



Performance Template



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Agenda

- ❖ Performance metrics
- ❖ Monitoring vs. Profiling
- ❖ Development process

Before Getting Started

- ❖ Performance tuning is largely an art.
- ❖ There is no one approach that is always necessarily the right approach.
- ❖ And, there are performance issues which will require very specialized expertise to identify the root cause, and / or be able to recommend a solution.



Performance Metrics

Performance Metrics

- ❖ Throughput
- ❖ Runtime response time
- ❖ Footprint
- ❖ Perceived performance (for GUI applications)

Perceived Performance

- ❖ End-user experience on GUI applications:
 - Rarely measure performance with a stopwatch
 - How fast something *feels*, not how fast it is
- ❖ Ways to improve how fast your users feel without actually making anything run faster
 - Changing the mouse cursor to a waiting cursor
 - Using multiple background threads
 - Showing the progress bar

Perceived Performance

❖ Start up time:

- Lazy initialization is often useful.
- Applets:
 - Use Jar files to minimize requests.
 - Install on client system if possible.
 - Obfuscators and size reduction tools.
 - Run empty applet to get VM loaded.
- Applications:
 - Separate initialization thread.
 - Minimize dependencies for start screen.



Monitoring & Profiling

Definition: Performance Monitoring

- ❖ An act of *non-intrusively* collecting or observing performance data from an operating or running application.
- ❖ Typically a “preventative” or “proactive” type of action. But, could be an initial step in a reactive action.
- ❖ Can be performed in production, or qualification, or development environments.
- ❖ Helps identify or isolate potential issues without having a severe impact on runtime responsiveness or throughput.
- ❖ Often times *monitoring* crosses over into trouble-shooting or service-ability.

Definition: Performance Profiling

- ❖ An act of collecting or observing performance data from an operating or running application.
- ❖ Usually more intrusive than monitoring.
- ❖ Usually a narrower focus than monitoring.
- ❖ Typically a reactive type of activity. Could be a proactive activity in situations where performance is a well defined systemic quality or requirement for a target application.
- ❖ Seldom performed in production environments.
- ❖ Commonly done in qualification, testing or development environments.

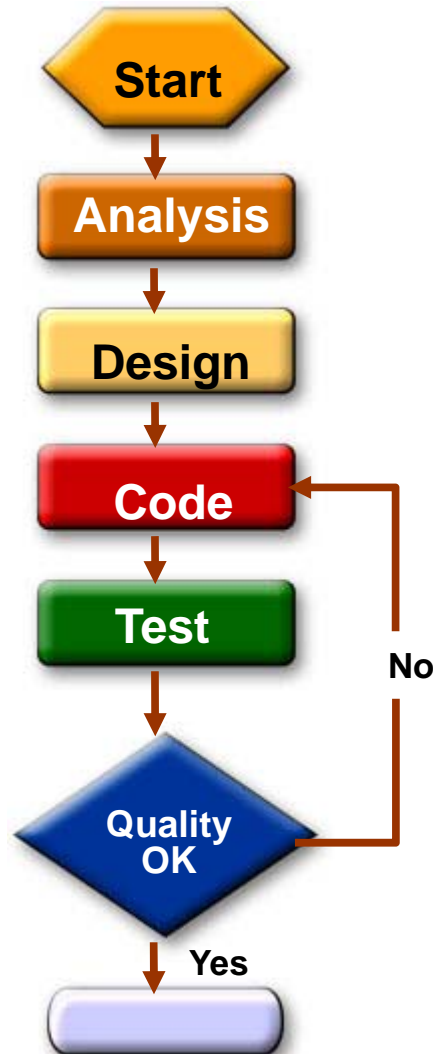
Definition: Performance Tuning

- ❖ An act of changing tune-ables, source code and/or configuration attribute(s) for the purposes of improving application responsiveness and/or application throughput.
- ❖ Usually results from monitoring and/or profiling activities.

