GETTING STARTED WITH

CUCUMBER

WORKBOOK

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VIRTUAL GENIUS

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CONFERENCE SESSION PLANNER

You are attending a conference next week, and want to make sure that you don't miss any of the sessions given by your favorite conference presenter. You would like to be able to manage a list of which conference sessions you plan to attend, so that you can search the list later when you need to find the correct session to attend.

The following exercises will walk you through creating a simple application using Cucumber to specify desired the application behavior. Code samples for this workbook (save typing time by downloading and copying from the code samples when appropriate) can be found at:

> http://github.com/virtualgenius/Getting_Started_with_Cucumber.

The associated Github remote is:

> git@github.com:virtualgenius/Getting_Started_with_Cucumber.git

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Exercise #1 – Create a simple feature file and associated step definition file

Create features\conference.feature:

```
Feature: Conference Session Planner
        In order to attend every Neal Ford presentation at this conference
        As a conference attendee
        I want to manage the list of sessions that I will attend

        Scenario: Add a session to attend
                When I add "Agile Engineering Practices" to my list of sessions to attend
                Then I should see "Agile Engineering Practices" in my list
```

Update Cucumber build target arguments in build.xml to use our new feature file:

```
   args="--verbose --require target/test-classes --color --format pretty --format junit --out target/junit-
report features/conference.feature"
```

Create src\test\java\conference\ConferenceSteps.java:

```
package Conference;

import cuke4duke.Table;
import cuke4duke.annotation.I18n.EN.Given;
import cuke4duke.annotation.I18n.EN.Then;
import cuke4duke.annotation.I18n.EN.When;
import cuke4duke.annotation.Pending;

import java.util.*;
import static org.junit.Assert.*;

public class ConferenceSteps {

        List<String> sessionsToAttend = new ArrayList<String>();
```

```
@When ("^I add \"([^\"]*)\" to my list of sessions to attend$")
        public void iAddASessionToMyListOfSessionsToAttend(String sessionName) {
        sessionsToAttend.add(sessionName);
    }

    @Then ("^I should see \"([^\"]*)\" in my list$")
        public void iShouldSeeTheSessionInMyListOfSessionsToAttend(String expectedSessionName) {
        assertTrue(sessionsToAttend.contains(expectedSessionName));
    }
}
```

Note: The regular expression `\"([^\"]*)\"` matches to the session name `"Agile Engineering Practices"` in the feature file.

Run ant at the command line for the new feature file (remember to pipe to `wac` if on Windows):

```
ant
```

Exercise #2 - Add an 'And' step

Implement a new 'And' step for the current scenario (as follows):

```
Scenario: Add a session to attend
        When I add "Agile Engineering Practices" to my list of sessions to attend
        Then I should see "Agile Engineering Practices" in my list
            And I should have 1 session in my list
```

Note: The regular expression to match an integer value is `(\\d+)`

Exercise #3 - Add a new scenario to remove a session (includes a Given step and refactoring the regular expression to reuse an existing step definition)

Add the following scenario to the feature file and implement the step definition method:

```
Scenario: Remove a session to attend
        Given I add "Agile Engineering Practices" to my list of sessions to attend
        When I remove "Agile Engineering Practices" from my list of sessions to attend
        Then I should have 0 sessions in my list
```

Note: the regular expression to make the previous character optional is `??` (eg. `sessions??`)

Exercise #4 - Add a new scenario to handle adding multiple sessions

Add the following scenario to the feature file and implement the step definitions:

```
Scenario: Add multiple sessions to attend
        When I add "Agile Engineering Practices" to my list of sessions to attend
            And I add "Emergent Design" to my list of sessions to attend
            And I add "Implementing Evolutionary Architecture" to my list of sessions to attend
        Then I should see "Agile Engineering Practices" in my list
            And I should see "Emergent Design" in my list
            And I should see "Implementing Evolutionary Architecture" in my list
```

```
                And I should have 3 sessions in my list
```

Exercise #5 - Update the scenario to have a Given step, take the action of removing a session and use the 'But' step to verify the results

