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# Unleash Your DevOps Strategy by Synchronizing Application and Database Changes

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# Agenda

- The Challenges of Bringing Database Development into DevOps
- Redefining Database Development using Toad
- Making Database Development a part of CI/CD
- Resources
- Q&A

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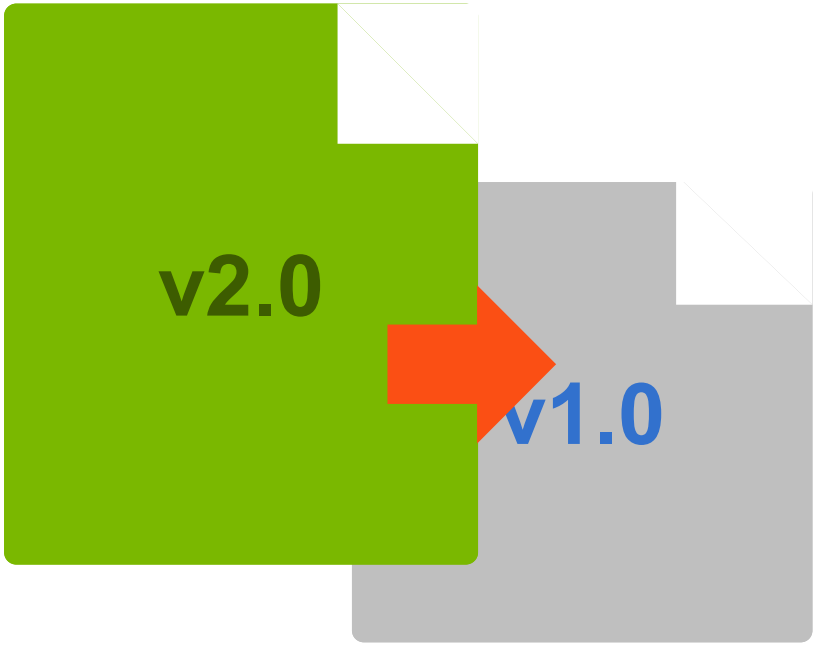
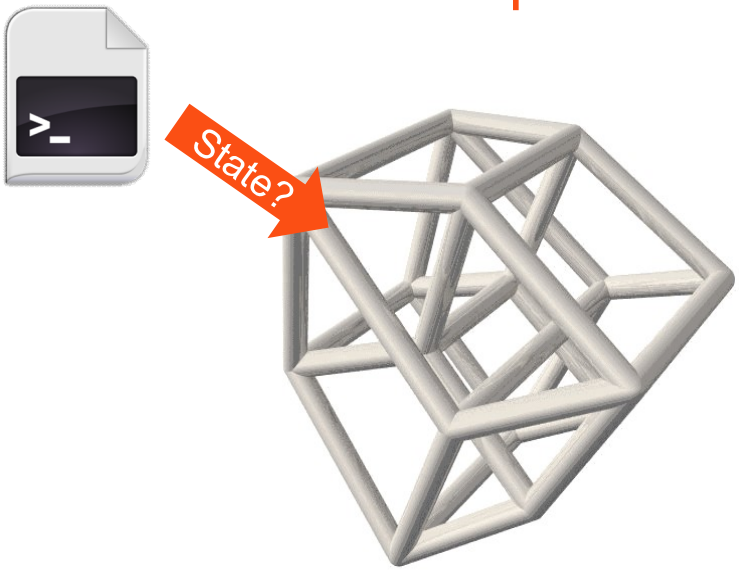
# Database Environments are Inherently Risky

