Web UI/Forms and Web Applications

Web Application

- Also **web app, webapp, weblication**
- An application that is accessed by a web browser (from a server) via intranet or Internet.

- Take/Imagine a generic desktop application* being accessed by a browser by typing in its URL.

Web Application

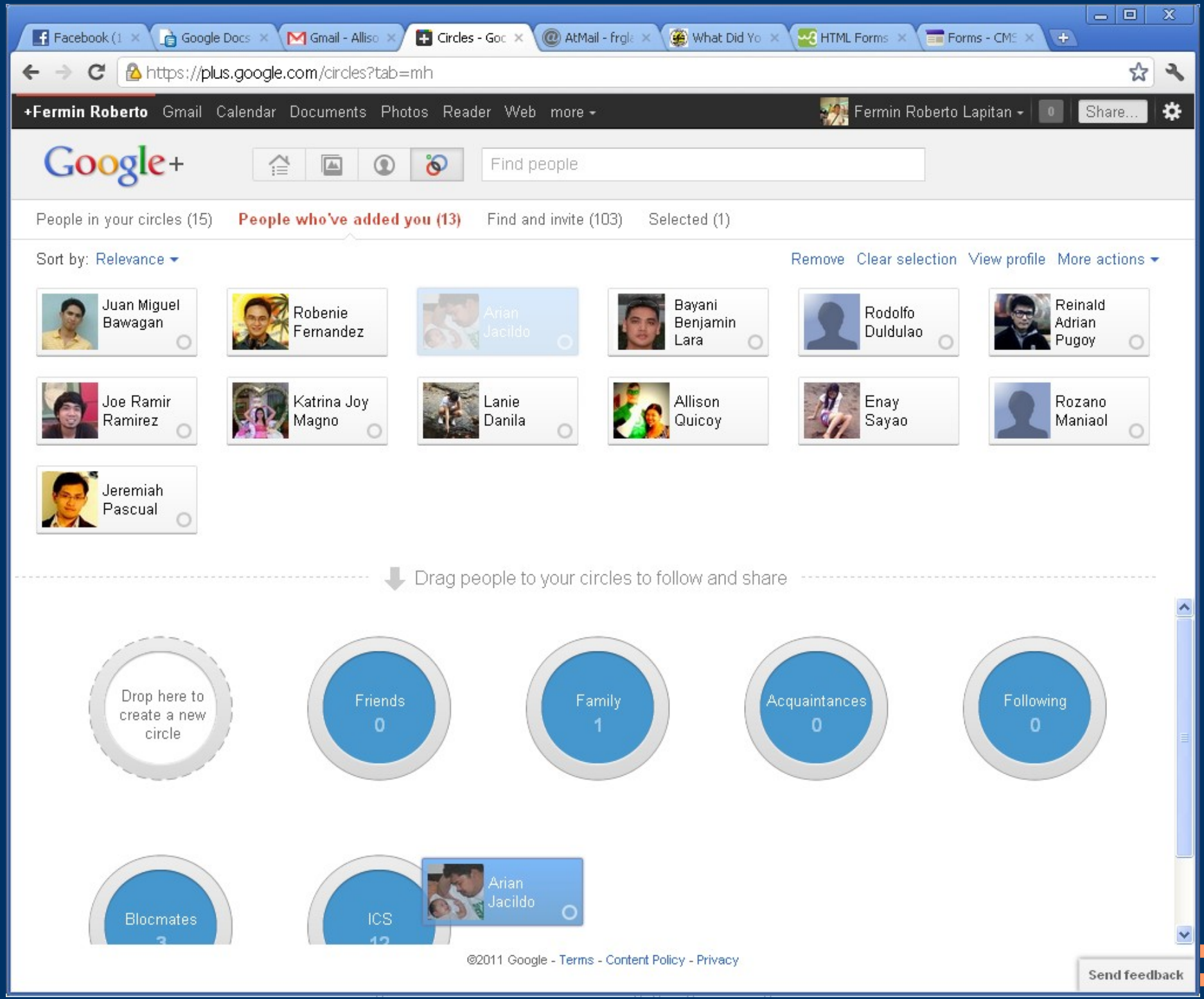
- Examples:
  - Webmail : E.g. Gmail, Yahoo Mail
  - Online Retail Sales
  - Online Auction
  - Blogs
  - Wiki
  - MMOGs/MMORPGs
  - Discussion Boards
  - Etc...

Web Application: Selling Point

- No distribution problems*
- No client installation problems*
- Easy to develop*
- Easy to deploy
- Easy to standardize (version)

Creating User Interfaces In Web Apps

- The **Rich** Client approach:
  - Use plugins like Java or Flash or ActiveX
  - Requires software installation.
- For “Rich” user experience.
- Extensible and Expandable Browsers
  - Most web browsers can render specialized contents using plugins.
  - Browsers may come with Plugin APIs for developers.


