

# Google API Integration

## Details

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**Aim:** To integrate with the Google APIs using JavaScript and Microsoft .NET  
**Video:** <https://www.youtube.com/watch?v=ObfmpM6zI4g>

## 1 Integrating with Google Maps

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Download: <http://buchananweb.co.uk/toolkitnew.zip>

The objective of this part of the toolkit is to create an application which shows the location of an IP address:

- 1 From toolkitnew, open **clientServerDraft.sln**, and select the client.cs form.
- 2 Select the Network tab, and then the Location tab (see Figure 3).
- 3 Double click on the **Find** button and add the following code for the Click event:

```
getMap();
```

- 4 Add the getMap() method with:

```
public void getMap()
{
    double latitude = 0, longitude = 0;
    try
    {
        string ip = textBox59.Text;

        if (!isip(ip))
        {
            ip = DNSLookup(ip);
            textBox60.Text = ip;
        }
        else
        {
            textBox60.Text = getDNS(ip);
        }

        string sin = @"http://sayip.info/lookup.php?ip=" + ip;
        WebClient httpClient = new WebClient();
        string response = httpClient.DownloadString(sin);

        string[] sinput = Regex.Split(response, @"Longitude:</a></strong></span><br />");
        string[] lo = Regex.Split(sinput[1], "\n\n");
        longitude = Convert.ToDouble(lo[2]);

        sinput = Regex.Split(response, @"Latitude:</a></strong></span><br />");
        lo = Regex.Split(sinput[1], "\n\n");
        latitude = Convert.ToDouble(lo[2]);

        string apiKey = "ABQIAAAA2ROgz2nzNWJJ-DEd3G22jRS1MZEo8Gvhh5P_73TUVKp4YOkUyBT8kmzOTnjysuE-I504hqWufhunig";
```

```

    string sEnd =
@"&zoom="+trackBar3.Value+"&size=829x476&markers=color:blue|label:IP&sensor=true&key=" + apiKey;

    string s = "http://maps.google.com/maps/api/staticmap?center=" +
Convert.ToString(latitude) + "," + Convert.ToString(longitude);
    string s1 = "&markers=color:blue|label:IP|" + Convert.ToString(latitude) + "," +
Convert.ToString(longitude);

    string s2 = "&maptype=hybrid";
    if (radioButton2.Checked) s2 = "&maptype=roadmap";
    else if (radioButton3.Checked) s2 = "&maptype=satellite";
// Add other map types here ...

    s = s + sEnd + s1+s2;
    webBrowser11.Url = new Uri(s);
}
catch (Exception ex)
{
    lbError.Items.Add(ex.Message);
}
}
}

```

## 5 Test the program for www.google.com (Figure 3).

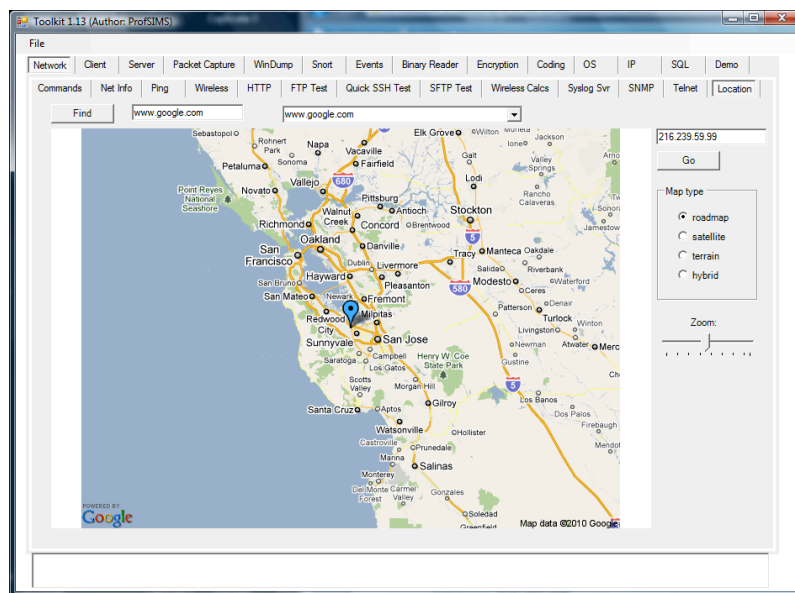


Figure 3:

## 6 Add the following to the comboBox (comboBox23):

www.google.com

www.bmw.com

www.ikea.com

www.aliceairport.com.au

www.ibm.com

www.cisco.com

www.oracle.com

www.microsoft.com

www.twitter.com

www.amazon.com

www.amazon.co.uk

www.linux.com

www.easports.com

www.secondlife.com

www.facebook.com

www.skype.com

www.Flickr.com

www.Digg.com

www.cnet.com

www.youtube.com

www.dell.com

www.bbc.co.uk

www.adobe.com  
www.iphone.com  
www.wikipedia.com  
www.intel.com  
www.rbs.com  
www.mit.edu

www.stanford.edu  
www.ed.ac.uk  
www.glasgow.ac.uk  
newyorker.com  
www.visitscotland.com  
www.scotsman.com

and test the program to determine the location of these sites.