## Application Update




## Database Update

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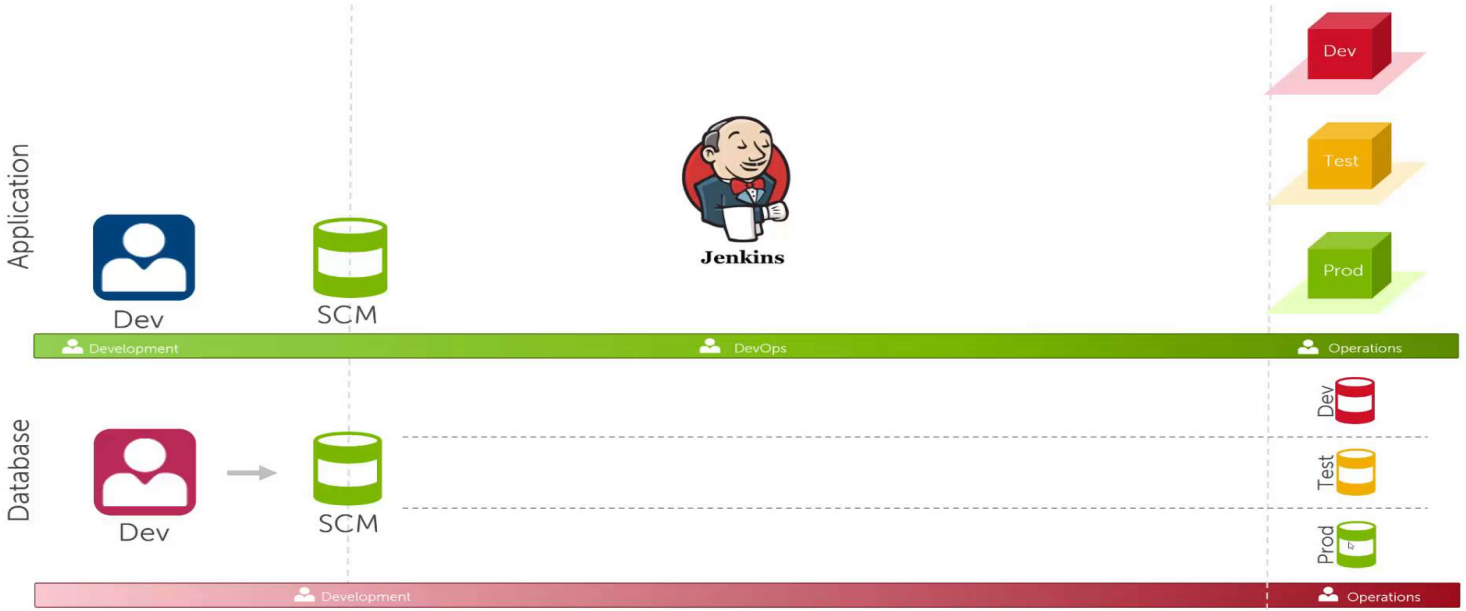
# The Challenge of Agile Database Development

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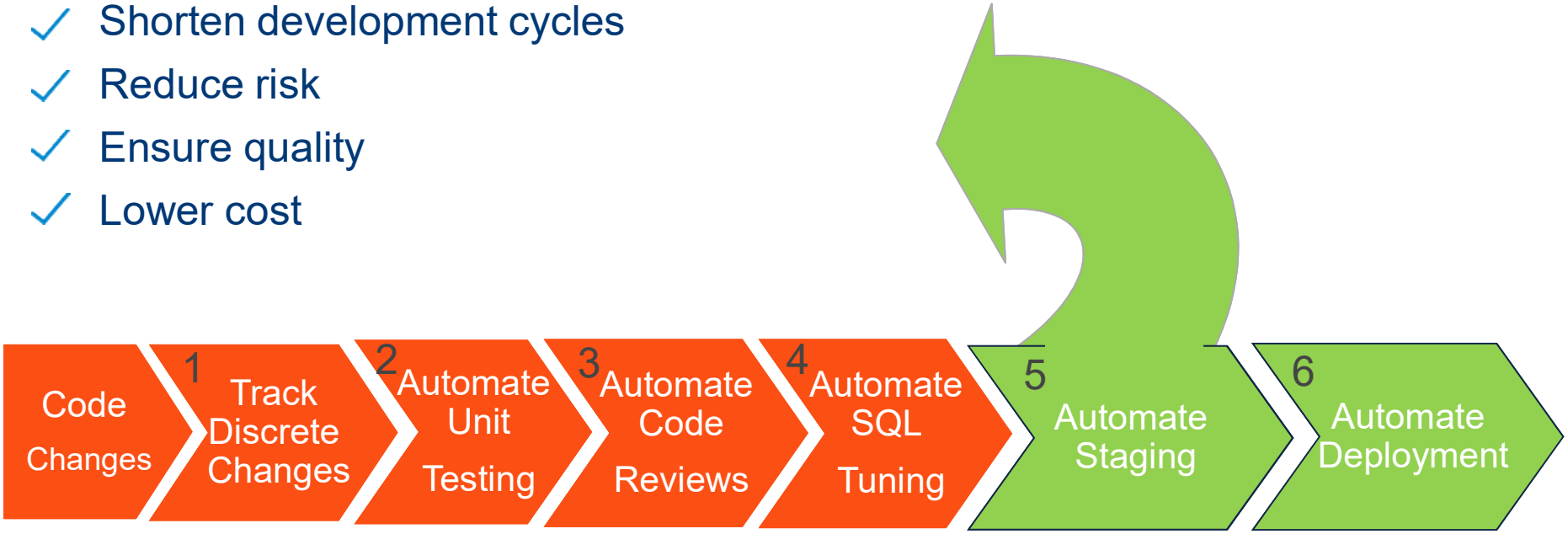
# Redefining Oracle Database Development using Toad