Facebook (1
Google Docs
Gmail - Alliso
Circles - Goc
AtMail - frgla
What Did Yo
HTML Forms
Forms - CMS
https://plus.google.com/circles?tab=mh
+Fermin Roberto
Gmail
Calendar
Documents
Photos
Reader
Web
more
Fermin Roberto Lapitan
Share...
Google+
Find people
People in your circles (15)
People who've added you (13)
Find and invite (103)
Selected (1)
Sort by: Relevance
Remove
Clear selection
View profile
More actions
Juan Miguel Bawagan
Robenie Fernandez
Arian Jacildo
Bayani Benjamin Lara
Rodolfo Duldulao
Reinald Adrian Pugoy
Joe Ramir Ramirez
Katrina Joy Magno
Lanie Danila
Allison Quicoy
Enay Sayao
Rozano Maniaol
Jeremiah Pascual
Drag people to your circles to follow and share
Drop here to create a new circle
Friends 0
Family 1
Acquaintances 0
Following 0
Blocmates
ICS
Arian Jacildo
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Creating User Interfaces in Web Apps

- Thin Client Approach
  - Uses HTML form elements, hyperlinks, images, CSS, and simplest of Javascript to build/constitute user interface.
  - No installation required.
  - Very limited in terms of UI features and user experience.
    - E.g. No DnD, advanced/customized events, etc.

Paid Online Survey - Greenfield Online - Mozilla Firefox

File Edit View History Bookmarks Tools Help 28.9 minutes saved

http://www.greenfieldonline.com/TrafficUI/mscui/page.aspx?pgtid=12

(55 unread) Yahoo! Mail Beta, rnduldu... | Paid Online Survey - Greenfield O...

Greenfield ONLINE

Registration

English Español | English Français

Anyone who is interested in getting paid to share your opinions and participate in easy online surveys can qualify to become a Greenfield Online community member.

- Greenfield Online has paid its members over $1,500,000 since January. Start earning extra money today!
- All qualified Greenfield Online members are entered into a monthly sweepstakes to win up to $5,000 in cash rewards, just for being a member.
- Paid online surveys offer members the opportunity to shape the products and services they use everyday, and you get paid to do it!
- Membership with Greenfield Online is always free. Qualify to join today and you will receive paid surveys immediately.

Country	United States
Language	English
First Name	
Last Name	
Email	
Gender	Select
Password	
Date of Birth (MM/DD/YYYY)	
Postal Code	