Add the following scenario to the feature file and implement the step definition method:

```
Scenario: Remove a session from multiple sessions to attend
      Given I add "Agile Engineering Practices" to my list of sessions to attend
            And I add "Emergent Design" to my list of sessions to attend
            And I add "Implementing Evolutionary Architecture" to my list of sessions to attend
            And I add "Workshop: JRuby in Depth" to my list of sessions to attend
      When I remove "Agile Engineering Practices" from my list of sessions to attend
      Then I should have 3 sessions in my list
            And I should see "Emergent Design" in my list
            And I should see "Implementing Evolutionary Architecture" in my list
            And I should see "Workshop: JRuby in Depth" in my list
            But I should not see "Agile Engineering Practices" in my list
```

Exercise #6 - Update the previous scenario to use tables

```
Scenario: Remove a session from multiple sessions to attend
      Given I add the following sessions to my list of sessions to attend:
      | Name                                   |
      | Agile Engineering Practices            |
      | Emergent Design                        |
      | Implementing Evolutionary Architecture |
      | Workshop: JRuby in Depth               |
      When I remove "Agile Engineering Practices" from my list of sessions to attend
      Then I should have 3 sessions in my list
            And I should see the following sessions in my list:
            | Name                                   |
            | Emergent Design                        |
            | Implementing Evolutionary Architecture |
            | Workshop: JRuby in Depth               |
```

Exercise #7 - Introduce more complicated domain logic. Update ubiquitous language for "favorites"

Add new feature file features\conference_search.feature:

```
Feature: Conference Session Planner
  In order to attend every Neal Ford presentation at this conference
  As a conference attendee
  I want to be able to search my list of favorite sessions

  Scenario: Manage session details
    When I add the following to my list of favorite sessions:
      | Name                                   | Presenter  | Day   | Time    | Room          |
      | Visualizations for Code Metrics        | Neal Ford  | Tue   | 8:30pm  | Windsor       |
      | Implementing Evolutionary Architecture | Neal Ford  | Wed   | 9:00am  | Westminster 1 |
      | Agile Engineering Practices            | Neal Ford  | Wed   | 11:00am | Westminster 1 |
```

```
| Emergent Design                        | Neal Ford    | Wed   | 1:30pm   | Standley I       |
| JRuby for the win                      | Ola Bini     | Wed   | 1:30pm   | Cotton Creek I   |
| Workshop: JRuby in Depth               | Neal Ford    | Wed   | 3:15pm   | Cotton Creek I   |
| Workshop: JRuby in Depth               | Neal Ford    | Wed   | 5:00pm   | Cotton Creek I   |
| Workshop: ATDD/BDD with Cucumber       | Paul Rayner  | Thu   | 1:30pm   | Cotton Creek I   |
Then I should have 8 sessions in my favorites
    And I should see the following sessions in my favorites:
    | Name                               |
    | Visualizations for Code Metrics    |
    | Implementing Evolutionary Architecture |
    | Agile Engineering Practices        |
    | Emergent Design                    |
    | JRuby for the win                  |
    | Workshop: JRuby in Depth           |
    | Workshop: JRuby in Depth           |
    | Workshop: ATDD/BDD with Cucumber   |
```

Update build.xml to use new feature file:

```
    args="--verbose --require target/test-classes --color --format pretty --format junit --out target/junit-
report features/conference_search.feature"
```

Copy `ConferenceSteps.java` to a new step definitions file `ConferenceManagerSteps.java`

Add new file `src\test\java\Conference\Session.java` with the following code:

```
package Conference;

 public class Session {
    public String Name;
    public String Presenter;
    public String Day;
    public String Time;
    public String Room;

    public Session(String name, String presenter, String day, String time, String room) {
        this.Name = name;
        this.Presenter = presenter;
        this.Day = day;
        this.Time = time;
        this.Room = room;
    }
}
```

Implement the feature file scenarios using the new Session class. Feel free to reuse code from the old step definition class.