- 7 On the Go button add the code:

```
Process.Start("IExplore.exe", "http://" + textBox60.Text);
```

- 8 On the Roadmap, Terrain, Satellite and Hybrid radiobuttons add the following to each of them:

```
getMap();
```

Next add two other map types ("terrian" and "hybrid") so that the Terrian and Hybrid checkboxes work. The following is a demonstration of this:

- 9 On the trackbar, and the following code for a **ValueChanged** event:

```
getMap();
```

A demo of the completed program is at:

[http://buchananweb.co.uk/e\\_presentations/google\\_api01/google\\_api01.html](http://buchananweb.co.uk/e_presentations/google_api01/google_api01.html)

- 10 Determine the maximum zoom that you can have and set this up on the slider.
- 11 Now add Zoom In and a Zoom Out buttons, so that a click on the Zoom In button will zoom into the map, and a click on the Zoom Out button will zoom the map out.

## 2 Integrating with Google Books

In this example we will integrate with Google Books, and generate the JavaScript required to access the book and display it. For this, do the following:

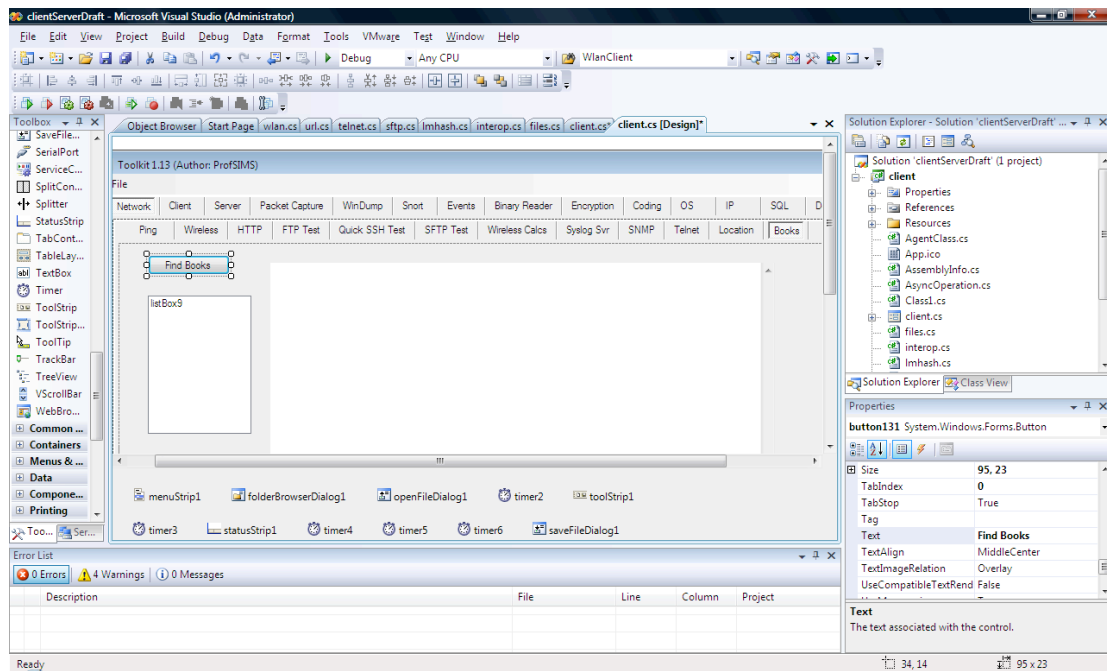
- 12 From toolkitnew, open clientServerDraft.sln, and select the client.cs form.
- 13 Select the Network tab, and then the **Books** tab (see Figure 2).
- 14 Double click on the **Find Books** button and add the following code:

```
try
{
    getBooks();
    fillListBox(listBox9, books);
}
```

```

}
catch (Exception ex)
{
    CreateMessageForStatusAppend(lbError, ex.Message);
}

