

# CSCI599 Testing and Analysis of Web Application

---

**Final Project Report**

**Nirmisha Bomapalli**

**Sumeet Takalkar**

**Swati Chopra**

# Introduction

---

A tool implemented using a headless browser(Casper) that can do basic high-level testing on websites.

A Java implementation of Proxy Server that accepts and processes requests from the tool.

Project Files: casper.js, SimpleProxyServer.java

To run the Casper file, run the following command on command prompt:

```
casperjs --cookies-file=/cookies.txt --proxy=localhost:portNo filename.js Website_Name
```

Output: Screen Shots of actions are captured and actions are also logged on Console

## Installation Procedure:

1. First download and install PhantomJS(<http://phantomjs.org/download.html>)
2. Then Download and install CasperJS(<http://casperjs.org/>, <http://casperjs.org/installation.html>)
3. Check whether it has been installed correctly with following command:

```
casperjs -version
```

You should get the following output:

```
1.0.0-RC5
```

Run first sample script at googlelinks.js (<http://casperjs.org/quickstart.html>)

# Mouse Clicks:

---

|                             |      |
|-----------------------------|------|
| Evaluation for Mouse clicks |      |
| Checkboxes                  | 100% |
| Radio Buttons               | 100% |
| Buttons                     | 100% |

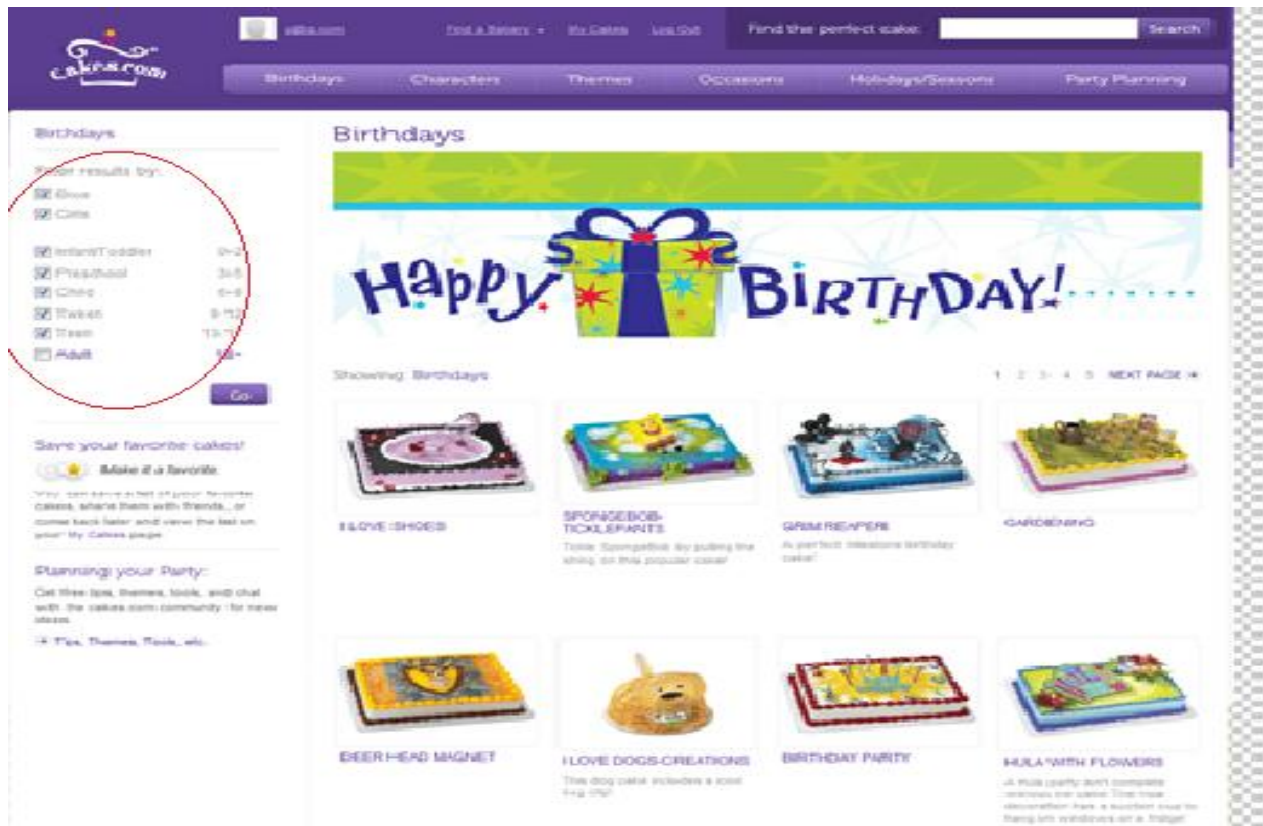
## CheckBoxes:

