Objectives:

- Refactor resources to use attributes

Cookbooks can define node attributes:

1. Open the file that contains the default recipe and replace the value for 'package' with the node attributes as shown below:

```ruby
package node['apache']['package_name']

file '/var/www/html/index.html' do
  content '<h1>Welcome Home!</h1>'
end

service 'httpd' do
  action [:enable, :start]
end
```

   a. The package name is replaced with a node attribute that is yet to be defined in the attributes file.

   b. Execute your ChefSpec test, expecting it to fail:

```
$ chef exec rspec spec/unit/recipes/default_spec.rb
```

   c. The expected output is for 5 failed tests (all tests):

```
NoMethodError:
  undefined method `[]' for nil:NilClass
# /tmp/d20210419-60382-c8nzkk/cookbook_artifacts/apach
ipes/default.rb:7:in `from_file'
# ./spec/unit/recipes/default_spec.rb:38:in `block (3

Finished in 1.77 seconds (files took 1.27 seconds to load)
5 examples, 5 failures
```

Generating an **attributes** file.

2. From the root of the apache cookbook directory, execute:

```
$ chef generate attribute default
```

Expected output :

```
Recipe: code_generator::attribute
  * directory[/home/ubuntu/chef-repo/cookbooks/apache/attributes] action create
    - create new directory /home/ubuntu/chef-repo/cookbooks/apache/attributes
  * template[/home/ubuntu/chef-repo/cookbooks/apache/attributes/default.rb] action create
    - create new file /home/ubuntu/chef-repo/cookbooks/apache/attributes/default.rb
    - update content in file /home/ubuntu/chef-repo/cookbooks/apache/attributes/default.rb from none to e3b0c4
    (diff output suppressed by config)
```

3. Define the **node attributes** in the **newly created apache/attributes/default.rb**
   file. Setting a node to 'default' gives this attribute the lowest level precedence

   $ vi ~/chef-repo/cookbooks/apache/attributes/default.rb

   a. **Add the following node attribute :**

```
default['apache']['package_name'] = 'httpd'
```

   **Note : This change should fix the error made from altering the default
   recipe.**

4. Run ChefSpec to see all tests pass:

```
.....

Finished in 1.85 seconds (files took 1.13 seconds to load)
5 examples, 0 failures
```

5. Update the **file** and **service** resources (in recipes/default.rb) to also use node attributes

```
package node['apache']['package_name']

file '/var/www/html/index.html' do
  content '<h1>Welcome Home!</h1>'
end

service 'httpd' do
  action [:enable, :start]
end
```

HINT: Use the node attributes in step 6 below to update the remaining resources.

6. Run ChefSpec to see the failures

7. To get your tests to pass, update the **attributes** file to reflect the addition of **node attributes** used in the **default recipe**:

```
default['apache']['package_name'] = 'httpd'
default['apache']['service_name'] = 'httpd'
default['apache']['default_index_html'] = '/var/www/html/index.html'
```

8. Execute ChefSpec:

Expected successful output:

```
.....

Finished in 1.85 seconds (files took 1.13 seconds to load)
5 examples, 0 failures
```

Notify your instructor that you are done with the lab

END OF LAB

Correct update to step 5

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```

```ruby
package node['apache']['package_name']

file node['apache']['default_index_html'] do
  content '<h1>Welcome Home!</h1>'
end

service node['apache']['service_name'] do
  action [:enable, :start]
end
```