The Software Development Life Cycle (SDLC)

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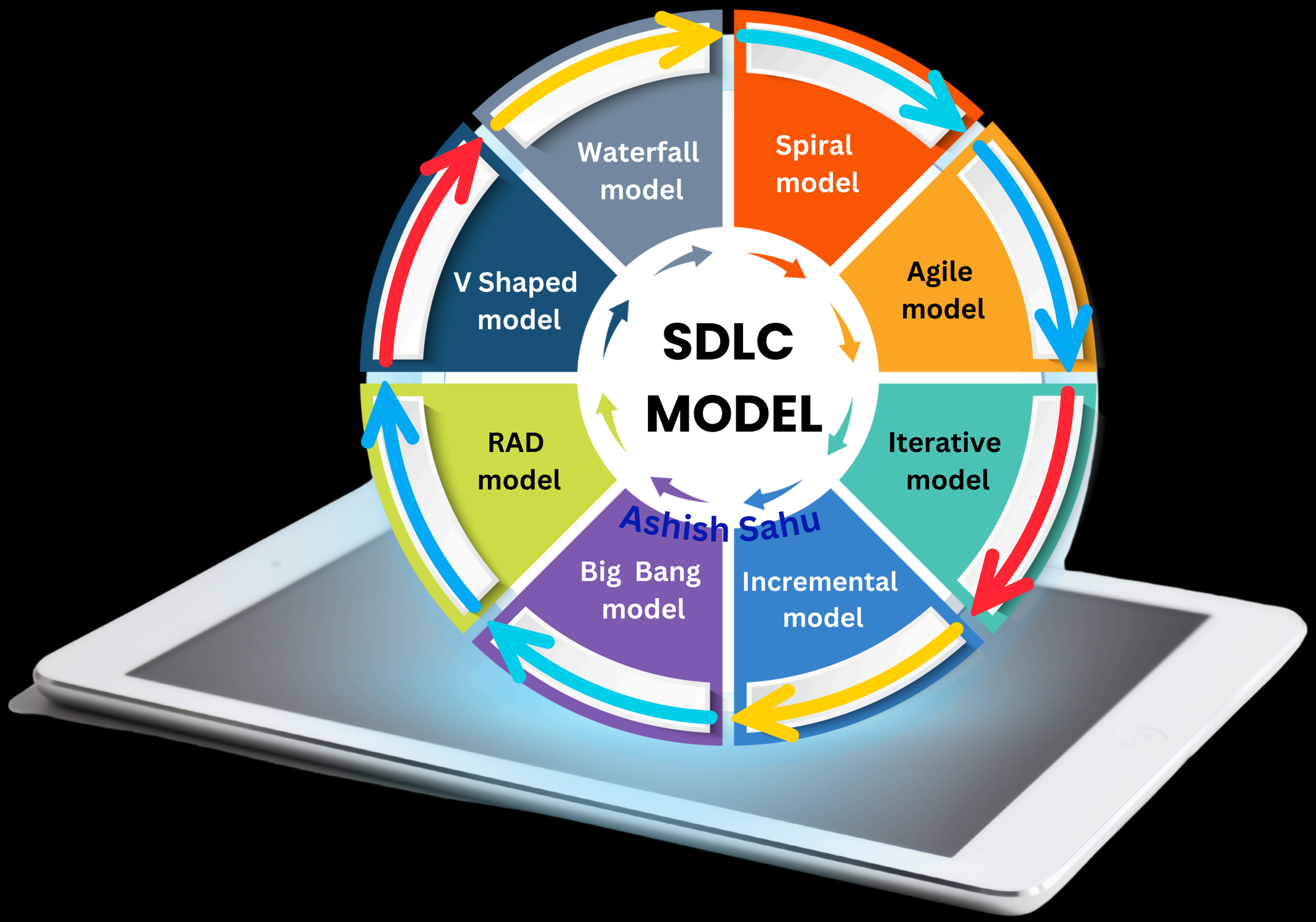

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Waterfall Model

- Follows a rigid, sequential approach.
- Each phase must be completed before moving to the next.
- Provides a clear structure and documentation.
- Lacks flexibility; hard to adjust once a phase is finished.
- Best for projects with fixed, well-defined requirements.
- Not ideal for dynamic environments requiring adaptability.