Exercise #8 – Implement step definitions for searching

Add the following new scenarios to conference_search.feature and implement the new step definitions:

```
  Scenario: Search for session by presenter and day
    Given I add the following to my list of favorite sessions:
    | Name                               | Presenter    | Day   | Time    | Room          |
    | Visualizations for Code Metrics    | Neal Ford    | Tue   | 8:30pm  | Windsor       |
    | Implementing Evolutionary Architecture | Neal Ford | Wed  | 9:00am  | Westminster 1 |
    | Agile Engineering Practices        | Neal Ford    | Wed   | 11:00am | Westminster 1 |
    | Emergent Design                    | Neal Ford    | Wed   | 1:30pm  | Standley I    |
    | JRuby for the win                  | Ola Bini     | Wed   | 1:30pm  | Cotton Creek I |
    | Workshop: JRuby in Depth           | Neal Ford    | Wed   | 3:15pm  | Cotton Creek I |
    | Workshop: JRuby in Depth           | Neal Ford    | Wed   | 5:00pm  | Cotton Creek I |
```

```
      | Workshop: ATDD/BDD with Cucumber      | Paul Rayner   | Thu        | 1:30pm     | Cotton Creek I       |
    When I search for sessions by Ola Bini on Wed
    Then I should see the following sessions in the search results:
        | Name            |
        | JRuby for the win |

  Scenario: Search for session by day and time
     Given I add the following to my list of favorite sessions:
        | Name                                  | Presenter     | Day        | Time       | Room            |
        | Visualizations for Code Metrics       | Neal Ford     | Tue        | 8:30pm     | Windsor         |
        | Implementing Evolutionary Architecture | Neal Ford    | Wed        | 9:00am     | Westminster 1   |
        | Agile Engineering Practices           | Neal Ford     | Wed        | 11:00am    | Westminster 1   |
        | Emergent Design                       | Neal Ford     | Wed        | 1:30pm     | Standley I      |
        | JRuby for the win                     | Ola Bini      | Wed        | 1:30pm     | Cotton Creek I  |
        | Workshop: JRuby in Depth              | Neal Ford     | Wed        | 3:15pm     | Cotton Creek I  |
        | Workshop: JRuby in Depth              | Neal Ford     | Wed        | 5:00pm     | Cotton Creek I  |
        | Workshop: ATDD/BDD with Cucumber      | Paul Rayner   | Thu        | 1:30pm     | Cotton Creek I  |
    When I search for sessions at 1:30pm on Wed
    Then I should see the following sessions in the search results:
        | Name            |
        | Emergent Design |
        | JRuby for the win |
```

Exercise #9 - Background

Move the common Given from each of the scenarios to a common Background at the start of the feature file.

```
Feature: Conference Session Planner
  In order to attend every Neal Ford presentation at this conference
  As a conference attendee
  I want to be able to search my list of favorite sessions

  Background:
     Given I add the following to my list of favorite sessions:
        | Name                                  | Presenter     | Day        | Time       | Room            |
        | Visualizations for Code Metrics       | Neal Ford     | Tue        | 8:30pm     | Windsor         |
        | Implementing Evolutionary Architecture | Neal Ford    | Wed        | 9:00am     | Westminster 1   |
        | Agile Engineering Practices           | Neal Ford     | Wed        | 11:00am    | Westminster 1   |
        | Emergent Design                       | Neal Ford     | Wed        | 1:30pm     | Standley I      |
        | JRuby for the win                     | Ola Bini      | Wed        | 1:30pm     | Cotton Creek I  |
        | Workshop: JRuby in Depth              | Neal Ford     | Wed        | 3:15pm     | Cotton Creek I  |
        | Workshop: JRuby in Depth              | Neal Ford     | Wed        | 5:00pm     | Cotton Creek I  |
        | Workshop: ATDD/BDD with Cucumber      | Paul Rayner   | Thu        | 1:30pm     | Cotton Creek I  |
...
```

Exercise #10 - Tags and Scenario Outline

Update build.xml to only run scenarios that have a @wip tag
```
     args="--verbose --tags @wip --require target/test-classes --color --format pretty --format junit --out
target/junit-report features/conference_search.feature"
```

Add the following scenario outline to conference_search.feature (note the @wip tag and that it is a Scenario *Outline*, not just a Scenario) and implement the supporting step definitions:

```
  @wip
  Scenario Outline: Search for matching sessions by time and day
```

```
When I search for sessions at <Time> on <Day>
Then I should see <Session> in the search results

    Examples:

        | Day  | Time    | Session                       |
        | Tue  | 8:30pm  | Visualizations for Code Metrics |
        | Wed  | 11:00am | Agile Engineering Practices   |
        | Wed  | 1:30pm  | Emergent Design               |
        | Thu  | 1:30pm  | Workshop: ATDD/BDD with Cucumber |
```