```



**Figure 2:**

- 15 Next add in the `getBooks()` method (where the book name is separated by the ISBN number by ##):

```

public void getBooks()
{
    try
    {
        string[] str = new string[] {
            "CISSP: Certified Information Systems Security Professional Study
            Guide##0470276886",
            "CISSP All-in-One Exam Guide##0071497870",
            "CISSP for Dummies##0470124261",
            "Official (ISC)2 Guide to the CISSP CBK##0849382319",
            "The CISSP prep guide##047126802X",
            "CISSP - Certified information systems security professional: training
            guide##078972801X",
        };

        books = new ArrayList();
        int i = 1;
        m_arrItemToolTips = new string[str.Length];

        foreach (string s in str)
        {
            booktype b = new booktype();
            string[] inp = Regex.Split(s, "##");
            if (inp.Length != 2)
            {
                lbError.Items.Add(inp[0]);
                continue;
            }
            b.name = i + "." + inp[0]; b.isbn = inp[1];
        }
    }
}

```

```

        m_arrItemToolTips[i - 1] = b.name + " ISBN: " + b.isbn;
        i++;
        books.Add(b);
    }
}
catch (Exception ex)
{
    CreateMessageForStatusAppend(lbError, ex.Message);
}
}

```

## 16 Finally add in the getGoogleBook() method:

```

public string getGoogleBook(string isbn)
{
    try
    {
        string str = "<!DOCTYPE html \" -//W3C//DTD XHTML 1.0 Strict//EN\" ";
        str += "\"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd\">";
        str += "<html xmlns=\"http://www.w3.org/1999/xhtml\">";
        str += "<head>";
        str += "<meta http-equiv=\"content-type\" content=\"text/html; charset=utf-8\"/>";
        str += "<title>Google Book Search Embedded Viewer API Example</title>";
        str += "<script type=\"text/javascript\"";
        str += "src=\"http://www.google.com/jsapi\"></script>";
        str += "<script type=\"text/javascript\">";
        str += "    google.load(\"books\", \"0\");";
        str += "    ";
        str += "    function initialize() {";
        str += "        var viewer = new";
        str += "        google.books.DefaultViewer(document.getElementById('viewerCanvas'))";
        str += "    }";
        if (isbn.StartsWith("http"))
        {
            str += "        viewer.load('\" + isbn + "\')";
        }
        else
        {
            str += "        viewer.load('ISBN:\" + isbn + "\')";
            str += "    }";
            str += "    ";
            str += "    google.setOnLoadCallback(initialize);";
            str += "    </script>";
            str += "    </head>";
            str += "    <body>";
            str += "        <div id=\"viewerCanvas\" style=\"width: 700px; height:";
            str += "500px\"></div>";
            str += "    </body>";
            str += "</html>";
            return (str);
        }
    }
    catch (Exception ex)
    {
        CreateMessageForStatusAppend(lbError, ex.Message);
    }
    return ("");
}

```

## 17 Next add the following books:

- Grid computing: making the global infrastructure a reality By Fran Berman, Geoffrey Fox, Anthony J. G. Hey
- Computer security handbook By Seymour Bosworth, Michel E. Kabay

- Memoirs of John Napier of Merchiston: his lineage, life, and times, with a ... By Mark Napier.

18 Investigating adding a search facility to search for a keyword within Google books, and to be able to return a book with the given keyword.

