R package Admiral Experience Sharing at ADaM

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Core Value of AI-Generated ADaM Using R Code

Boost Efficiency, Shorten Processes

- Accelerate ADaM dataset creation
- Automate repetitive tasks
- Flexibly adapt to evolving study needs

Improve Data Quality, Reduce Human Errors

- Ensure consistency and traceability through automation
- Standardized code structure for easy collaboration and maintenance

A Flexible Alternative to SAS

- Open-source R reduces reliance on costly SAS licenses
- Seamless integration with AI for better performance and scalability

Enhance Competitiveness, Expedite Submissions

- Shorten analysis cycles to fast-track drug approval
- Reallocate resources toward high-value tasks

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Integrating R Ecosystem for Extended Applications

Leveraging Industry Tools for Enhanced Management

- **Industry Standards**: Utilize the mature `admiral` package within the industry as a basis to ensure that our solutions align with the best practices.
- **Code Management**: Build a robust code management framework using the tools and processes provided by the `admiral` package.
- **Continuous Updates**: Keep up with updates from the `admiral` package to ensure that our systems and practices are continuously optimized and improved.
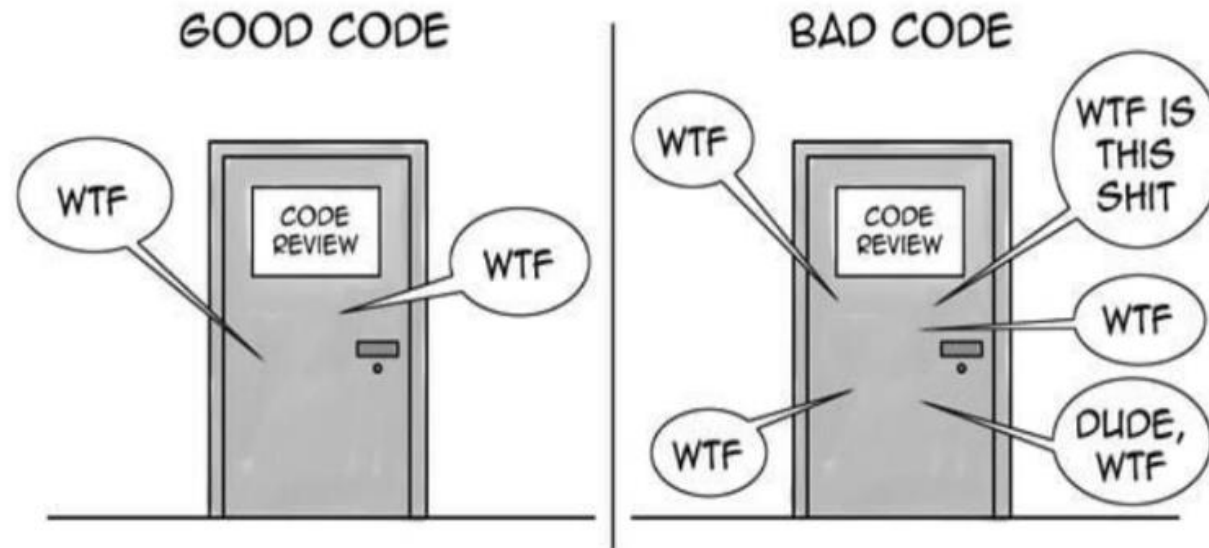
Why use admiral

🎁 **Good program design is the ability to easily understand what the program does by reading the code, not just how it does it.**

Clean Code

Concise

Single Responsibility

GOOD CODE — WTF, WTF (CODE REVIEW)

BAD CODE — WTF, WTF IS THIS SHIT, WTF, DUDE, WTF, WTF (CODE REVIEW)

THE ONLY VALID MEASUREMENT OF CODE QUALITY: WTFs/MINUTE

Why use admiral

🎁 **Good program design is the ability to easily understand what the program does by reading the code, not just how it does it.**

Clean Code

Concise

Single Responsibility

"The code should be small so that we can easily understand the intent of the function by just reading it."

