

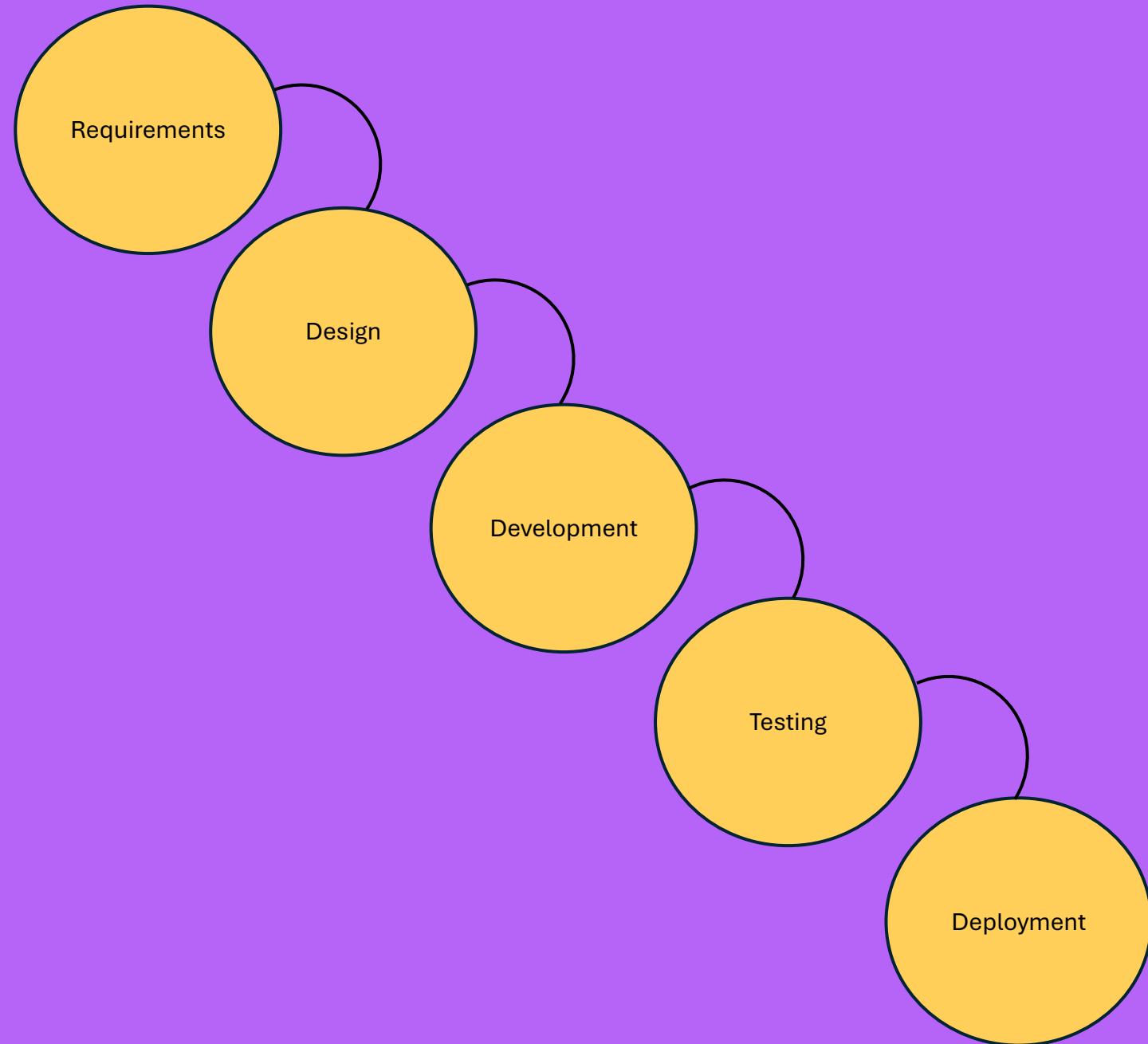
Value Creation Processes

Value Creation Process Type	Engineering or Development Name for Process	Strengths & Necessary Conditions for Success	Priority of Constraints (What is the most important driver?)
Serial	Waterfall, Phase-gate	• Manages cost risk (if management uses phase gates) • Known and agreed-upon requirements • Well understood system architecture • Well understood requirements that are stable and not in flux • Product development team is stable and dedicated properly to the initiative • Organization willing to accept risk of schedule delays due to defect identification and resolution that come much later in the process	1. Features set 2. Low defects 3. Time to release
Iterative	IBM Rational Unified Process (RUP), Spiral, evolutionary prototyping.	• Manages technical risk • Ever-evolving requirements	1. Features set 2. Low defects 3. Time to release
Iterative/Incremental	Lean, Agile (variations such as Scrum, Extreme Programming [XP])	• Manages both schedule and technical risk • Handles emergent requirements • Requires deep collaboration (easier to do with a co-located integrated team)	