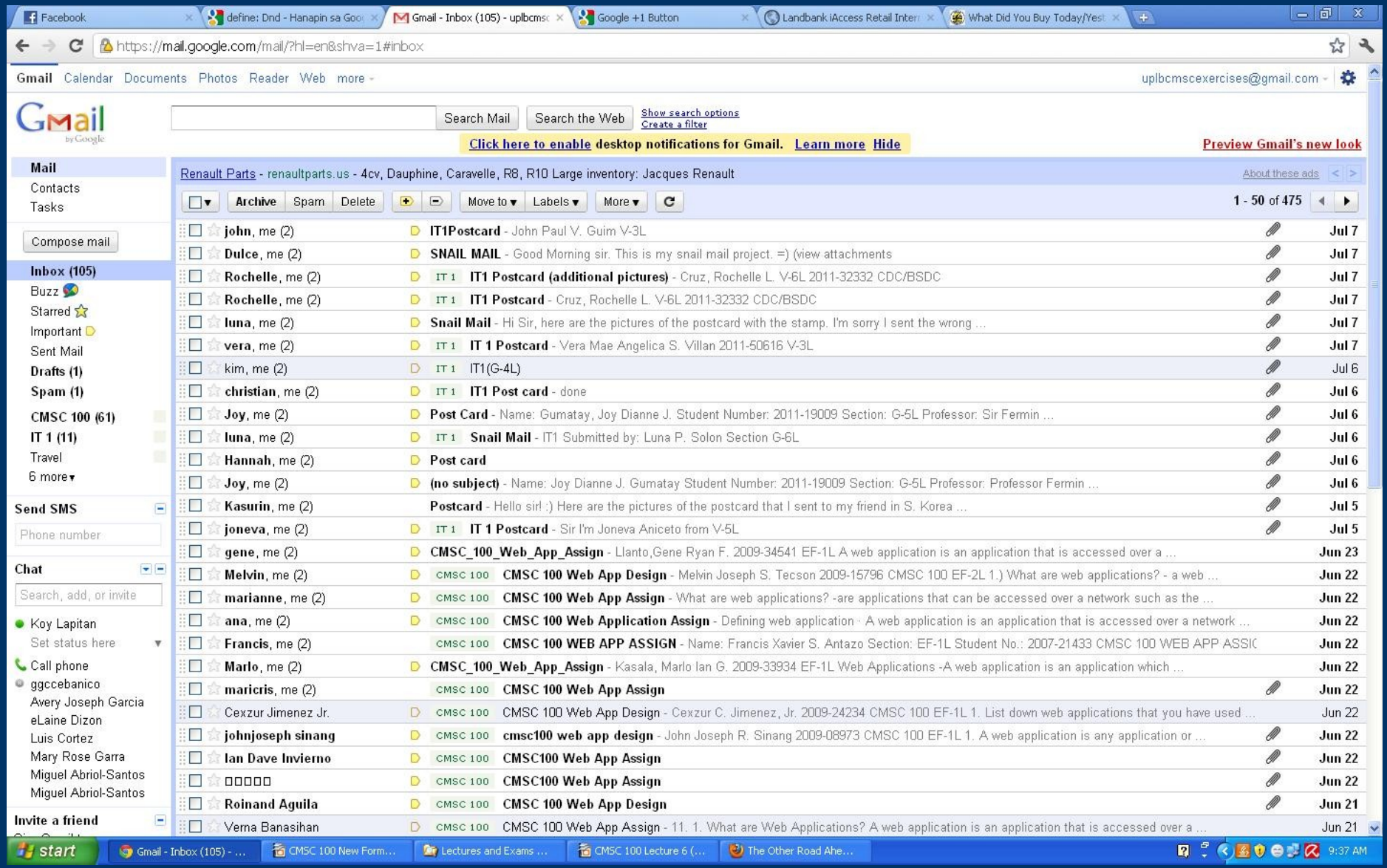
Save

Privacy Policy | Rewards Rules | About Us