### 3 Integrating with Google Searcher

19 Next create a listBox, and add a few terms, such as “napier university”, “cisco router”, and “cissp”, and use the following method to get information from Google. Figure 3 shows an example of the Searcher using “cissp”.

```
string s = getSearch(inp);
webBrowserxx.DocumentText = s;
```

```
public string getSearch(string str)
{
    try {
        string s = " <!DOCTYPE html PUBLIC \"-//W3C//DTD XHTML 1.0 Strict//EN\"";

        s += "\"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd\">";
        s += "<html xmlns=\"http://www.w3.org/1999/xhtml\">";
        s += "<head>";
        s += "<meta http-equiv=\"content-type\" content=\"text/html; charset=utf-";
8 "/">";
        s += "<title>Hello World - Google AJAX Search API Sample</title>";
        s += "<script src=\"http://www.google.com/jsapi\"";
        s += " type=\"text/javascript\"></script>";
        s += "<style text=\"type/css\">";
        s += "div.gsc-control { width: 100% !important; }";
        s += "div.gsc-search-box { width: 100% !important; }";
        s += "</style>";
        s += "<script language=\"Javascript\" type=\"text/javascript\">";

        s += "google.load('search', '1');";
        s += "function OnLoad() {";
        s += "var searchControl = new google.search.SearchControl();";
        s += "    searchControl.addSearcher(new google.search.ImageSearch());";
        s += "    searchControl.addSearcher(new google.search.WebSearch());";
        s += "    searchControl.addSearcher(new google.search.BookSearch());";
        s += "    searchControl.addSearcher(new google.search.NewsSearch());";
        s += "    searchControl.addSearcher(new google.search.VideoSearch());";
        s += "    searchControl.addSearcher(new google.search.BlogSearch());";
        s += "

searchControl.setLinkTarget(google.search.Search.LINK_TARGET_PARENT);";

        s += "    searchControl.draw(document.getElementById(\"searchcontrol\"));";
        s += "    var drawOptions = new google.search.DrawOptions();";

        s += "

drawOptions.setDrawMode(google.search.SearchControl.DRAW_MODE_TABBED);";
        s += "    searchControl.draw(document.getElementById(\"searchcontrol\"),";
drawOptions);";
        s += "    searchControl.execute(\"\" + str + "\");";
        s += "    }";
        s += "    google.setOnLoadCallback(OnLoad);";
        s += "</script>";
        s += "</head>";
        s += "<body>";
        s += "    <div id=\"searchcontrol\">Loading</div>";
        s += "    </body>";
```

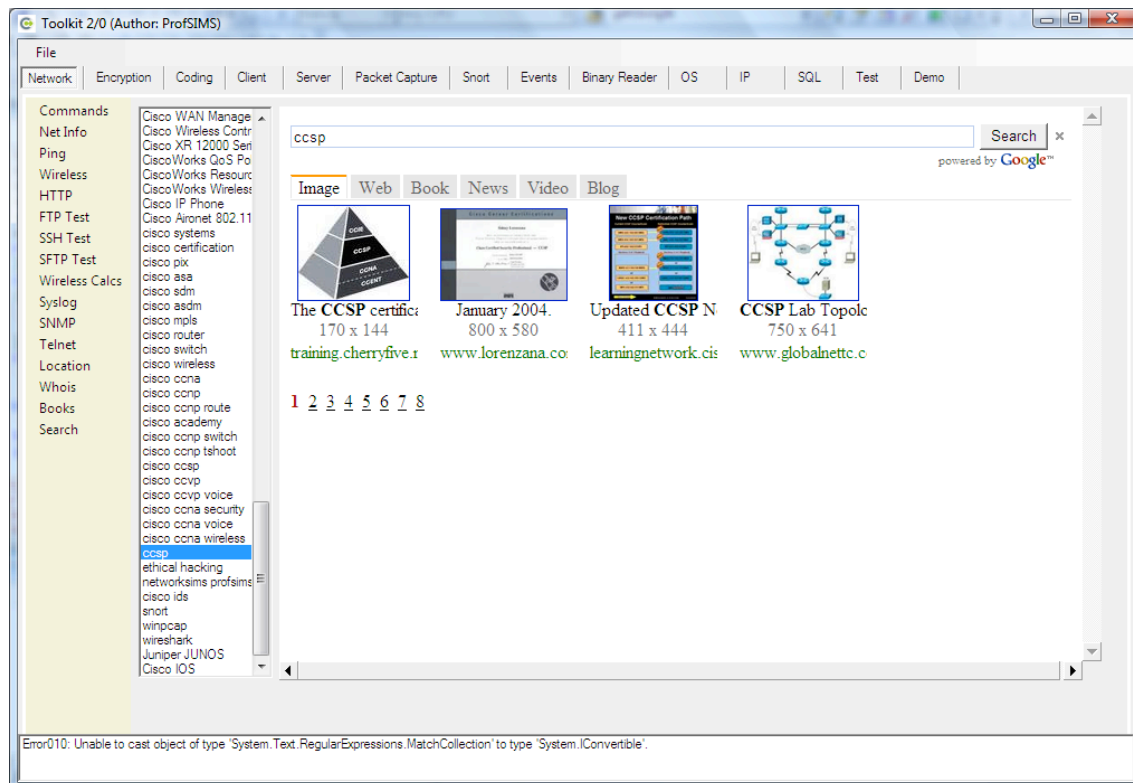
```

s += " </html>";
return (s);
}
catch (Exception ex)
{

CreateMessageForStatusAppend(lbError, ex.Message);
}
return ("");
}

```

**20** Investigate the searcher() facility, and determine other options that can be added, such as adding a geographical function for the search.



**Figure 3:**