Requirements

Design

Programming

Testing

Deploying

Maintenance

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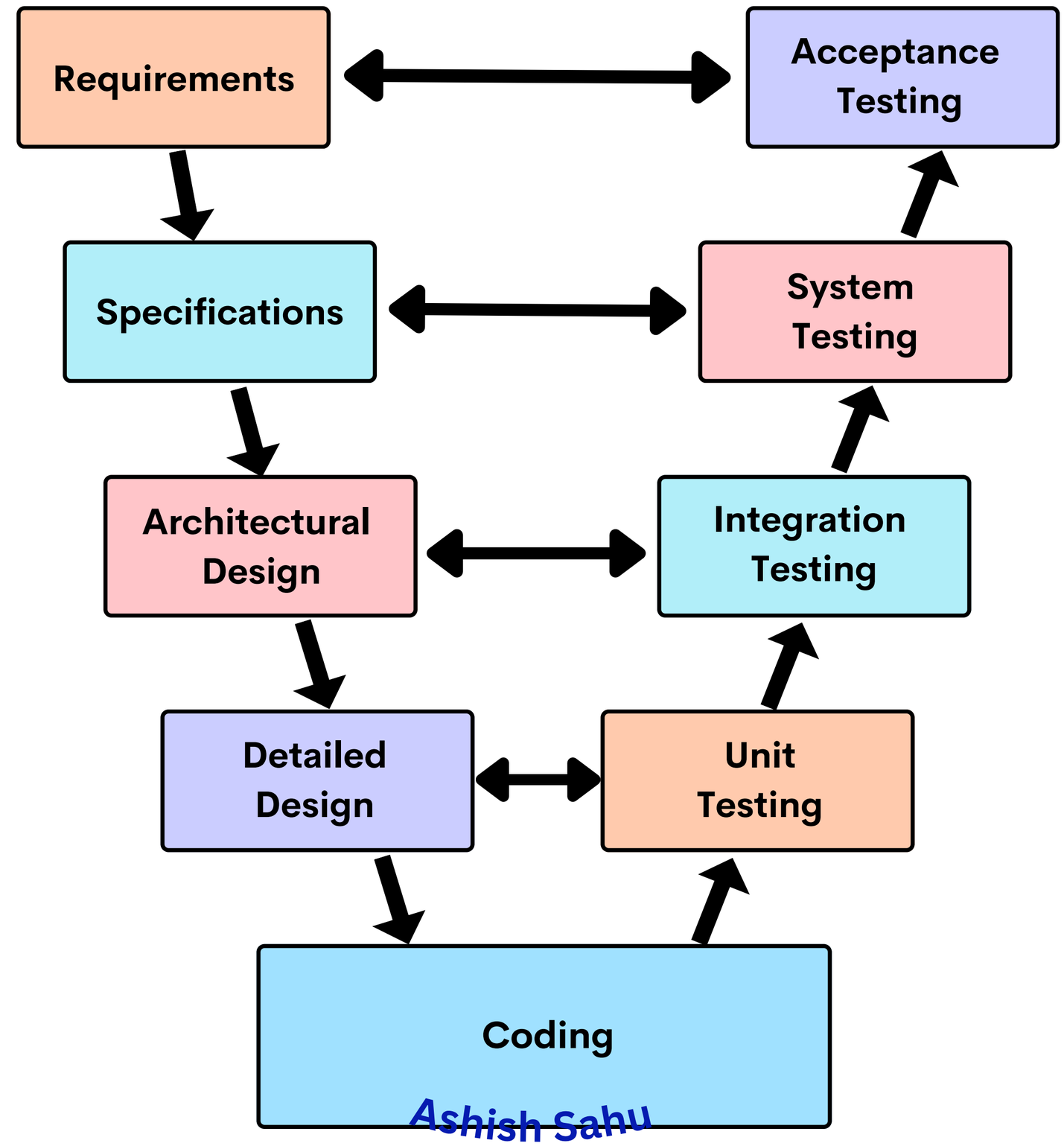
V-Shaped Model

- The V-Model enhances the Waterfall model.
- Emphasizes testing and validation throughout development.
- Each development phase has a corresponding testing phase.
- Ensures rigorous validation at every stage.
- Minimizes defects and improves product quality.