1. Get all the checkboxes present in the page and click on it:

```
a = document.getElementsByTagName('input');
for(var t=0;t<a.length;t++){
    if(a[t].type == "checkbox")
        a[t].click();
}
```

2. Capture this event in a screen shot to test whether this event is working

```
this.capture('C:/Users/Sumeet/CasperOutput/clicks/click'+imageno+'.png', {
    top: 0,
    left: 0,
    width: 1000,
    height: 1000
});
```



## RADIO BUTTONS

1. Get all the Radio Buttons present in the page and click on it:

```
a = document.getElementsByTagName('input');
for(var t=0;t<a.length;t++){
    if(a[t].type == "radio")
        a[t].click();
}
```

2. Capture this event in a screen shot to test whether this event is working

```
this.capture('C:/Users/Sumeet/CasperOutput/clicks/radioclick'+imageno+'.png', {
    top: 0,
    left: 0,
    width: 1000,
    height: 1000
})
```

```
});
```

The screenshot shows a web form for customizing a cake. The form includes the following sections:

- Occasion :** A dropdown menu labeled "Select Category".
- Choose Your Cake:** A text input field.
- Layers:** Radio buttons for "One", "Two", and "Three". The "Three" option is selected and circled in red.
- Cream Toppings:** Checkboxes for "Butter Cream", "Ganaches", and "Glazes".
- Fruit Toppings:** Checkboxes for "Strawberry", "Mango", "kiwi", and "Cherries".
- Toppings-Nuts:** Checkboxes for "Walnuts", "Almonds", "Pecans", and "Peanuts".
- Make Your Writing On Your Cake(Optional):** A text input field.
- Shop CupCakes(Optional):** Checkboxes for "Chocolate Cake", "Orange layer Cake", and "Apple cake".
- Shop Gift Packages(Optional):** A list of package options: "Chocolate cake, Choco Milk Shake, Ballons", "Orange Pound Cake, Orange Milk Shake, Candles", "Apple Cake, Fruit Shake, Ballons", "Red Velvet Cake, Fruit Tart, Party Crackers", and "Chocolate cake, Orange Pound cake, Apple Cake".
- Shop a Party Item for free(Optional):** Radio buttons for "Ballons", "Candles", and "Candies". The "Candies" option is selected and circled in red.
- Select a Theme For Your Item:** A dropdown menu.

At the bottom of the form are two buttons: "Reset" and "Checkout".

## BUTTONS


1. Get all the Buttons present in the page and click on it:


```
a = document.getElementsByTagName('input');
for(var t=0;t<a.length;t++){
    if(a[t].type == "button")
        a[t].click();
}
});
```

2. Capture this event in a screen shot to test whether this event is working  
`this.capture('C:/Users/Sumeet/CasperOutput/clicks/buttonClick'+imageno+'.png', {`  
    `top: 0,`  
    `left: 0,`  
    `width: 1000,`  
    `height: 1000`

});

);



 [p@a.com](#)

[Find a Bakery](#) [My Cakes](#) [Log Out](#)

Find the perfect cake:  [Search](#)


[Birthdays](#) [Characters](#) [Themes](#) [Occasions](#) [Holidays/Seasons](#) [Party Planning](#)

## Find a Bakery

No Results were found for your search.  
Please refine your search terms and try again.

Address, City, State or Postal Code:

Distance:  [Find](#)



Map data ©2012 Google, INEGI, MapLink - [Terms of Use](#)

[About Cakes.com](#) [Terms & Conditions](#) [Site Map](#) [Contact Us](#)

©2011 Cakes.com. All rights reserved.