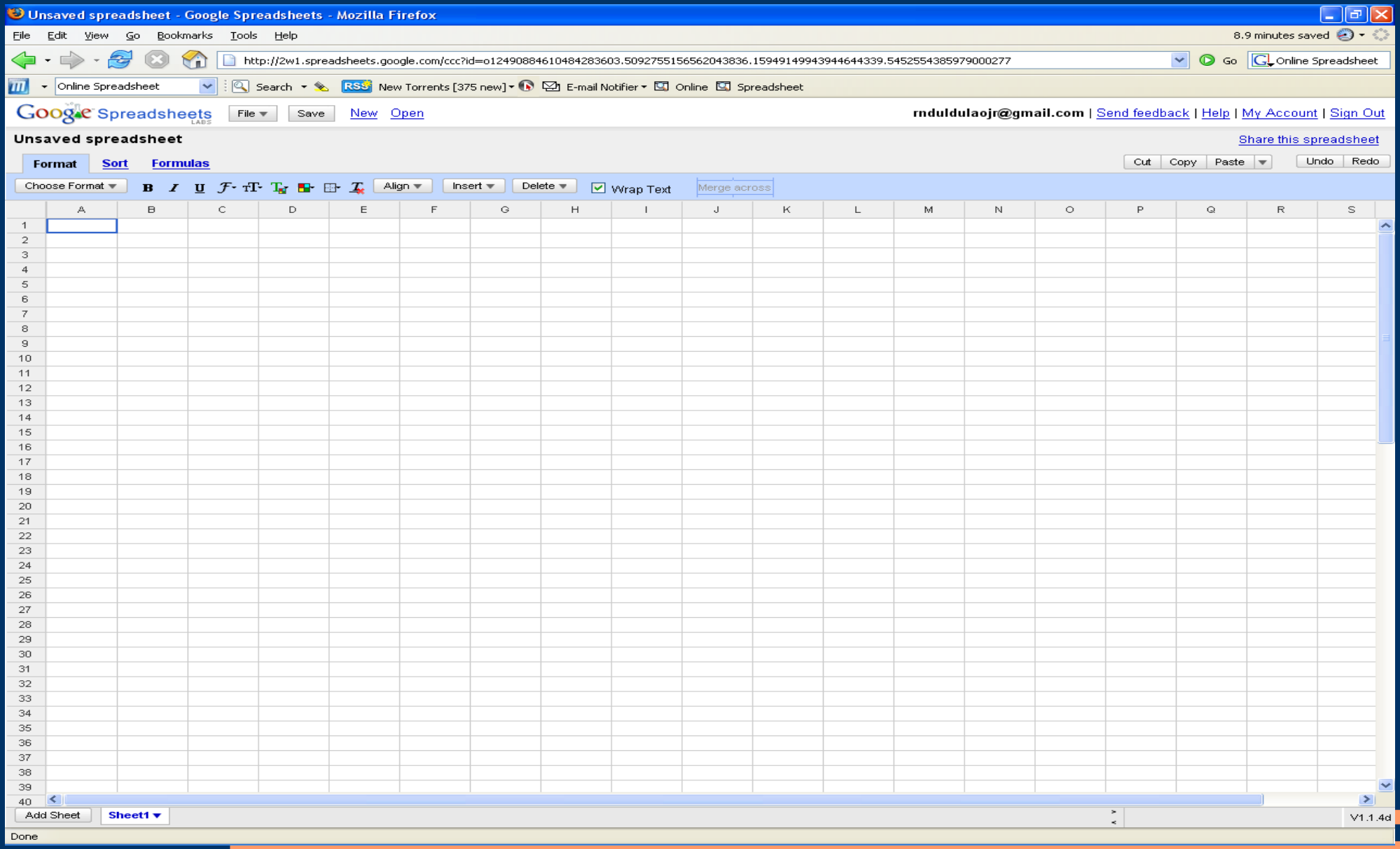
Done

Web Application Examples

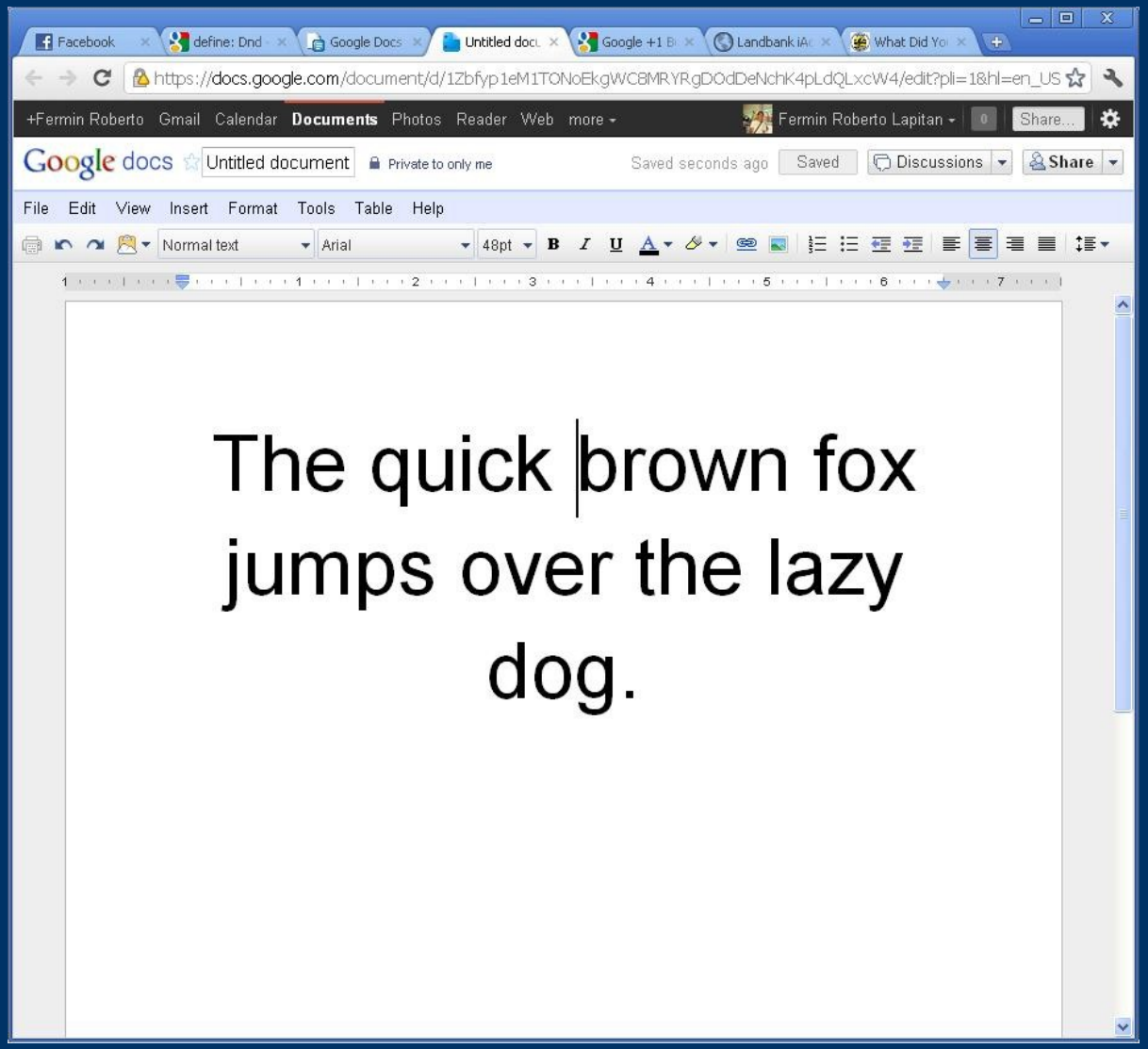