- ✓ Shorten development cycles
- ✓ Reduce risk
- ✓ Ensure quality
- ✓ Lower cost

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# Track changes with Team Coding & VCS integration

## Why is this important?

- Ensures correct code versions are used during build.
- Ensures ongoing PL/SQL code/object integrity.
- Provides true collaborative development.

- **Benefits:**
  - **Intuitive** – enables you to work directly on DB objects without worrying about checking-out/-in files.

•**Improves standards**– helps promote a team-based environment for ensuring code changes/updates are consistent. Eliminates backdoor changes.

•**VCS enabled** – works with version control systems like Git, Microsoft TFS, CVS, ClearCase, Perforce, and SVN.

•**Productivity** – seamlessly check-in and check- out objects directly from within Toad.

•**Policies** – optionally force PL/SQL regression test executions and minimum code review standards prior to code check-in.

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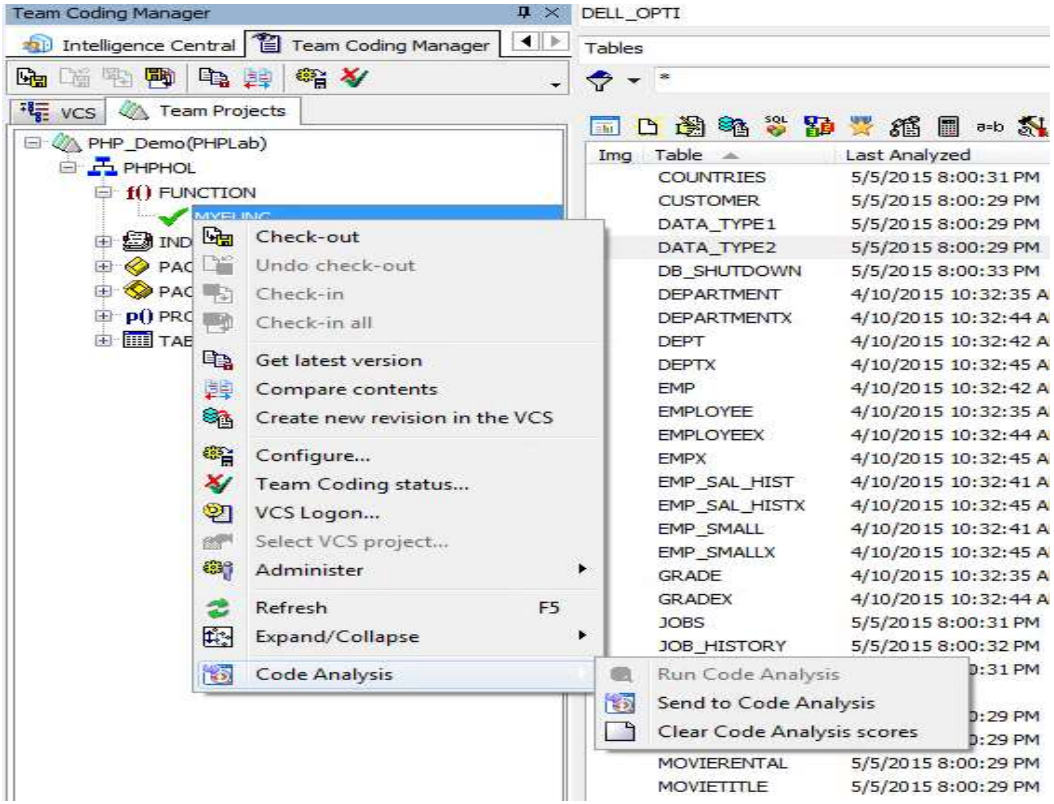
# Track changes with Team Coding & VCS integration

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# Automate PL/SQL unit testing with Toad Code Tester

## Why is this important?

- Ensures tests cover all operational use cases.
- Reduces the risk of bugs in production.
- Becomes part of Continuous Integration process.

