 因其灵活性、协作性和高效交付高价值产品的能力而备受推崇。

Scrum 概述：Scrum 将项目划分为称为"冲刺"的时间盒迭代，通常持续两到四周。每个冲刺的目标是生产一个可交付的产品增量。该框架包括定义的角色、事件和工件，以指导整个过程。

关键角色：

1. 产品负责人 **(Product Owner)**：产品负责人代表利益相关者，负责最大化产品的价值。他们管理产品待办事项列表，确保其清晰、优先排序并传达产品需求。

2. **Scrum Master**：Scrum Master 促进过程，帮助消除障碍，确保团队遵循 Scrum 实践。他们充当教练，支持团队自组织和持续改进。

3. 开发团队 **(Development Team)**：这是一个跨职能团队，负责交付产品增量。他们自组织决定如何在冲刺内完成工作。

核心事件：

1. 冲刺规划 **(Sprint Planning)**：团队协作定义在即将到来的冲刺中可以交付的内容以及如何实现。产品负责人展示优先级排序的产品待办事项，团队选择承诺完成的项目。

2. 每日 **Scrum (Daily Scrum)**：每日简短会议，团队成员同步工作并计划接下来 24 小时的工作。每个成员回答三个问题：昨天我做了什么？今天我将做什么？有没有任何障碍？

3. 冲刺评审 **(Sprint Review)**：每个冲刺结束时，团队向利益相关者展示增量产品，收集反馈，并讨论接下来的工作。这确保了与利益相关者需求和期望的持续对齐。

4. 冲刺回顾 **(Sprint Retrospective)**：团队反思冲刺，找出做得好的地方、可以改进的地方以及如何优化流程。这促进了持续改进的文化。

Scrum 工件：

1. 产品待办事项列表 **(Product Backlog)**：一个不断发展的产品需求列表，按优先级排序。产品负责人管理它，确保它反映项目的当前需求和目标。

2. 冲刺待办事项列表 **(Sprint Backlog)**：开发团队承诺在冲刺期间完成的任务列表。包括从产品待办事项列表中选定的项目和交付它们的计划。

3. 增量 **(Increment)**：每个冲刺结束时所有完成的产品待办事项的总和，代表一个可交付的产品。

Scrum 的优势：

1. 灵活性和适应性：Scrum 的迭代性质允许根据反馈和变化的需求频繁重新评估和调整计划。

2. 改进的协作：定义的角色和定期会议促进了团队成员和利益相关者之间更好的沟通与协作。

3. 增强的透明性：Scrum 强调可见性，确保所有利益相关者了解项目的进展、风险和任何问题。

4. 更快的交付：通过专注于交付小型增量价值，Scrum 使得更快速的发布成为可能，从而允许更快的反馈和调整周期。

5. 持续改进：定期的回顾促进了学习和改进的文化，帮助团队不断优化他们的流程。

总之，Scrum 是一个支持敏捷原则的强大框架，使团队能够高效地管理复杂项目。通过强调协作、灵活性和持续交付价值，Scrum 帮助组织快速响应变化并交付满足客户需求的高质量产品。