Examples: GMail



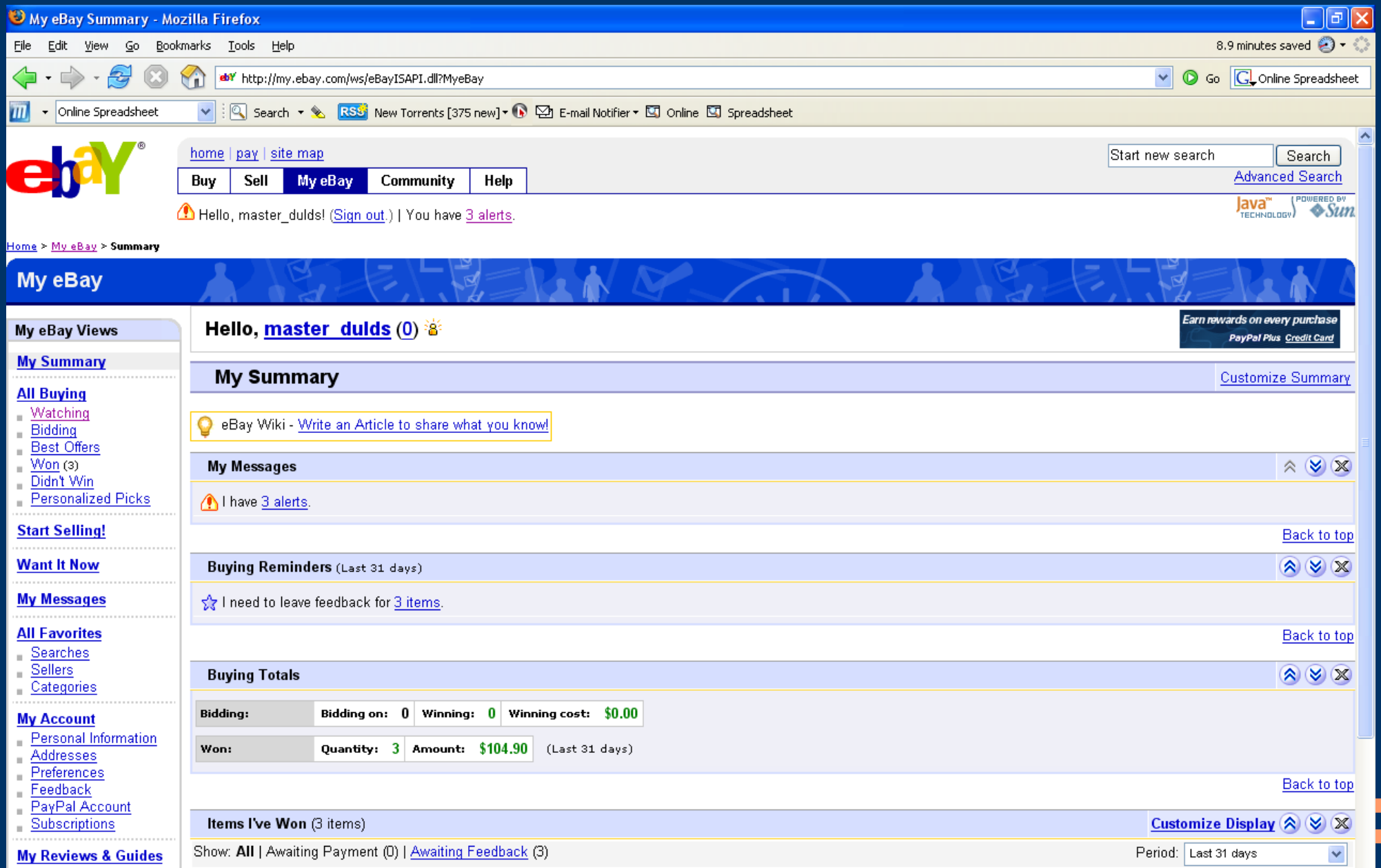
Example: Online Spreadsheet (Google Docs)