## Benefits:

- **Intuitive and fast** – enables you to think about code behavior as you define your tests – test code is generated automatically. Simply run your code and create your tests.

- **Persistent** – all unit tests are preserved for the life of the code, facilitating full regression test/code coverage reporting during ongoing code changes.

- **VCS enabled** – optionally require full regression test cycle during code check-in.

- **CI integration** – unit test executions become callable from a CI build process.

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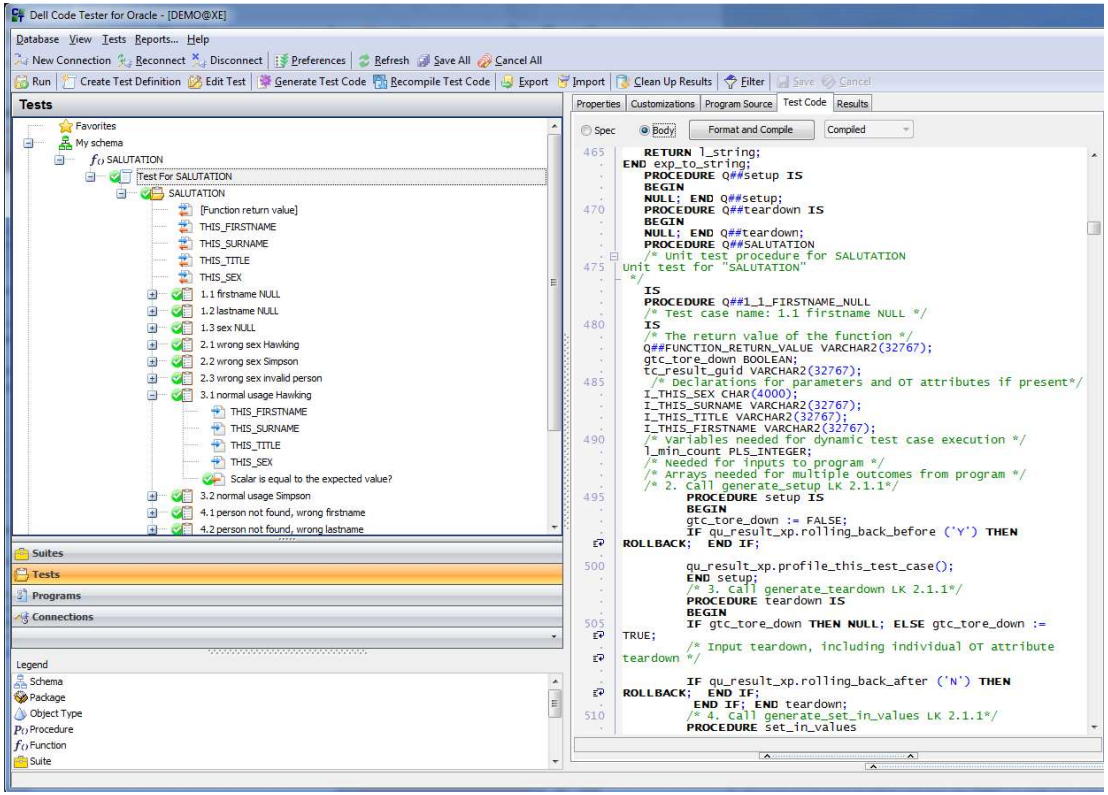
# Automate PL/SQL unit testing with Toad Code Tester

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# Automate code reviews with Toad Code Analysis

## Why is this important?

- Ensures consistent code quality standards are applied across an entire project.
- Becomes part of Continuous Integration process.