# Anchor Elements

| Evaluation of Anchor elements |     |   |
|-------------------------------|-----|---|
| Anchor elements               | 90% | We are able to access all anchor tags with Id or class attribute. |

Steps:

1. Get all the anchor elements with ID attribute *a = document.getElementsByTagName('a')[temp].getAttribute('id');*
2. Get all the anchor elements with class attribute *a1 = document.getElementsByTagName('a')[temp1].getAttribute('class');*
3. Click on all the anchor elements on the page *var success = this.click(a);*
4. Check the working of each link on the console by echoing the success value. *this.echo('Clicking on ' + fin\_anchor[g] + ' is :'+ success, "PARAMETER");*

[illegible]

# Forms

---

| Evaluation Of Form |      |   |
|--------------------|------|---|
| Text Input         | 100% | All elements in a form tag are properly populated and the form gets submitted. The screen shot above shows a form being submitted successfully. While the second screen shot shows there are some validation errors in the form.<br>The only thing unhandled in this case is the dynamically populated dropdowns/ |
| Radio Buttons      | 100% |   |
| CheckBox           | 100% |   |
| DropDowns          | 90%  |   |

1. Get all the Forms on the page
2. For each Form, get all the form elements
3. Iterate over each element and depending upon its type populate the respective array for text, checkbox, dropdowns and radio buttons

```
var forms = this.evaluate(getForms);  
  
var y = document.forms[x].elements;  
  
if(y[u].type == "text" || y[u].type == "password" ){  
    arr.push(y[u].name);  
}  
if(y[u].type == "checkbox"){  
    arrc.push(y[u].name);  
}  
if(y[u].type == "select-one" || y[u].type == "select-multiple" ){  
    arrs.push(y[u].name);  
}  
if(y[u].type == "radio"){  
    arrrr.push(y[u].name);  
}  
  
if(y[u].type == "radio"){  
    arrrr.push(y[u].name);  
}
```

4. For each array i.e array of text, checkbox, dropdowns and radio buttons fill the form with appropriate values

```
for(var t=0;t<arr.length;t++){  
    str = new String(arr[t]);
```



```

document.querySelector('input[name="'+str+'"').setAttribute('value', 'p@g.com'
);

farr.push(document.querySelector('input[name="'+str+'"').value);
}

for(var t=0;t<arrc.length;t++){
    str = new String(arrc[t]);

    document.querySelector('input[name="'+str+'"').checked = "checked";
    farrc.push(document.querySelector('input[name="'+str+'"').checked);
}

for(var t=0;t<arrrr.length;t++){
    str = new String(arrrr[t]);

    document.querySelector('input[name="'+str+'"').checked = true;

    farrrr.push(document.querySelector('input[name="'+str+'"').value);
}

for(var t=0;t<arrs.length;t++){
    str = new String(arrs[t]);

    document.getElementsByTagName('select[name="'+str+'"').selectedIndex=2;
    a =
    document.getElementsByTagName('select[name="'+str+'"').selectedIndex;

    farrs.push(a);
}

```

5. Submit the Form

```

document.forms[x].submit();

```



p@g.com

[Find a Bakery](#)

[My Cakes](#)

[Log Out](#)

Find the perfect cake:

[Search](#)

[Birthdays](#)

[Characters](#)

[Themes](#)

[Occasions](#)

[Holidays/Seasons](#)

[Party Planning](#)

## Find a Bakery

No Results were found for your search.

Please refine your search terms and try again.

Address, City, State or Postal Code:

Distance:

[Find](#)



[About Cakes.com](#) [Terms & Conditions](#) [Site Map](#) [Contact Us](#)

©2011 Cakes.com. All rights reserved.

# Mouse Over events:

| Evaluation of Mouse Over events |     |  |
|---------------------------------|-----|--|
| Mouse Over events               | 90% | Currently Capturing only<LI> tags but easy replicate on other tags |

1. All the <li> tags on the page.  
`a = document.getElementsByTagName('li')[temp].getAttribute('id');`
2. For each <li> tag perform a mouse over event  
`this.mouse.move(str);`