Serial (or Waterfall) Model

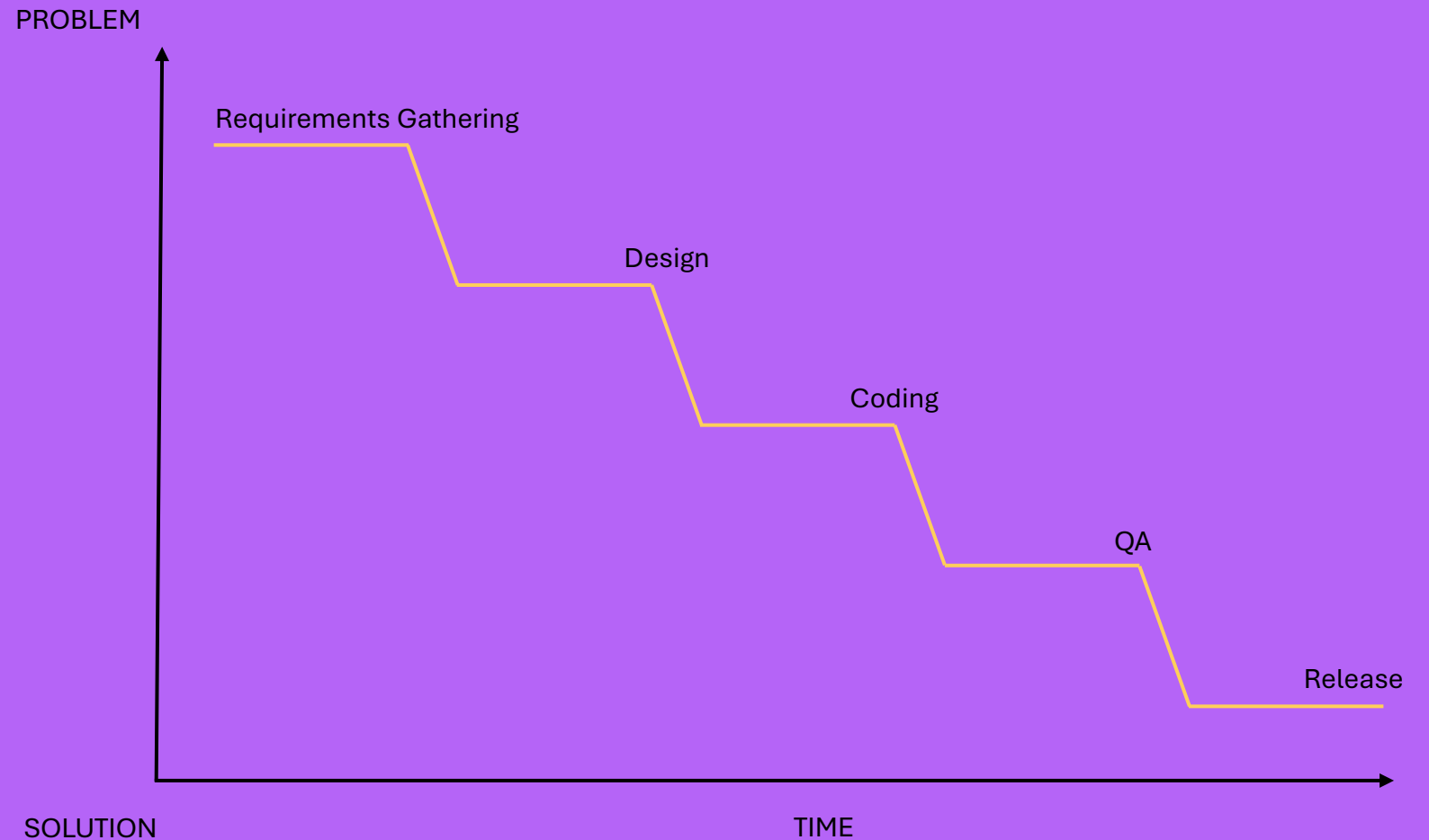
Serial processes like Waterfall and Phase-Gate are described as linear, structured approaches to product development. The **Waterfall** model moves sequentially through predefined stages—such as requirements, design, development, testing, and deployment—without revisiting earlier phases.

