


### Lab 6-1

#### Lab – Extracting Data Using a Pattern

The purpose of this lab is to introduce you to Converters and Patterns. Let assume you want your Robot to extract three additional pieces of information: SKU, Aisle and Bay. If you look at the web page with the detail for our light, you'll notice that those values are all in bold red text and all exist on the same line. So you'll need a way to parse out the values you want and populate the proper fields. But before you do that, you'll need to add some new attributes to your HardyHardware Type.

1. In Design Studio, click on the HardyHardware.type tab.
2. Click on the + button to add the following three Types.

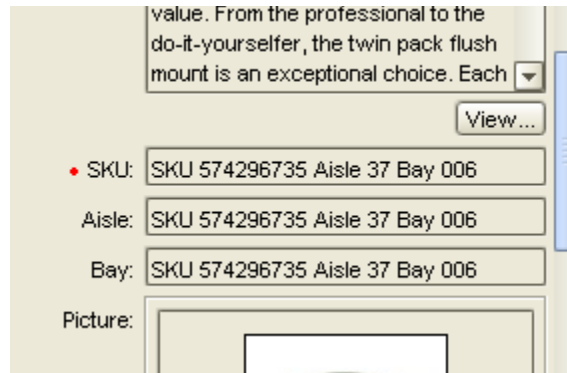
Name	Type	Required	Part of Database Key
SKU	Short Text	Yes	Yes
Aisle	Short Text	No	No
Bay	Short Text	No	No

3. Using the Up/Down arrow buttons  toward the bottom of the window, reorder your items as follows:
  1. Name
  2. Description
  3. Overview
  4. SKU
  5. Aisle
  6. Bay
  7. Picture
  8. Price
4. Click on the MyFirstRobot.robot tab to return to your Robot. Notice the new attributes have automatically been added in the Variables panel.
5. Now, you are going to set up three Extract Action steps between the Extract Picture Step and the Return Value Step. The easiest way to do this is to select the Return Value step in the Robot View (wait for it to turn green) and then create your steps by clicking on the item. Try doing that. You'll notice that the entire string with all three values gets selected. That's OK for now.
6. Right mouse-click on the green box and select "Extract" and then "Text" and then "HardyHardware.SKU" from the context menus.
7. With the Return Value step still selected, do exactly the same thing two more times selecting to extract to "HardyHardware.Aisle" for the second and "HardyHardware.Bay" for the third. You should have something that looks like this:

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8. If you select the Return Value step and look at the Variables window, you'll see that the entire string has been returned for all three fields.



Now you have to parse out the CORRECT value only for each of the three fields. The answer is to use a Converter that will employ a Pattern of regular expressions. Examine the data and how it's presented:

*SKU (space) followed by the value you want to extract for SKU (space) Aisle (space) followed by the value you want to extract for Aisle (space) Bay (space) and the value you want to extract for Bay.*

That could be represented by the Pattern:

**(SKU)(.\*?)(Aisle)(.\*?)(Bay)(.\*?)** Remember (.\*?) is a wildcard, any number of times. The added (?) means zero or one time.

Each of the six regular expressions are enclosed in parentheses. These each represent an element of our Pattern and are automatically numbered as \$1, \$2, \$3, \$4, \$5 and \$6. So what we want to extract for SKU is \$2. It represents a word (any combination of letters and numbers) zero or one time...but not more than that. That's what the "?" means. \$4 will be the value for Aisle. And \$6 will be the value for Bay.

So now, all you have to do is tell each of the three Extract Action steps this. You'll do this with a Converter.

9. Select the Extract SKU step and go to the Action tab. Add a Converter by using the + symbol. Select "Extraction" and "Advanced Extract" from the context menus.
10. On the Basic tab, enter the pattern above.
11. Then enter \$2 as the Output Expression. You should see the value "574296735" as output. Great!
12. Repeat steps 9-11 for Aisle and Bay, changing the output to \$4 and \$6 respectively. See, it's not that tough.

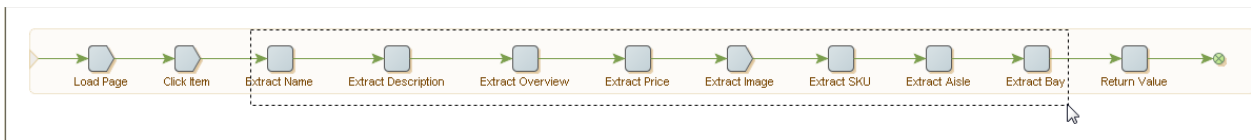
13. In the robot view, select the “Return Values” step. You should see data populating all the fields in the Variables panel.
14. Click on the “Debug” tab and run your robot in debug mode. Once again, you should see all values returned as output.

## Lab 6-2

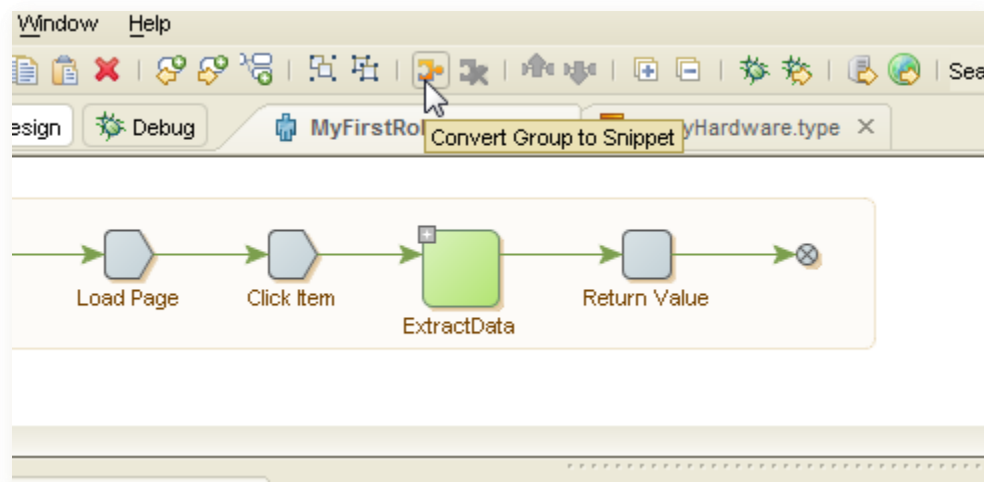
### Lab – Creating Groups and Snippets

In this part of the lab, you'll create one Group and from that Group, you'll create one Snippet. You may notice that your Robot has quite a few separate extract steps. To simplify its appearance, you'll group all of the Extract Steps into one. And to make the Group reusable by other Robots belonging to this project, you'll store it as a Snippet.

1. With your mouse, draw a rectangle around all of the Extract Action Steps as shown:



2. Right mouse-click on the selected items and then select "Group." Now the Group is displayed. In the box at the bottom center of the Group, enter the name, “ExtractData.”
3. Use the minus [ - ] button at the top left corner to collapse the Group. Your Robot is now much easier to look at. You can always expand it to see details with the [ + ] button.
4. Often, it makes sense to save a Group of steps as what's called a Snippet. Snippets are reusable and may be employed by other Robots. This can save quite a bit of time. With the ExtractData group selected, go to the main toolbar and select “Convert Group to Snippet.”





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5. Give your Snippet a name (like "ExtractData.snippet") and optional description.
6. Click [Next]. You will use the HardyHardware Variable..and then, click on [Finish]. Your new Snippet has been created, but it shows up under the Robots folder in the Projects panel.
7. Drag and drop the ExtractData.snippet file to the Snippets folder.
8. Save your project.