> "The first rule of functions is that they should be small. The second rule of functions is that they should be smaller than that." — Robert C. Martin, Clean Code: A Handbook of Agile Software Craftsmanshi

Why use admiral

🎁 **Good program design is the ability to easily understand what the program does by reading the code, not just how it does it.**
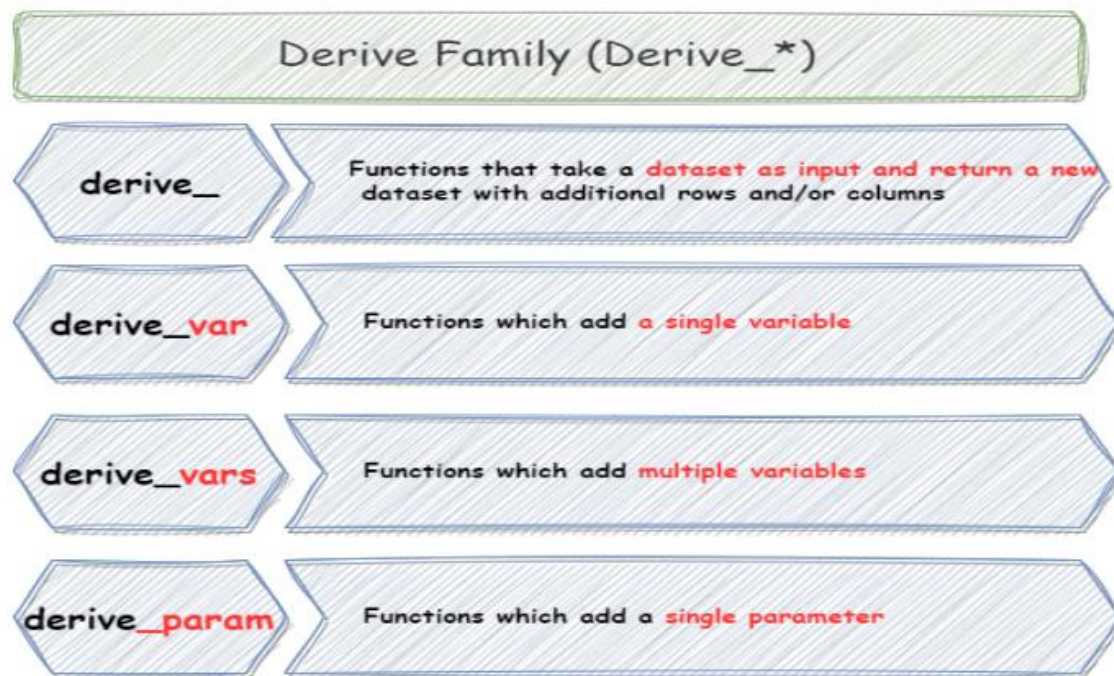
Clean Code

