APEX Debugging Tools & Techniques



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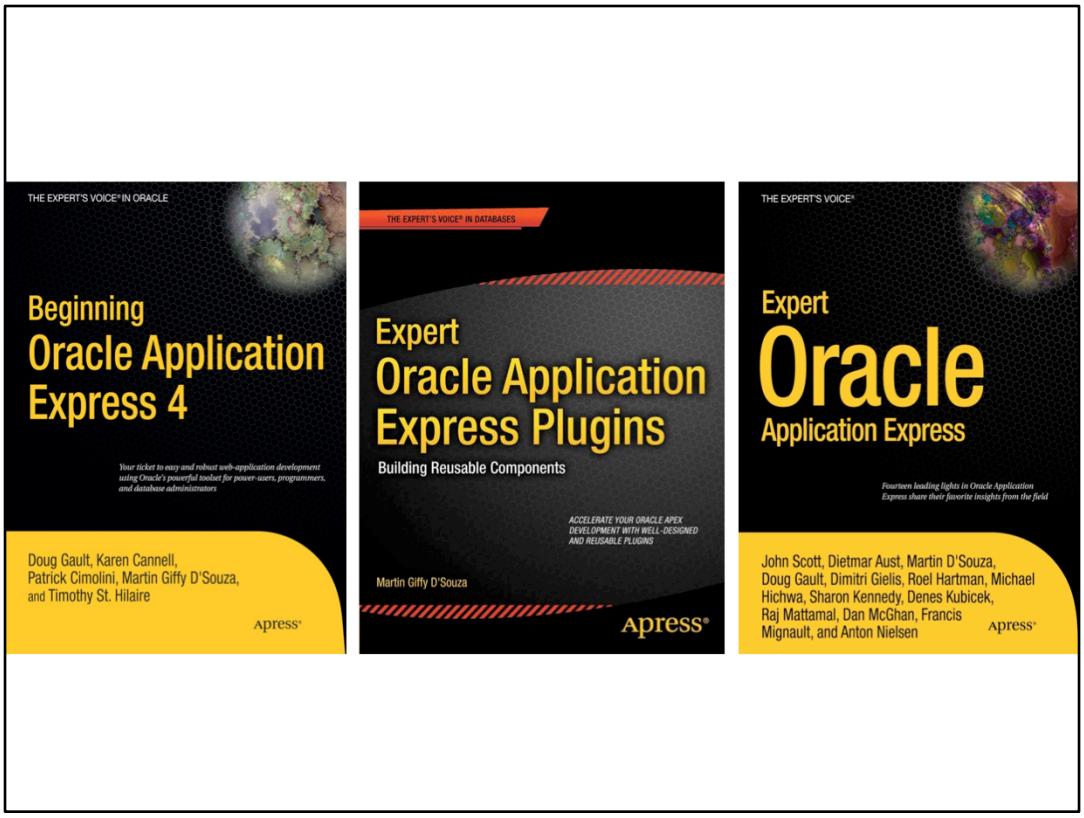
Abstract: Just like other tools and frameworks Application Express offers a lot of excellent tools to debug and instrument your application. This presentation will cover how to debug your Application Express application along with the built in tools and APIs. It will also cover other free 3rd party tools which compliment Application Express's debugging features.

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- Oracle ACE Director



- Beginning Oracle Application Express 4: http://goo.gl/NxHoF
- Expert Oracle Application Express: http://goo.gl/tXm3P
    - More info about this book: http://jes.blogs.shellprompt.net/2011/03/30/expert-oracle-application-express
- Expert Oracle Application Express Plugins: http://goo.gl/089zi



- ClariFit is a Oracle APEX and PL/SQL consulting and training firm based out of Calgary, Alberta, Canada
- For more information please visit http://www.ClariFit.com or email: info@ClariFit.com

Detect Slow Pages

```
SELECT page_id,
  page_name,
  view_date,
  trunc(elapsed_time, 2)
FROM apex_workspace_activity_log
WHERE application_id = :app_id
ORDER BY elapsed_time desc;
```

- APEX_WORKSPACE_ACITIVTY_LOG stores all the page views
- ELAPSED_TIME contains the time it takes the database to process the page
    - Note: this is not the time it takes for the user to see the final result as that time varies depending on network connection, computer speed, etc.
- Can enhance this query to get more refined results (this is just a very simple example
- Once you find the slow page run the page in debug mode then click View Debug (in the developer bar). This will show you slow running processes on a given page

Detect Errors

```
SELECT page_id, page_name, view_date,
  error_message, error_on_component_type,
  error_on_component_name
FROM apex_workspace_activity_log
WHERE application_id = :app_id
  ABD error_message is not null
ORDER BY view_date desc;
```

- The workspace activity log view can also be used to identify errors that occur on a page.

Custom Debug Messages

- APEX_DEBUG.MESSAGE

- APEX_DEBUG.MESSAGE allows you to add custom debugging messages in your APEX application.
    - Pre-4.2 use APEX_DEBUG_MESSAGE.LOG_MESSAGE
    - These messages will be displayed in the View Debug screen (from the developer toolbar) or from the APEX_DEBUG_MESSAGES view.
- Personal Note:
    - I normally don't use APEX_DEBUG, instead I use Logger (towards the end of slides) since it's applicable for all PL/SQL code (i.e. not APEX dependent)

Feedback

- Quick way to get user feedback and detailed session information
- Also allows users to submit their own bugs directly from the application

- See http://dgielis.blogspot.ca/2010/03/apex-40-feedback-link.html

Build Options

- Allows developers to enable and disable objects in APEX

- See http://www.grassroots-oracle.com/2010/06/oracle-apex-build-options.html for example
- Defined/set in Shared Components > Build Options (BO)
    - The Status (Import/Export) is misleading. All objects tagged with a BO will always be exported with the application.
        - Think if Import as “Enabled” and Export as “Disabled”
    - Default on Export: Sets the BO state when the application is exported then re-installed
- Set in any APEX object in the Configuration region
- Usecases:
    - Regions for developers only (things that developers put in for testing but should never be executed in a test/prod application)
    - Future release options: Suppose you’re working on a page or region that isn’t ready for production yet and you need to release the current application. Can tag that portion as a future release

Logger

- Free open source PL/SQL logging tool

- http://tylermuth.wordpress.com/2009/11/03/logger-a-plsql-logging-and-debugging-utility
  - Download: http://tylermuth.wordpress.com/2011/11/09/logger-project-moved-temporarilly
  - Note: Currently not hosted anywhere. May eventually be hosted on Github
- Used in many organizations. Regardless of APEX, you should be using this tool, or something like it, in your applications
- Read the "ReadMe" file for installation and demos. It covers everything

Browser Tools

- Firebug
  - http://getfirebug.com/
- Yslow
  - http://developer.yahoo.com/yslow/

JavaScript Debugging

- apex.debug
- Console Wrapper
  - http://code.google.com/p/js-console-wrapper/

- apex.debug: Built in with APEX. Will display log messages in browser's console only if browser supports it and application is running in debug mode
- Console Wrapper: Open source JS package that I wrote to support more console features
  - Demos and download page can be found at: http://code.google.com/p/js-console-wrapper/

Selenium

- Firefox plugin
- Useful to record and replay scripts
- See http://seleniumhq.org/ for more information

Unit Testing

- Free and built in with Oracle SQL Developer (also free)
- http://docs.oracle.com/cd/E15846_01/doc.21/e15222/unit_testing.htm



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