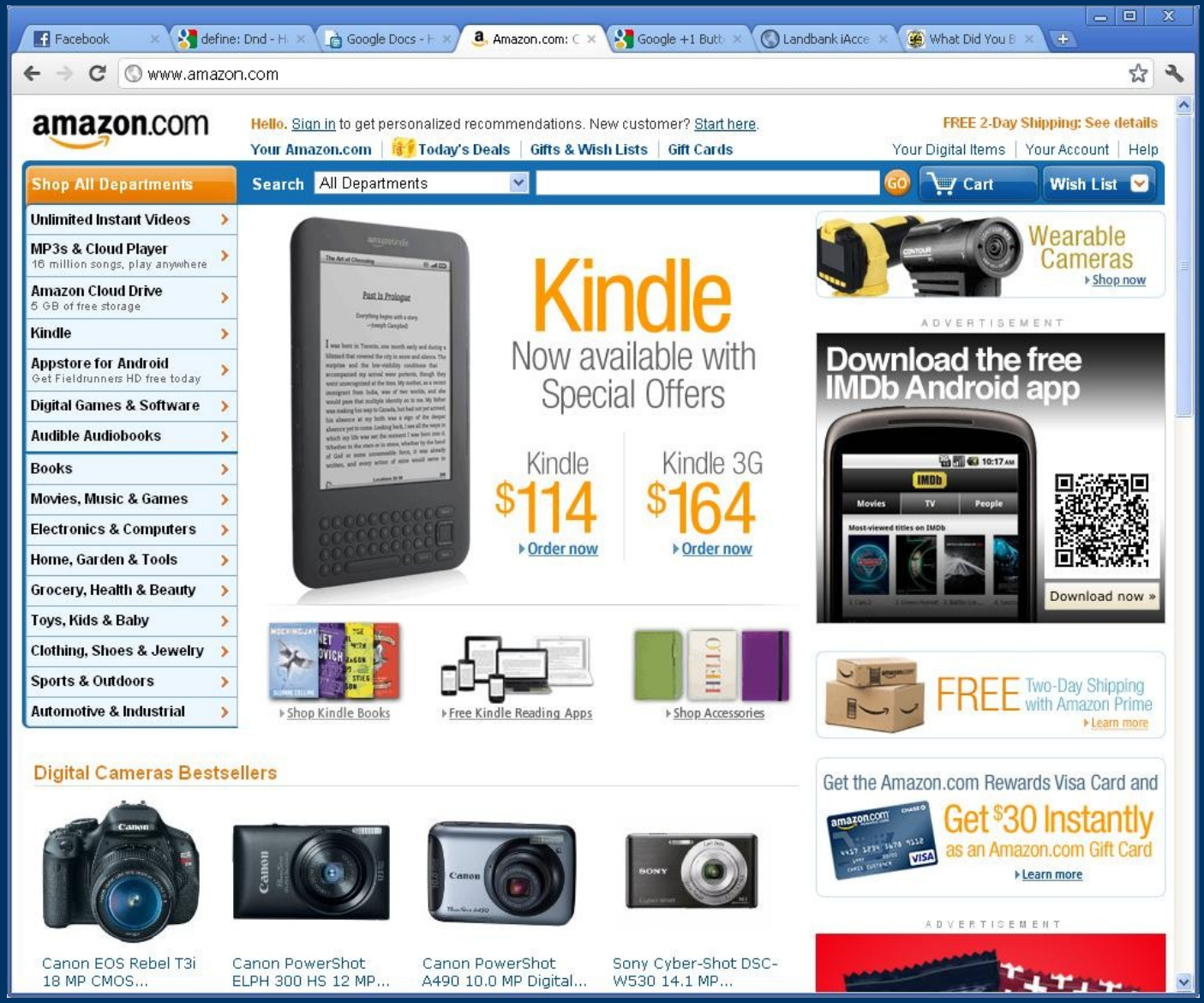
Example: Online Word Processor (Google Docs)