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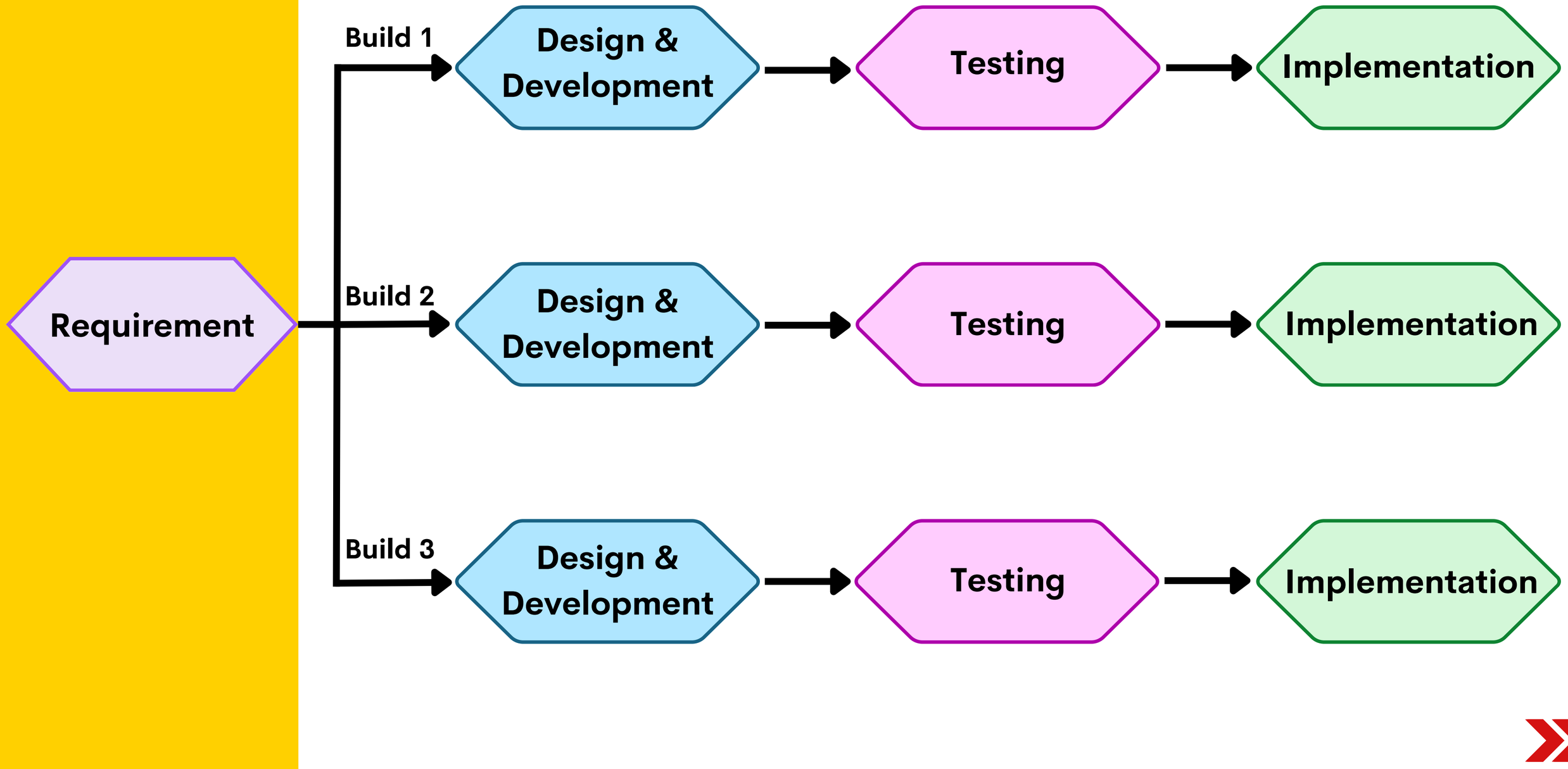
Incremental Model

- The Incremental approach divides the project into phases.
- Each phase delivers a specific feature or functionality.
- Allows partial system releases during development.
- Provides users early access to features.
- Enables user feedback for improvements.
- Guides adjustments in later stages.