Concise

Single Responsibility

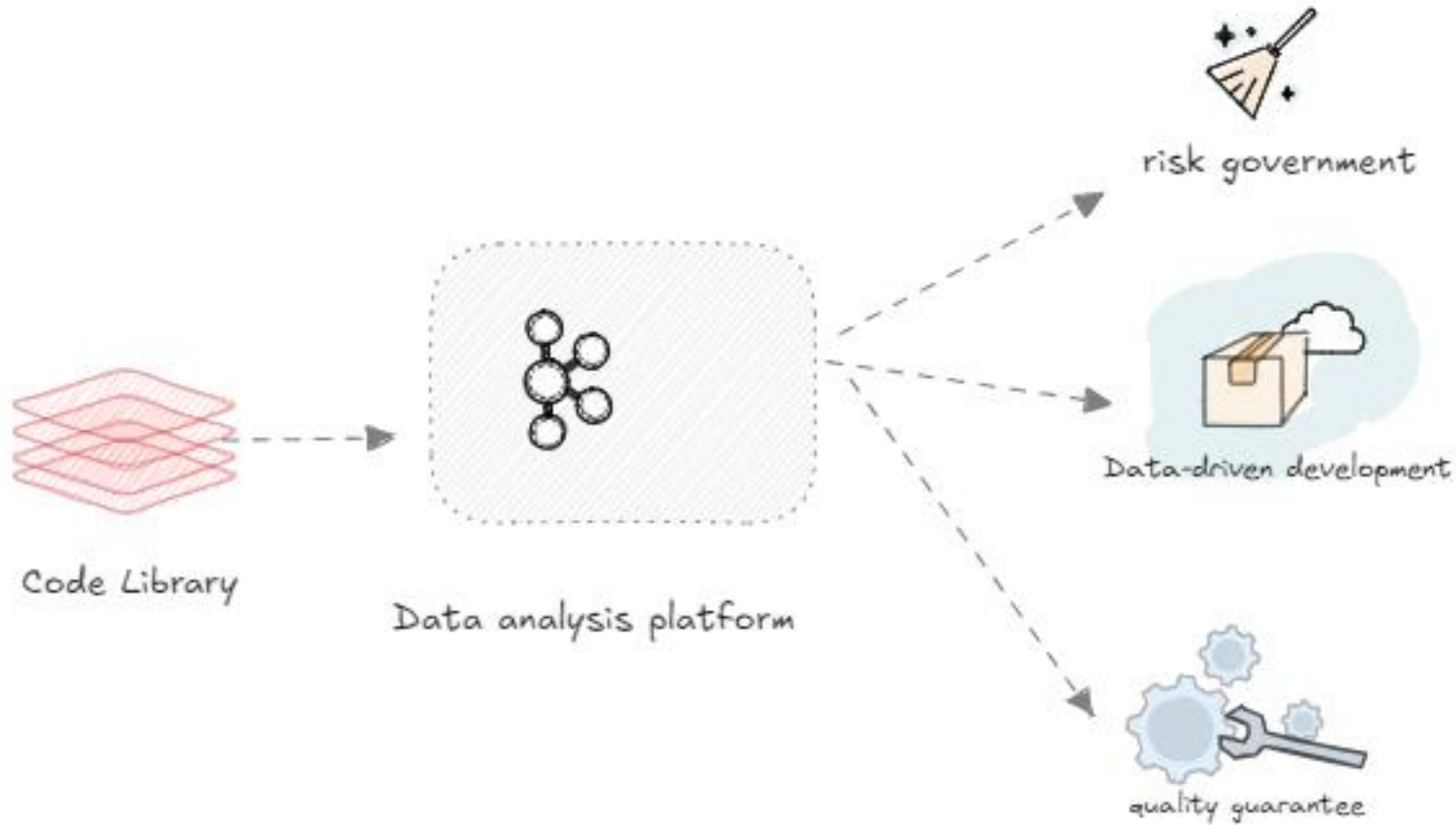*"Functions should do one thing. They should do it well. They should do it only."*