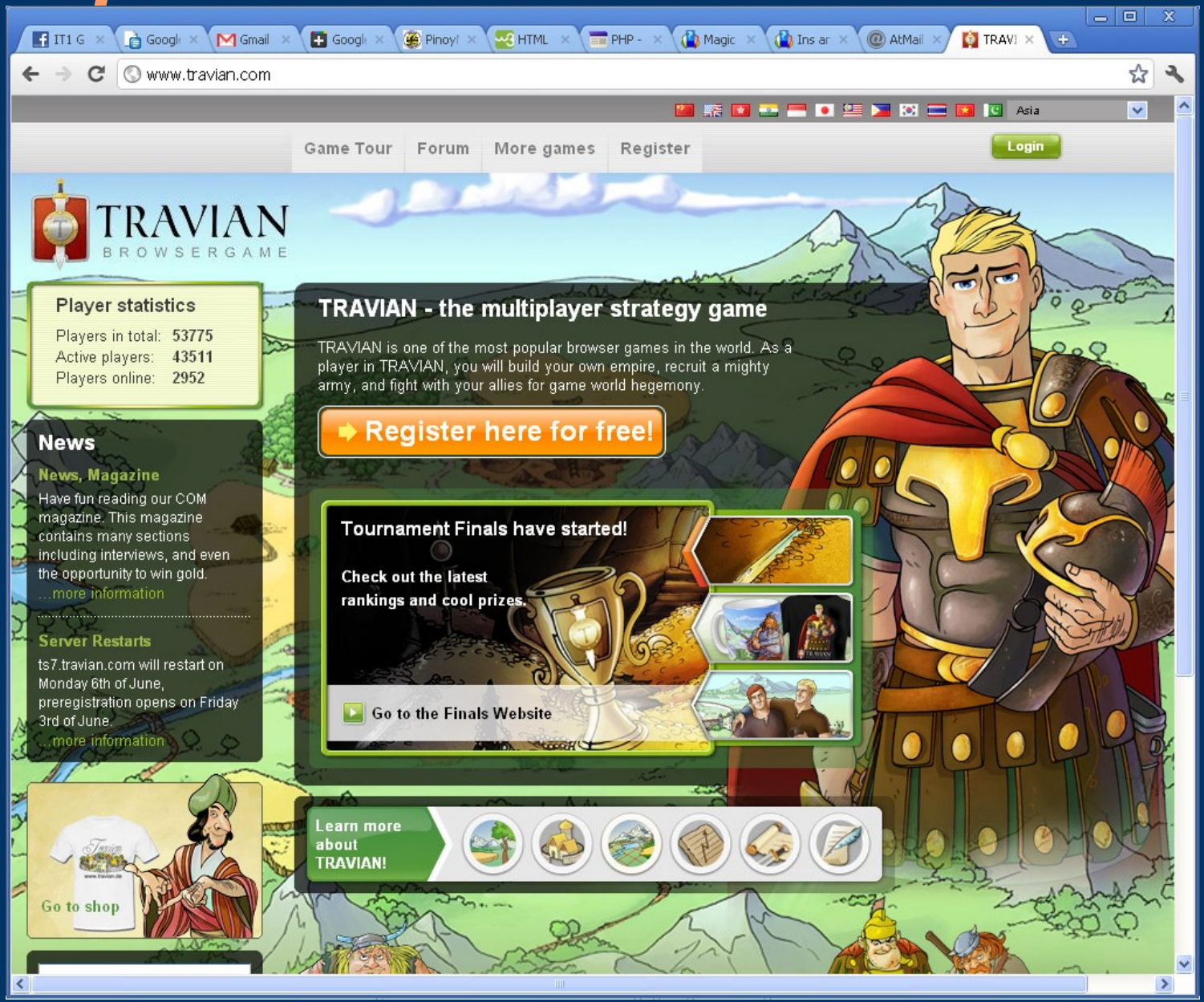
Example: Online Retail/Auction eBay



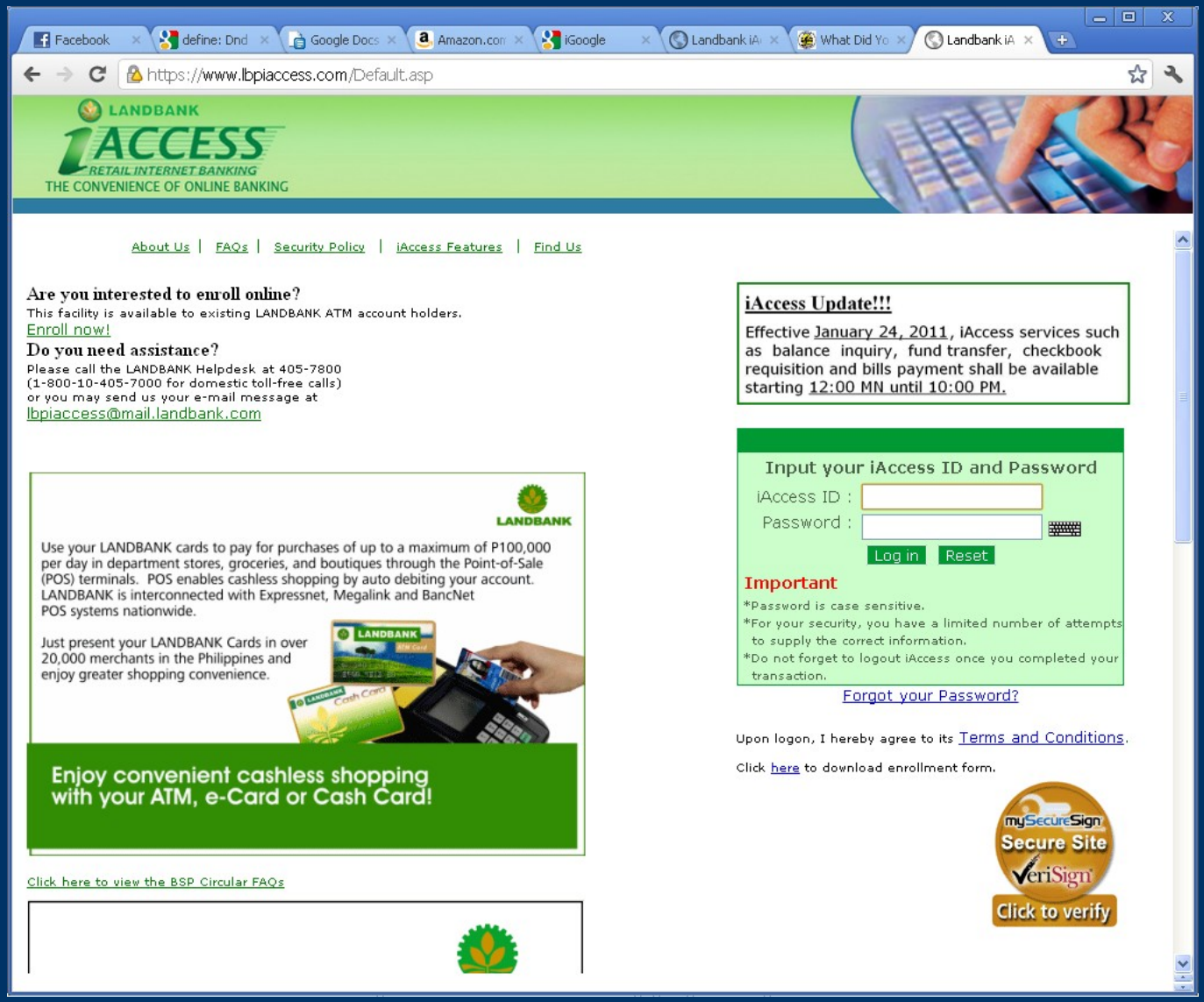
Example: Amazon



Example: MMOG



Example: Online Banking



Web Applications

- Required Reading:
  - Graham, Paul. **The Other Road Ahead,** http://www.paulgraham.com/road.html