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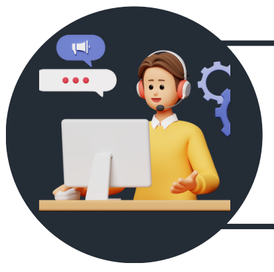
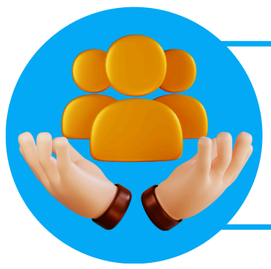
Big Bang Model

- The Big Bang model develops the entire system in one go.
- No clear phases or iterative cycles are followed.
- High risk and uncertainty due to lack of structure.
- Minimal or no testing during development.
- All system components are launched simultaneously.
- Predicting final outcomes is highly challenging.

Time



Efforts



Resources

BIG BANG

Software

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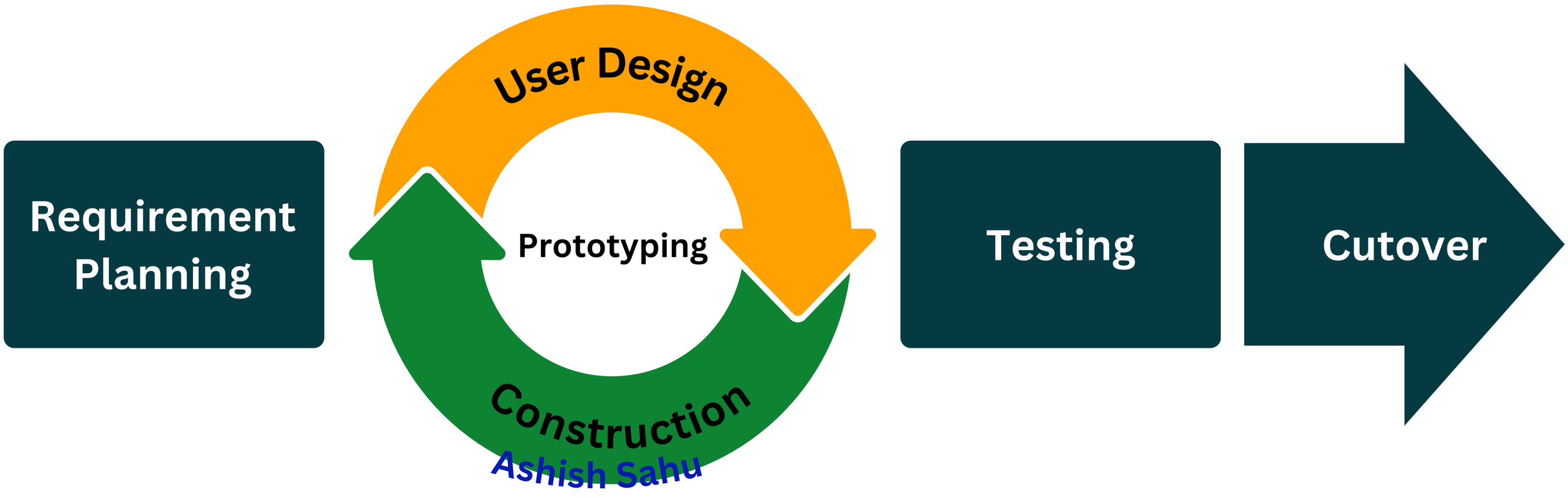
RAD Model

- Emphasizes rapid development.
- Builds and refines prototypes continuously.
- Ensures feedback-driven improvements.
- Adapts to changing requirements.
- Reduces time-to-market.
- Encourages teamwork between developers and users.
- Enhances functionality through iterations.