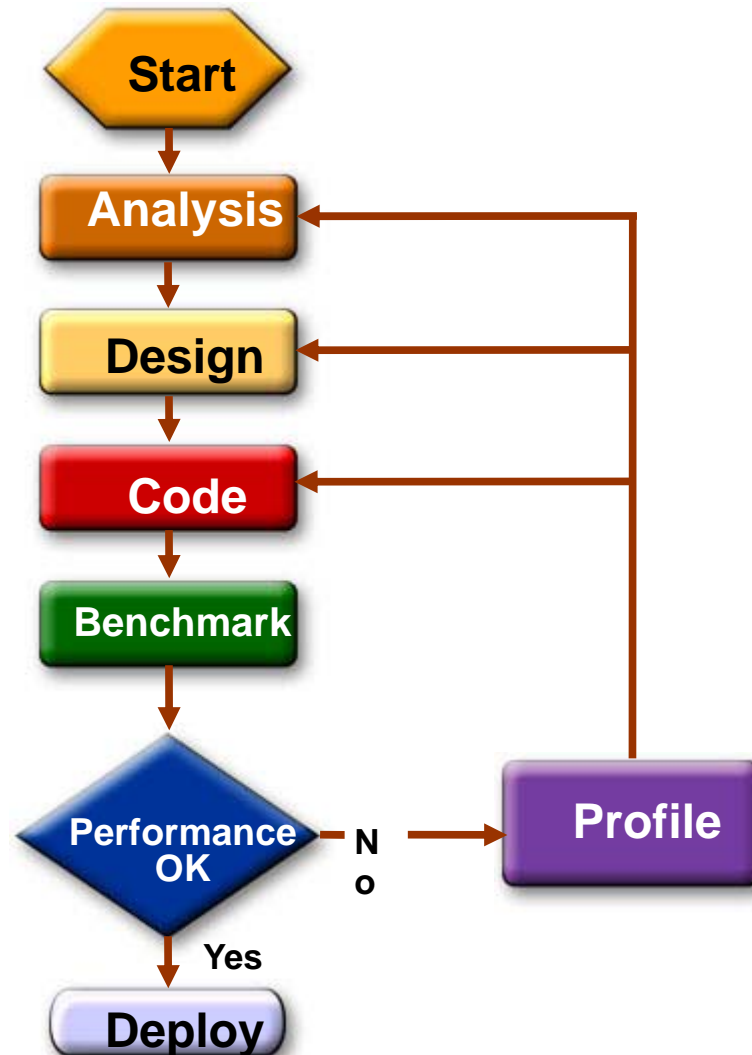


Development Process

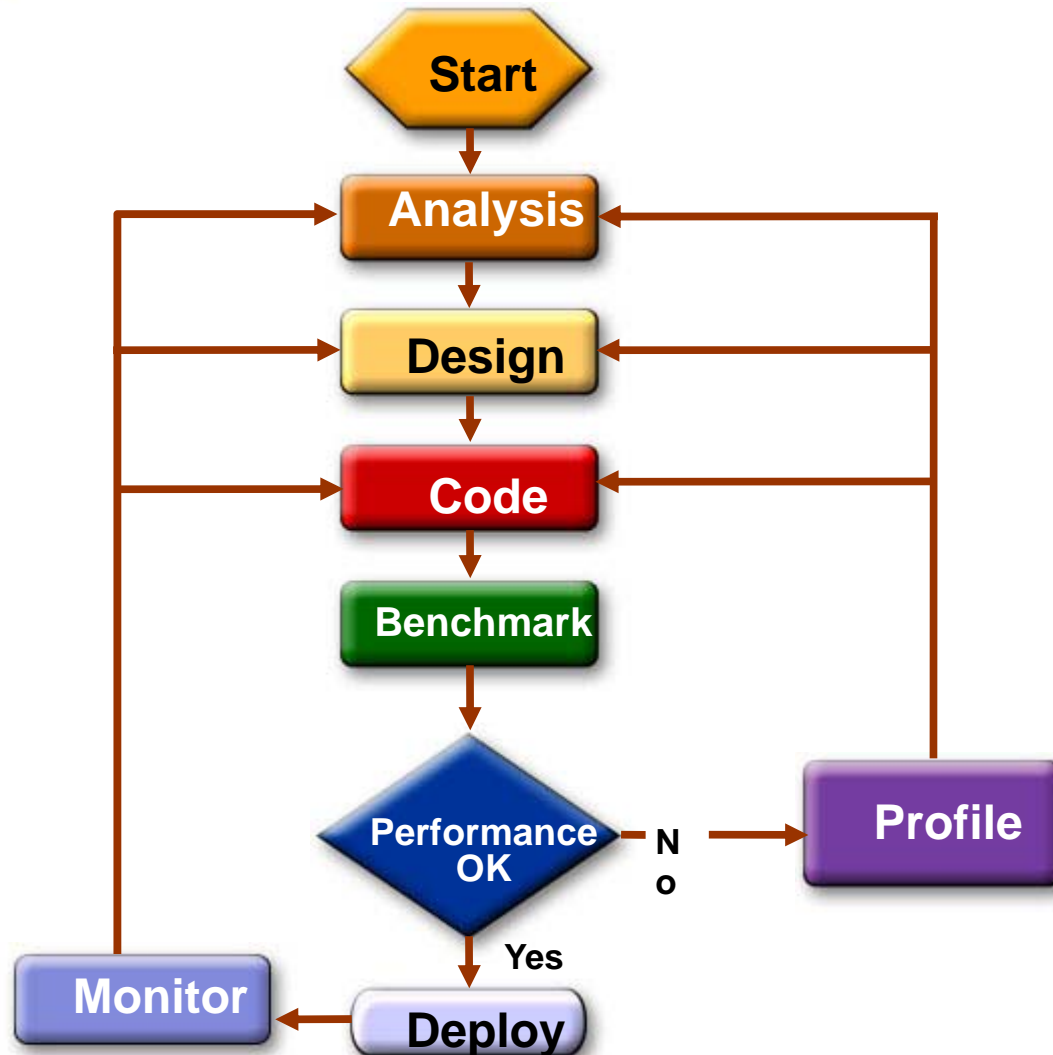
Typical Development Process



Application Performance Process



Application Performance Process





“Thank You !”