> Functions should have a single responsibility and not be overly complex. Breaking down tasks into smaller, single-purpose functions improves maintainability.
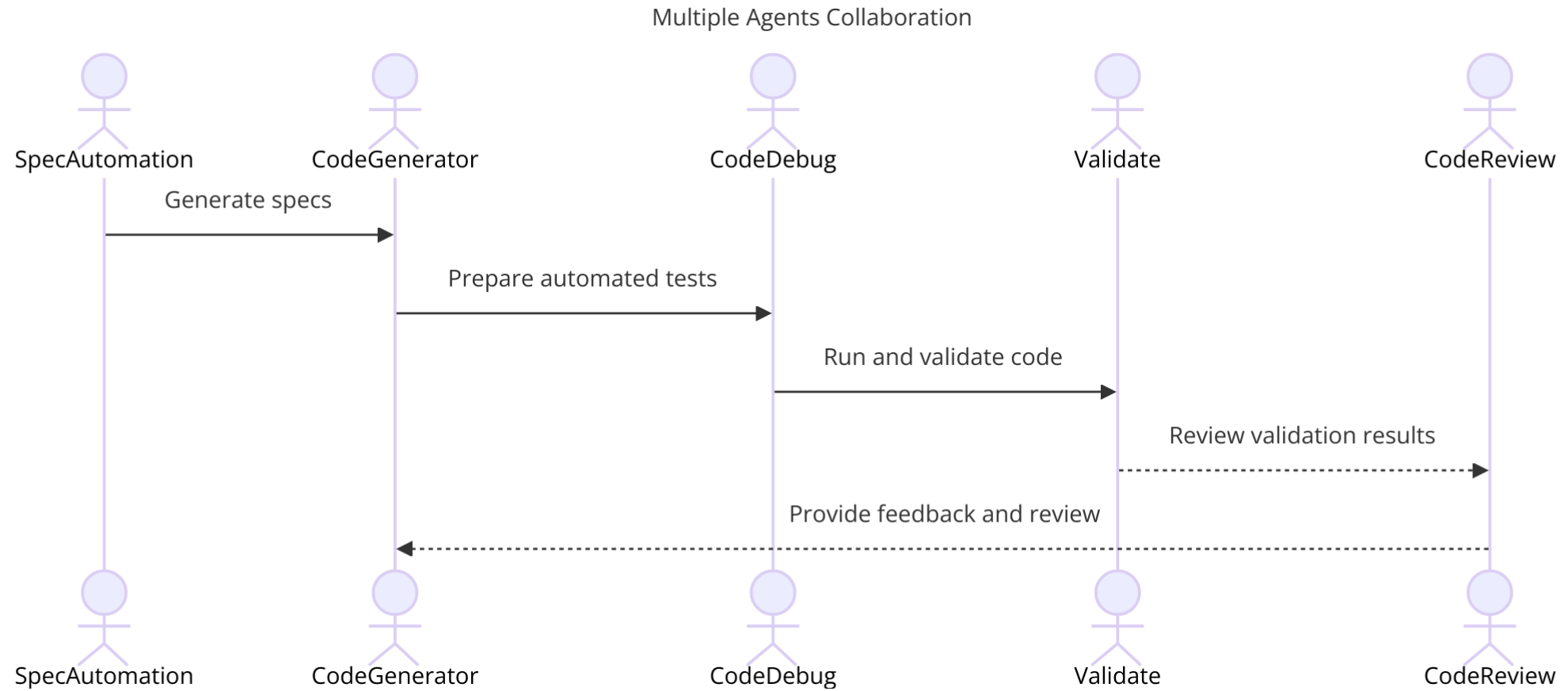
Design of admiral – Derive Family