## Benefits:

- **Intuitive and fast** – continuous parsing of code enables you to instantly see where code quality violations occur as you code.
- **Customizable** – different sets of rules can be defined per project – rules can be customized.
- **VCS enabled** – optionally require minimum code quality level during code check-in.
- **CI integration** – code reviews become callable from a CI build process.

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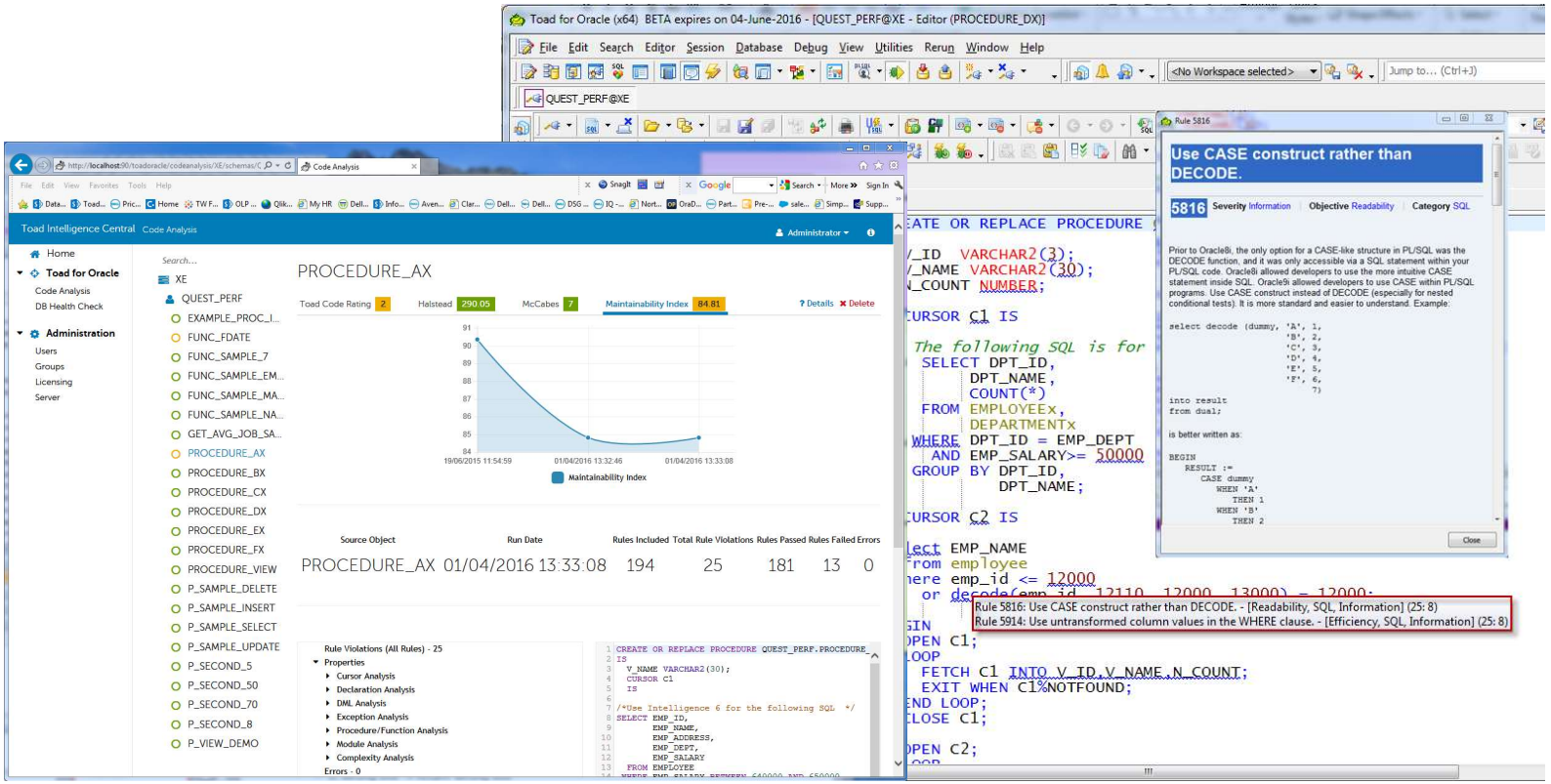
# Automate code reviews with Toad Code Analysis

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# Automate SQL tuning with Toad Auto Optimize SQL

## Why is this important?

- Provides a really simple way to tune poor SQL and PL/SQL before production.
- Cost of fixing in production can be exponentially higher and very disruptive for business.

