

# Find Element and FindElements in Selenium WebDriver

## Why do you need Find Element/s command?

Interaction with a web page requires a user to locate the web element. Find Element command is used to uniquely identify a (one) web element within the web page. Whereas, Find Elements command is used to uniquely identify the list of web elements within the web page. There are multiple ways to uniquely identify a web element within the web page such as ID, Name, Class Name, Link Text, Partial Link Text, Tag Name and XPATH.

## FindElement command syntax:

Find Element command takes in the By object as the parameter and returns an object of type WebElement. By object in turn can be used with various locator strategies such as ID, Name, Class Name, XPATH etc. Below is the syntax of FindElement command in Selenium web driver.

```
WebElement elementName = driver.findElement(By.LocatorStrategy  
("LocatorValue"));
```

Locator Strategy can be any of the following values.

- ID
- Name
- Class Name
- Tag Name
- Link Text
- Partial Link Text
- XPATH

Locator Value is the unique value using which a web element can be identified. It is the responsibility of developers and testers to make sure that web elements are uniquely identifiable using certain properties such as ID or name.

### Example:

```
WebElement loginLink = driver.findElement(By.linkText("Login"));
```

## FindElements command syntax:

Find Elements command takes in By object as the parameter and returns a list of web elements. It returns an empty list if there are no elements found using the given locator strategy and locator value. Below is the syntax of find elements command.

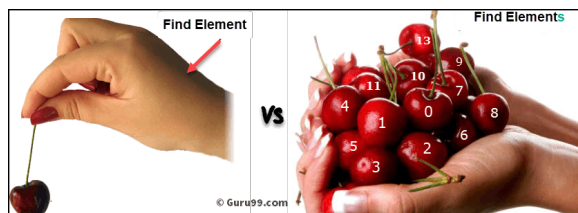
```
List<WebElement> elementName = driver.findElements(By.LocatorStrategy  
("LocatorValue"));
```

### Example:

```
List<WebElement> listOfElements = driver.findElements(By.xpath("//div"));
```

## Find element Vs Find elements

Below are the major differences between find element and find elements commands.



Find Element	Find Elements
Returns the first most web element if there are multiple web elements found with the same locator	Returns a list of web elements

Throws exception NoSuchElementException if there are no elements matching the locator strategy	Returns an empty list if there are no web elements matching the locator strategy
It will only find one web element	It will find a collection of elements whose match the locator strategy.
Not Applicable	Each Web element is indexed with a number starting from 0 just like an array

## Example: How to use Find Element command

The following application is used for demo purpose

<http://www.practiceselenium.com>

### Scenario:

1. Open the AUT
2. Find and click radio button

```
package com.sample.stepdefinitions;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;

public class NameDemo {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        System.setProperty("webdriver.chrome.driver", "D:\\3rdparty\\chrome\\chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.manage().window().maximize();

        driver.get("http://www.practiceselenium.com");

        // Find the radio button for "No" using its ID and click on it
        driver.findElement(By.id("no")).click();

        //Click on Check Button
        driver.findElement(By.id("buttoncheck")).click();

    }

}
```

## Example: How to use Find Elements command

### Scenario:

1. Open the URL for Application Under Test
2. Find the text of radio buttons and print it onto the output console

```
package com.sample.stepdefinitions;

import java.util.List;

import org.openqa.selenium.By;
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.WebElement;
import org.openqa.selenium.chrome.ChromeDriver;

public class NameDemo {

    public static void main(String[] args) {

        System.setProperty("webdriver.chrome.driver", "X://chromedriver.exe");
        WebDriver driver = new ChromeDriver();
        driver.get("http://www.practiceselenium.com");
        List<WebElement> elements = driver.findElements(By.name("name"));
        System.out.println("Number of elements:" +elements.size());

        for (int i=0; i<elements.size();i++){
            System.out.println("Radio button text:" + elements.get(i).
getAttribute("value"));
        }
    }
}
```

#### Summary:

- Find Element command returns the web element that matches the first most element within the web page.
- Find Elements command returns a list of web elements that match the criteria.
- Find Element command throws NoSuchElementException exception if it does not find the element matching the criteria.
- Find Elements command returns an empty list if there are no elements matching the criteria