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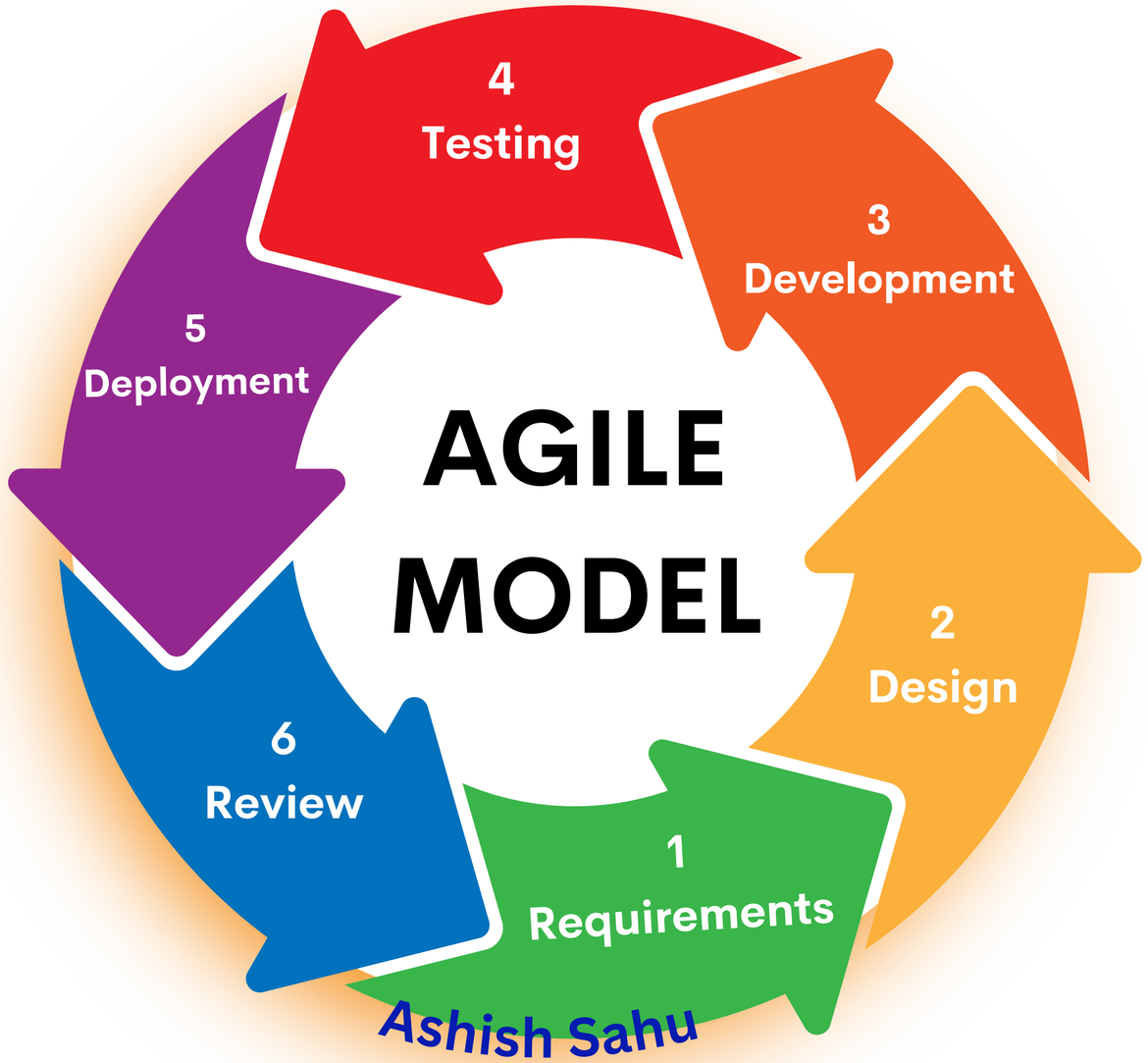
Agile Model

- Agile is a flexible software development approach.
- Focuses on teamwork, customer feedback, and incremental delivery.
- Uses short cycles (sprints) for continuous progress.
- Enables quick releases and frequent updates.
- Allows changes in project requirements at any stage.
- Ideal for projects with evolving needs.



