CICD with Jenkins

Module Three: Jenkins Pipeline

Jenkins Pipelines

- A pipeline defines a CICD process for that project
- Stages
  - Sequential series of steps to be executed
  - Build > Test > Package > Deploy
- JenkinsFile
  - A script that defines the stages of a pipeline
  - Older form is written in the Groovy scripting language
  - New form is a declarative form of scripting
- Three basic configurations
  - The JenkinsFile is kept in Jenkins
  - The JenkinsFile is kept in a SCM repository
  - The JenkinsFile is kept in the project itself
    - This allows for multi branch builds

Pipeline

- Jenkins provides a series of tools so support authoring
  - Code snippets to perform specific tasks

Creating a simple pipeline

Demo

Create a Simple Pipeline

Lab Nine

Post Build Steps

- In addition to stages, Jenkins has a post build stage
- Contains any of a number of clause types
  - Always – always executes
  - Failure – executes only when the pipeline fails
  - Success – executes only when the build succeeds
  - Cleanup – always runs after all the other clauses run
  - Changed – runs if the pipeline or a stage completion status is different from a previous run
- There are more clause types at:
  - https://jenkins.io/doc/book/pipeline/syntax/#post

Post build steps

Demo

Adding post build steps

Lab Ten

Using SCM

- In the IaC/DevOps world
  - Pipeline code should be versioned like dev code
  - There is no facility in Jenkins to do this
- The JenkinsFile can be moved to a repository

JenkinsFile in a Repo

Demo

JenkinsFile in a Repo

Lab Eleven

Environment Variables

- There are a number of predefined environment variables
  - Accessed via the global variable "env"
  - Value is accessed using Groovy syntax
  - "Build ID is ${BULD_ID}"
- We can define environment variables in either the whole pipeline or a given stage using the environment block

Accessing Environment Variables

Demo

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Accessing Environment Variables

Lab Twelve and Thirteen
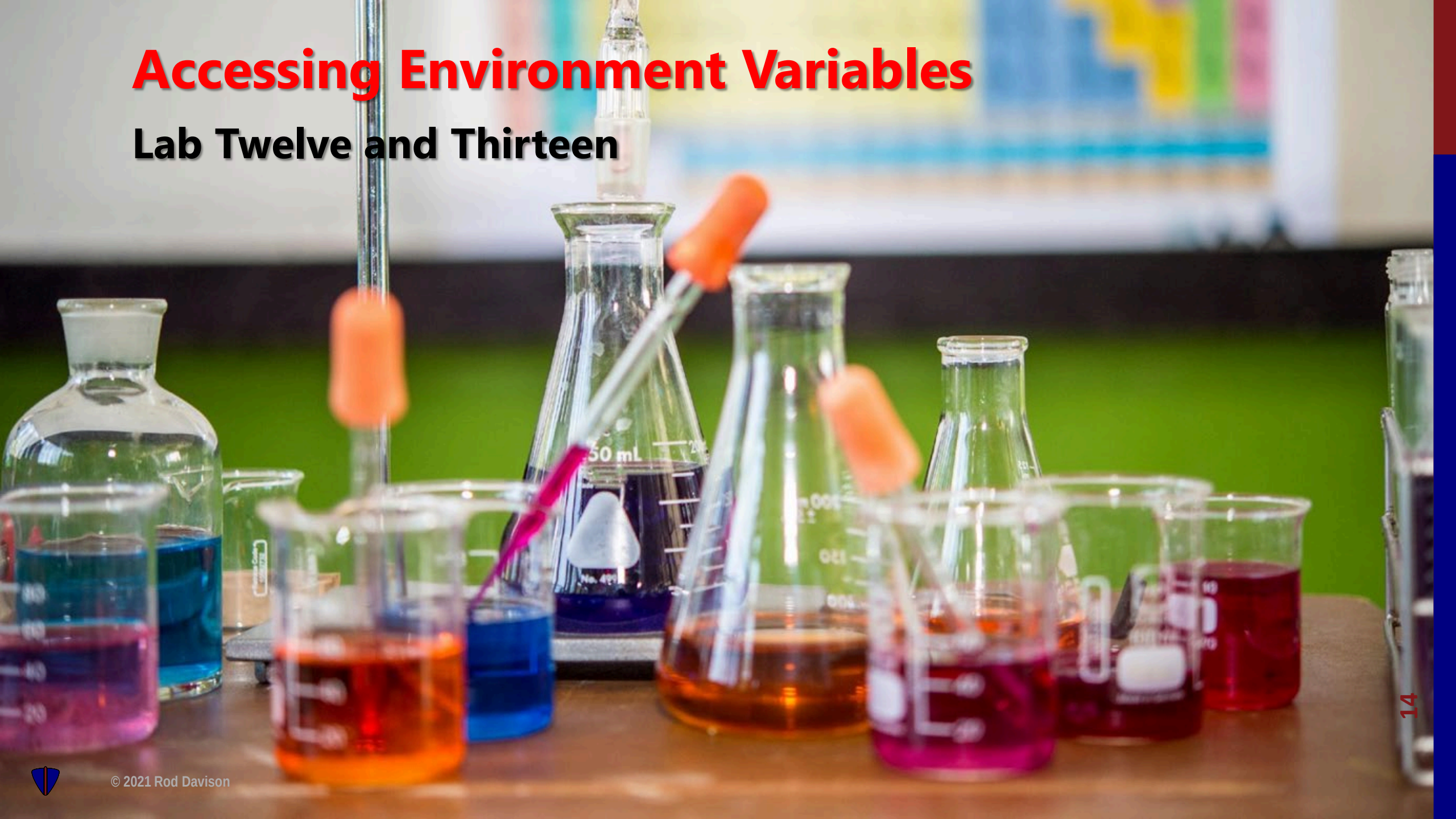
The When Clause

Demo

The When Clause

Lab Fourteen

Parameterized Build

Demo

Parameterized Builds

Lab Fifteen

Parallel Build

Demo

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Parallel Builds

Lab Sixteen

End of Module