> Use Intention-Revealing Names: "The name of a variable, function, or class, should answer all the big questions. It should tell you why it exists, what it does, and how it is used."
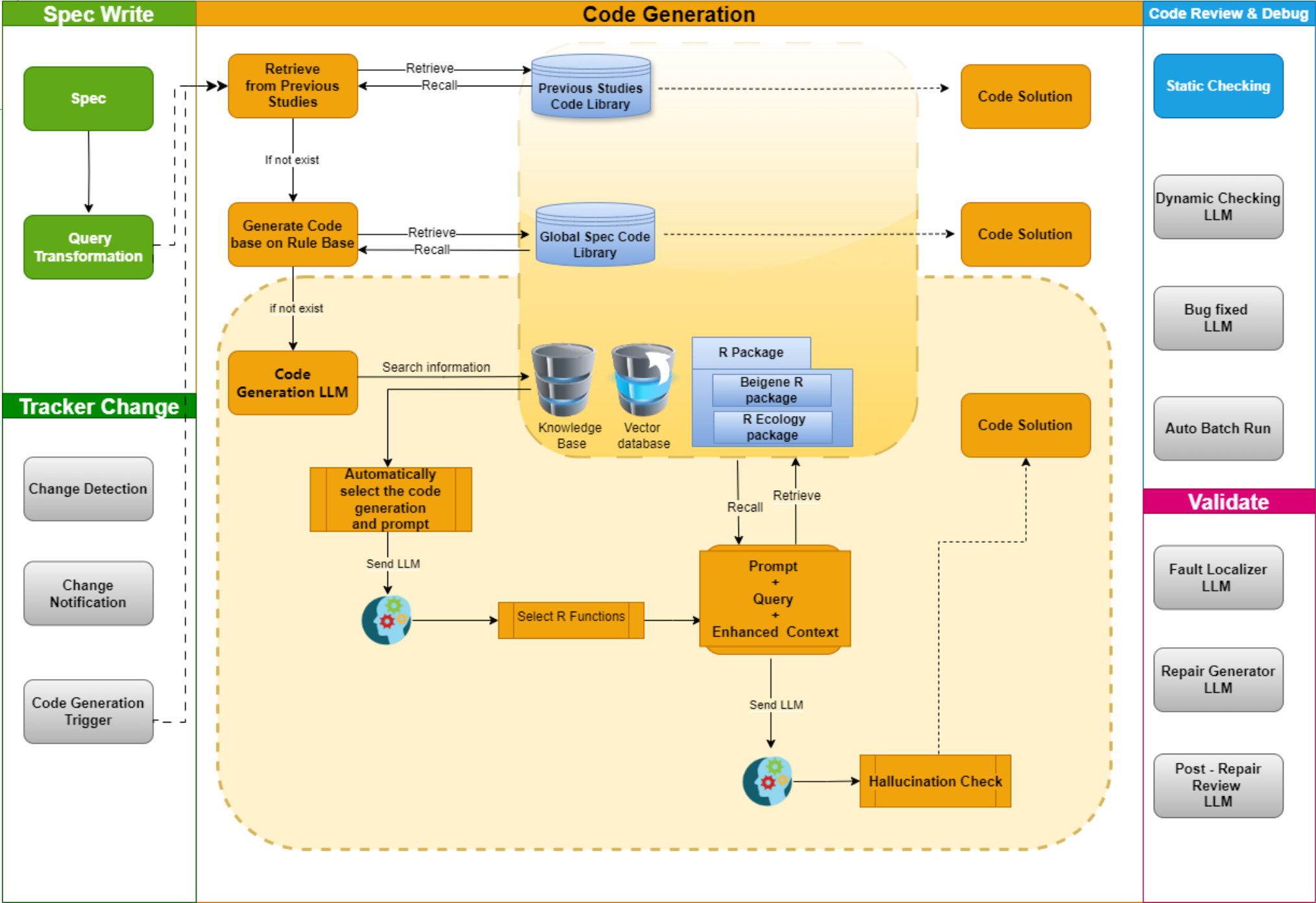
Derive Family (Derive_*)

derive_	Functions that take a *dataset as input and return a new* dataset with additional rows and/or columns
derive_var	Functions which add *a single variable*
derive_vars	Functions which add *multiple variables*
derive_param	Functions which add a *single parameter*