## Benefits:

- **Intuitive and fast** – based on patented re-write technology to directly fix the problem – not just offer advice.
- **No hidden costs** – does not use the Oracle EE Management Packs.
- **Evidence based** – provides different alternatives based on pre-defined performance goals.
- **Advanced optimization** – more advanced SQL optimization capabilities such as indexing available depending on developer's experience and permissions.

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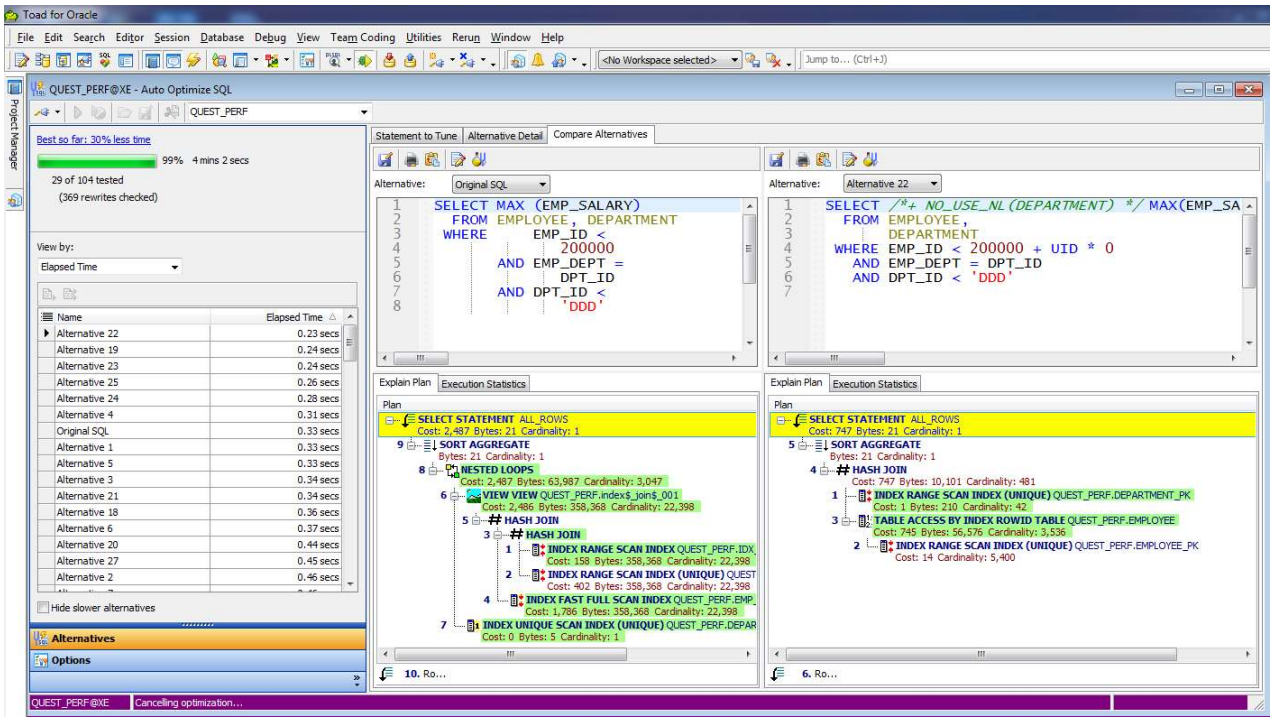
# Automate SQL tuning with Toad Auto Optimize SQL

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# Making Database Development a part of Continuous Integration

