Module 1

Starting with Performance Tuning

Created by Teerachai Laothong

Agenda

- Introduction to Performance Tuning
- Performance Tuning Process
- Causes of Bad Performance
- Test Environment
- Oracle Memory Architecture

Introduction to Performance Tuning

Performance Tuning Process

1. Investigate the problem
2. Assume a solution, a test case and rollback strategy
3. Implement the solution
4. Test the solution
5. Repeat until problem solved

1. Investigate the problem

In today's multi-layered applications, it's simple to say "the database is slow" when an application is suffering poor performance, but there will be many cases when the database is performing very well but the application responsiveness is very weak.

2. Assume a solution, a test case and rollback strategy

Once we have identified and delimited the database area involved in the performance problem, we can assume a solution to the issue. As previously stated, both a test case and a rollback strategy are necessary—the former to check the proposed solution, the latter to revert back if the proposed solution wasn't satisfactory.

3. Implement the solution

Be sure that the solution is implemented using reproducible steps, especially when the task is quite complex or we have to test the solution in a staged database before the production.

4. Test the solution

At the end of the implementation, we have to test the solution to verify its correctness—probably in a test environment—and to know if the expected performance gain has been reached.

Causes of Bad Performance

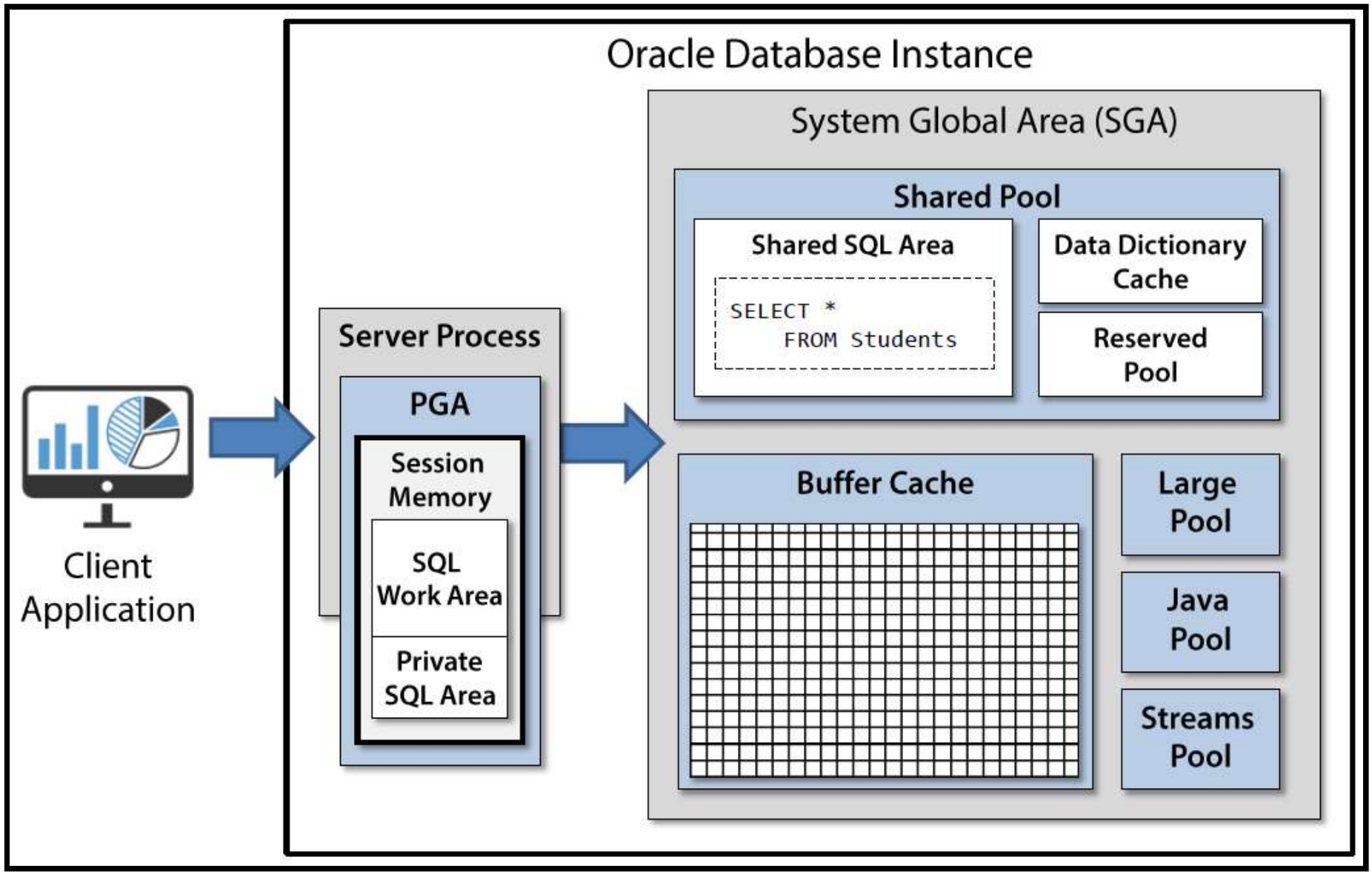
The most common performance problems in an Oracle database related to application design and coding

- Incorrect session management
- Poorly designed cursor management
  - Binding variables
  - Cursor sharing
  - Non-set operations
- Inadequate relational design
- Improper use of storage structures

Test Environment

- Use a full size database for performance testing and tuning
  - Analyze SQL statements during development
  - Test compoenents as they are completed
- Use a full size database during test phases

Oracle Memory Architecture



THE END

- Source code & documentation
- Back to Course Outline