Code Intelligence and Repository Management for Optimization and Insights

Code Library

Data analysis platform
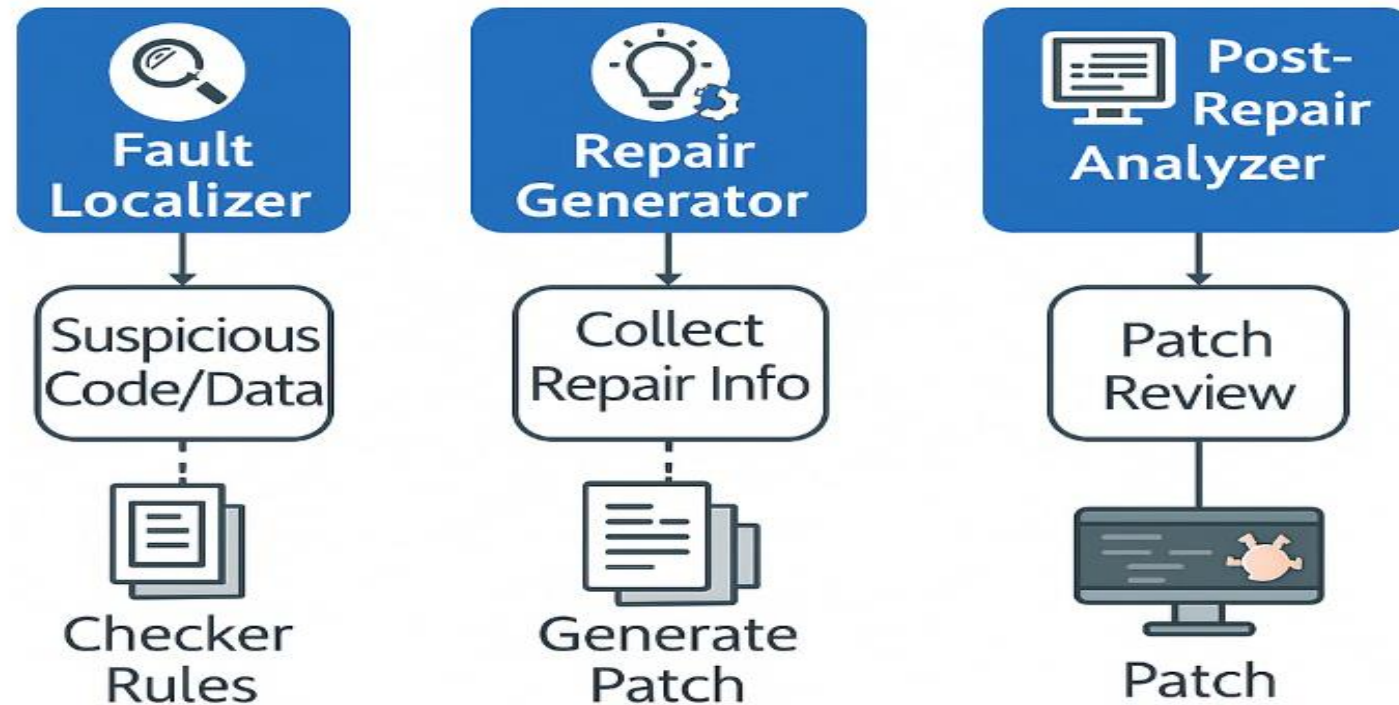
risk government

Data-driven development

quality guarantee

Collaborative Multi-Agents

FAULT RESOLUTION FRAMEWORK: IDENTIFICATION, REMEDIATION, AND POST-FIX EVALUATION

Vision and Strategic Direction: Empowering Platform Development Through AI Generate R code

Reduce Resources and Improve Efficiency

- Use AI to optimize resource allocation, save time and effort, and simplify operations.
- Enhance development productivity while delivering higher-quality
- results.

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Build Smarter and More Automated Processes

Leverage AI to automate code generation and reduce repetitive tasks.

Streamline workflows for a faster and more intuitive platform experience.

Project Management

Use AI to analyze and adjust plans in real-time, making projects more predictable and agile.

Maintain clear communication and collaboration throughout every stage.

Respond Faster and Deliver High-Quality Results

- Apply AI-driven tools to shorten timelines and ensure reliable outcomes.
- Provide intelligent support for stronger product performance

Optimize Testing and Integration

Automate testing with AI to improve code quality and stability.

Speed up deployment cycles while minimizing errors.

Enhance Version Control and Management

- Manage versions and dependencies seamlessly.
- Enable efficient collaboration with clear and unified development strategies.

谢 谢！

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