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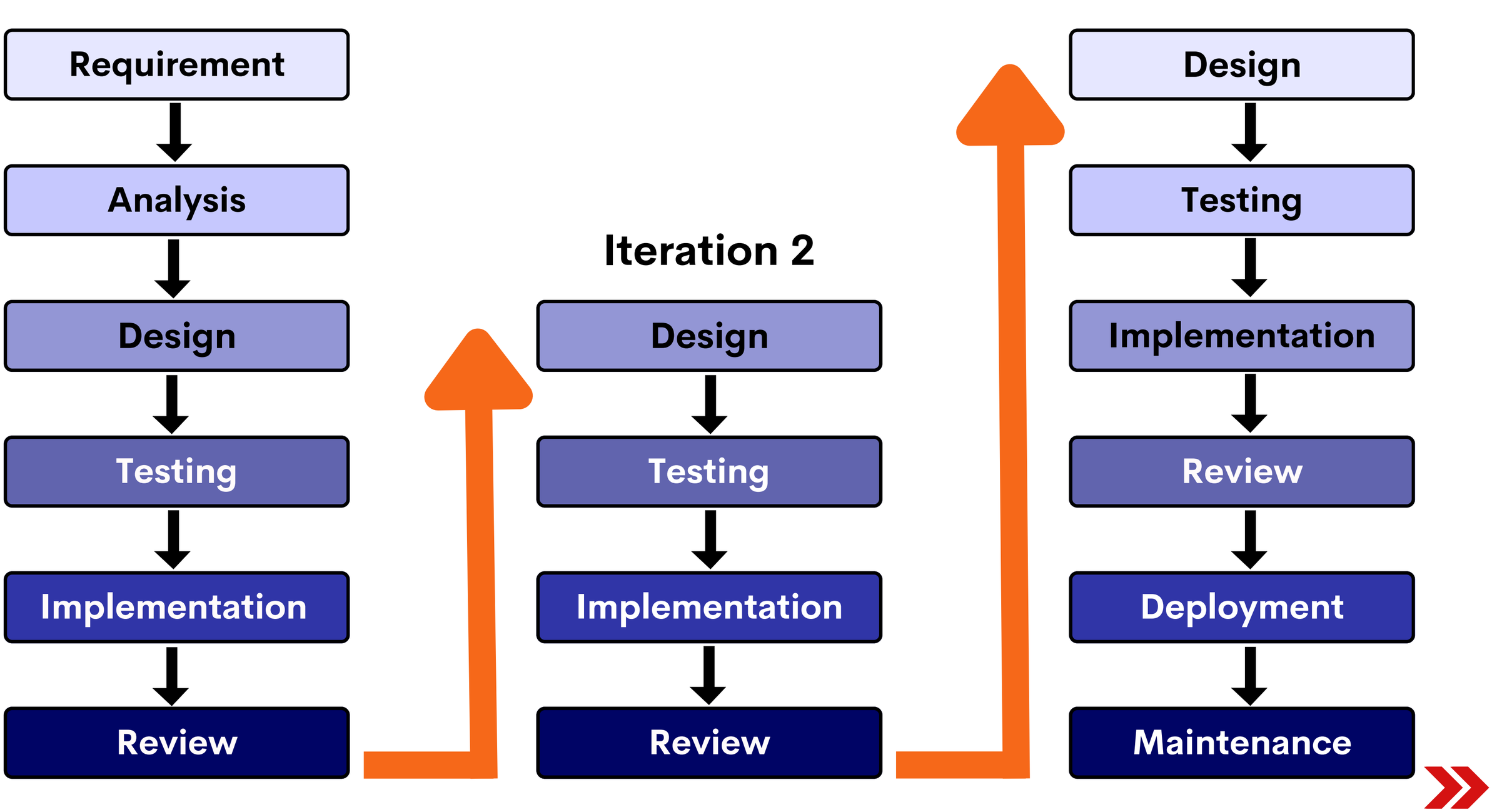
Iterative Model

- Software is developed in recurring phases.
- Each cycle enhances and evolves the product.
- Insights from earlier iterations drive improvements.
- Promotes adaptability and continuous refinement.
- Allows modifications during the development cycle.