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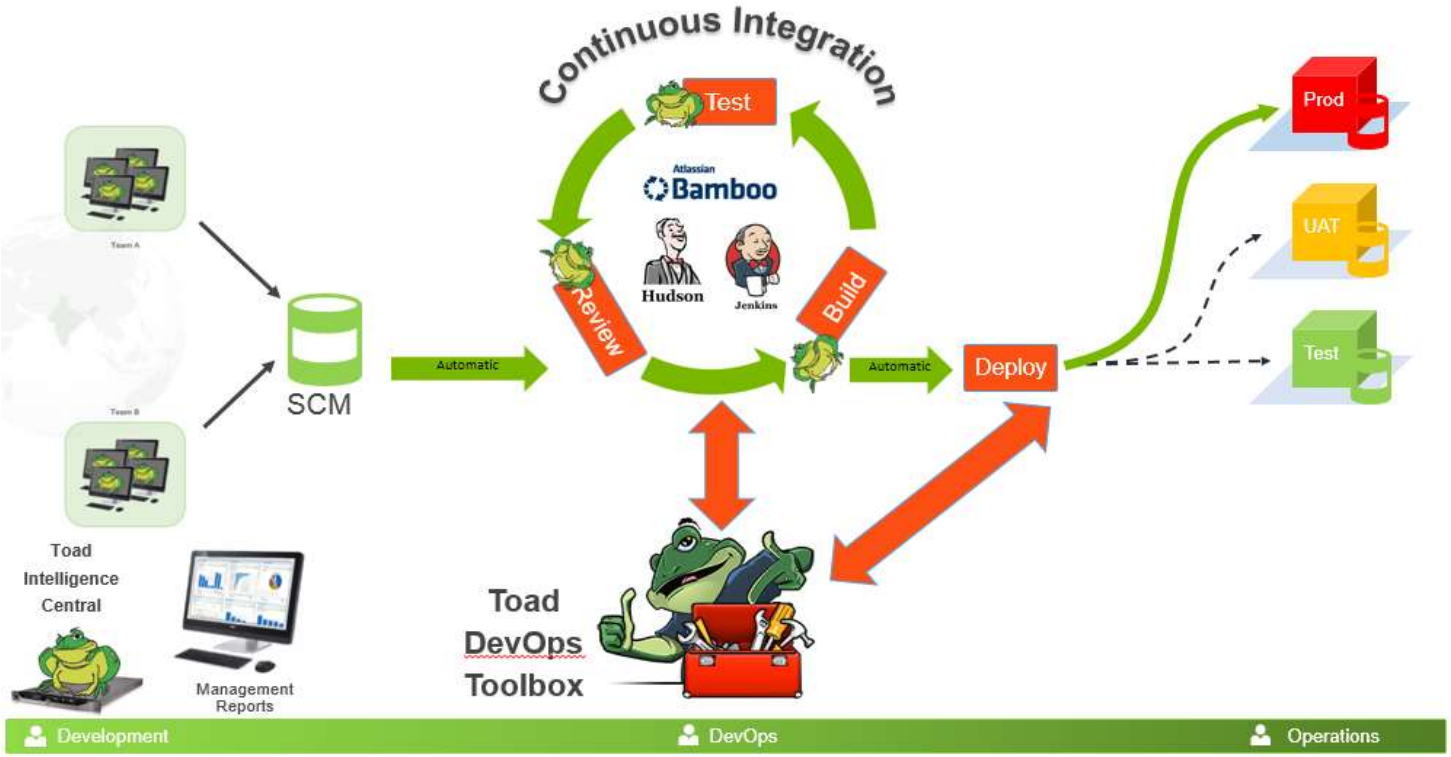
# Getting inside the CI process with Toad DevOps Toolbox

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# Toad DevOps Toolbox Features

- PL/SQL unit testing
- Static code review
- Database compare
- Schema compare
- Data compare
- Script execution

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# Publishing Management Reports with Toad Intelligence Central