Similarly, the **Phase-Gate** process divides the development into phases, with "gates" at the end of each phase to review progress and decide whether to proceed, modify, or stop. These methods are ideal for projects with clear requirements and low uncertainty but can lack flexibility for iterative or rapidly changing needs.



The Agile Theory

Agile is a mindset and approach for managing product development through small, iterative cycles of planning, execution, and review. It focuses on rapid feedback and collaboration among cross-functional teams, aiming to deliver customer value early and adapt to change rather than adhering to a rigid plan. By breaking work into smaller increments, teams can quickly validate ideas, incorporate stakeholder input, and continuously refine the product's direction. This approach emphasizes flexibility, customer-centricity, and iterative learning to effectively navigate the uncertainties of product development.



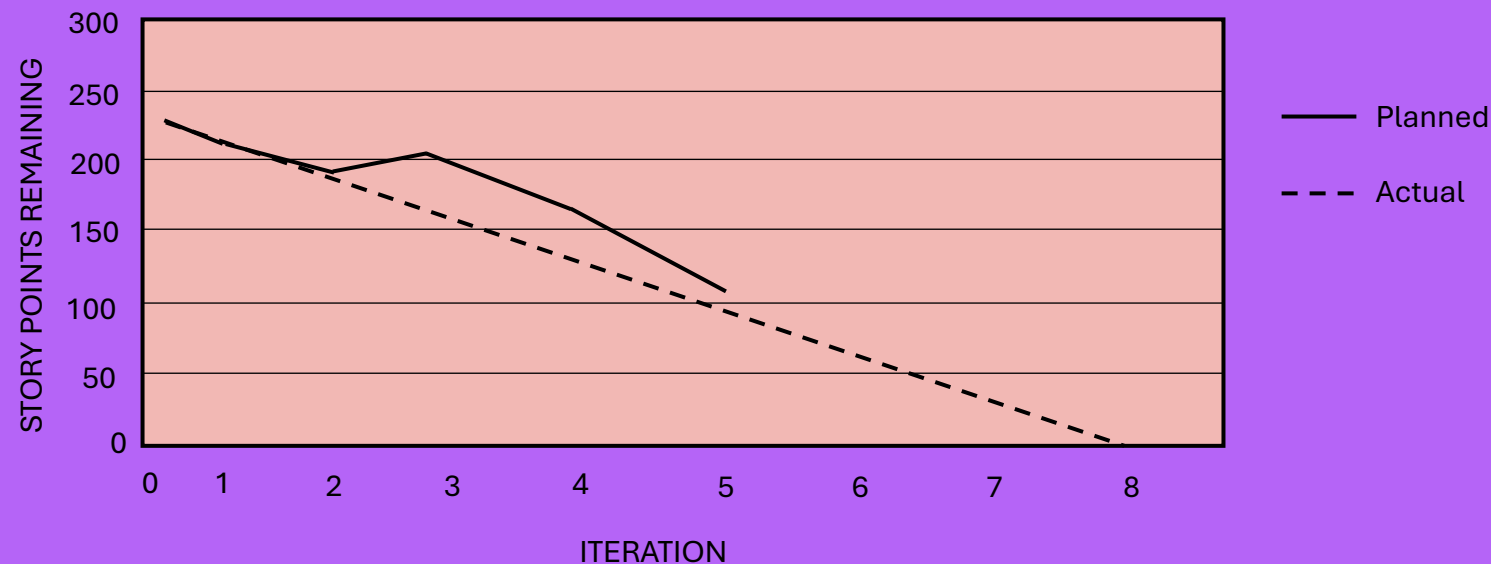
Agile Planning, Iterative Development, & Visual Management

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Agile emphasizes visual management so team members and management can see how projects are progressing. In addition to burndown charts, it's helpful to use physical or electronic product backlogs and task boards.

Agile Release Burndown Chart



TO DO	IN PROGRESS	DONE
5 POINTS As a...	15 POINTS As a...	3 POINTS As a...
10 POINTS As a...	5 POINTS As a...	10 POINTS As a...
3 POINTS As a...		5 POINTS As a...

Scrum Process Diagram

The Scrum Process Diagram, as described, represents a framework for iterative product development focused on delivering incremental value. It begins with a **Product Backlog** that captures all features, enhancements, and tasks prioritized by the Product Owner.

During each **Sprint Planning**, the team selects items from the backlog to create a **Sprint Backlog** for the iteration. The team collaborates daily in **Daily Scrums** to track progress and address obstacles. At the end of the sprint, a **Sprint Review** showcases the completed work to stakeholders, followed by a **Sprint Retrospective** to identify improvements for future sprints. The cycle repeats, ensuring continuous value delivery and iterative refinement.