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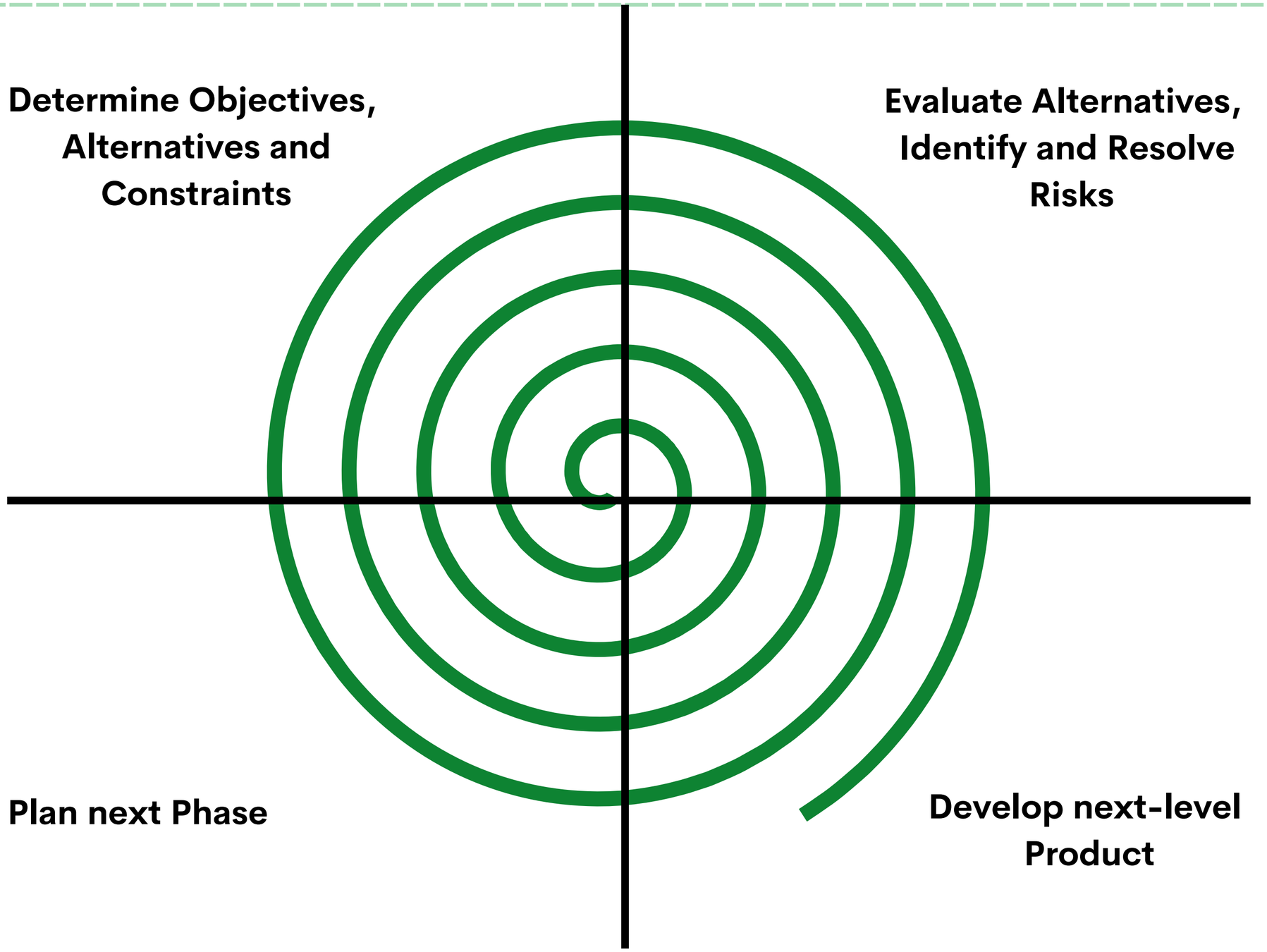
Spiral Model

- Combines iterative development with comprehensive risk assessment.
- Follows cyclical phases including planning, design, development, and risk evaluation.
- Prioritizes early risk detection and proactive mitigation strategies.
- Best suited for large, complex projects requiring thorough risk management.



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