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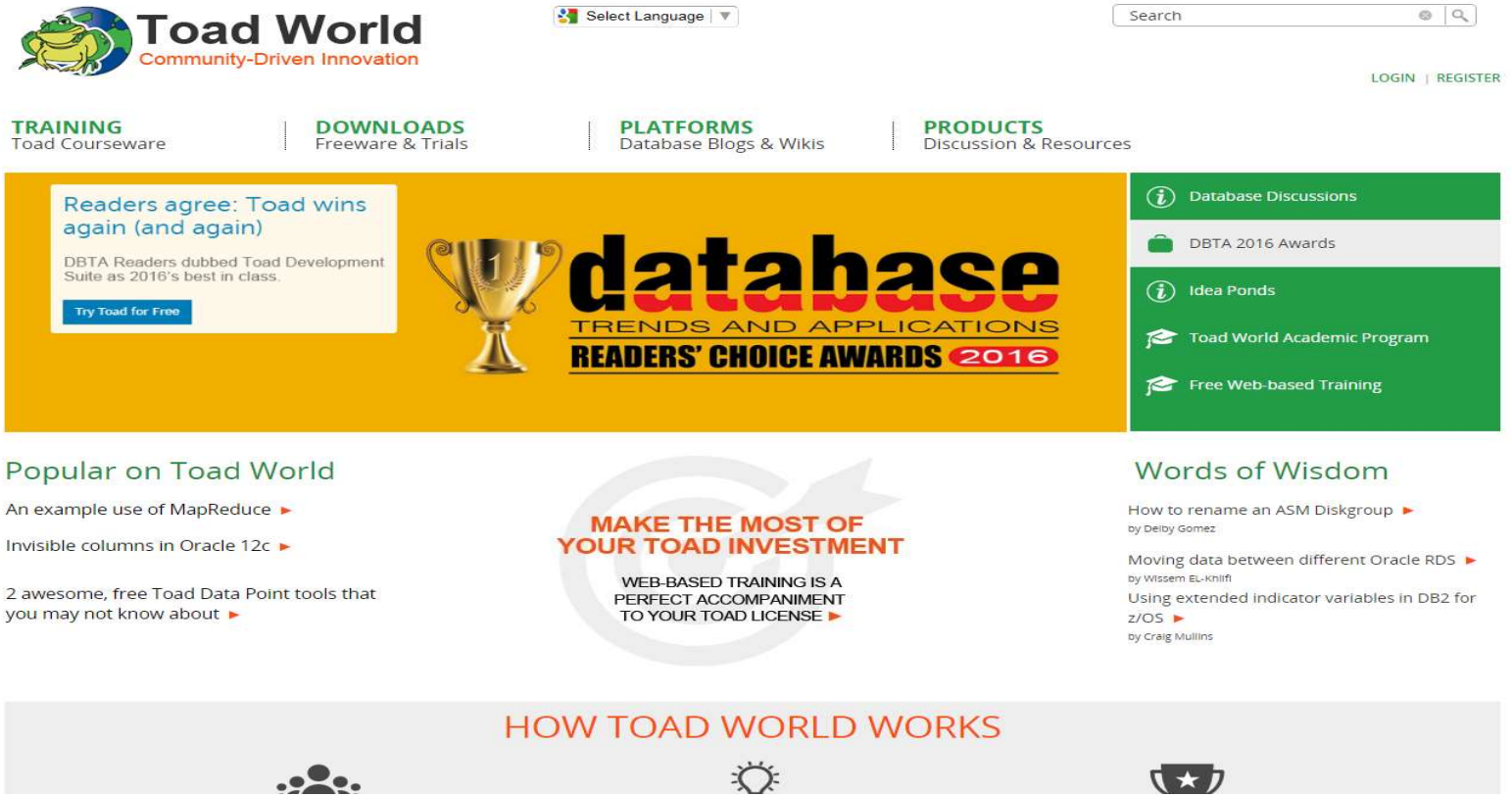
# Resources. Use Toad World

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# Resources

Your One-Stop Resource for Education, Expertise and Collaboration www.toadworld.com

- Exclusive freeware downloads
- Free web-based product training
- Blogs and user forums
- Toad tips and tricks videos
- Direct access to Toad experts
- Toad news, events and more

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# Resources on Agile DB Development using Toad

- eBook – "Getting Agile with Database Development"
- eBook – "DevOps for Oracle Databases"
- Technical Brief - Toad Agile Cookbook – Part 1, Part 2, Part 3
- White Paper – DevOps Comes to Database Developers and DBAs – It's About Time
- Video Q&A with The Register – What's Holding Back Database Teams in DevOps?

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# Web-based training

- Self-paced, hands-on, **free!**
- Eight Toad for Oracle courses available:
  - Toad Fundamentals
  - DBA: Database Maintenance
  - DBA: Performance Management
  - DBA: Change Management
  - Dev: Functional Code Testing & Debugging
  - Dev: Version Control & Code Review
  - Dev: PL/SQL Profiling & SQL Optimization
  - What's New in Toad for Oracle 2016
- Register during installation or on Toad World
- Includes a course completion certificate

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