    - Spolsky, Joel. **How Microsoft Lost the API War,** http://www.joelonsoftware.com/articles/APIWar.html

Building User Interfaces in Web Applications

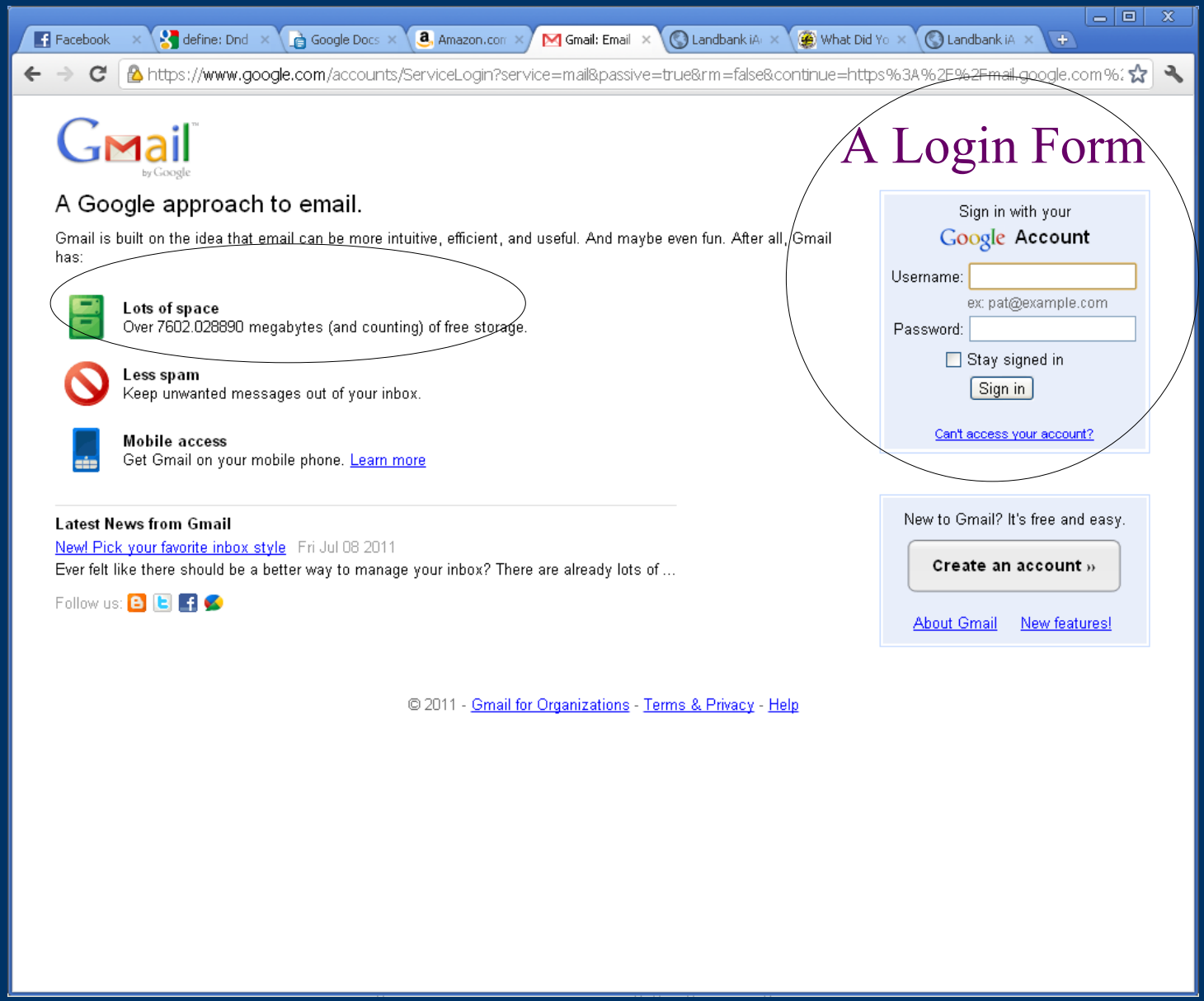
- The Usual Suspects
  - **HTML elements**: hyperlinks, divs, **form elements,** etc.
  - **CSS**: for advanced element stylings
  - **Javascript**: for UI controls logic, event handling

- *"Rich Client"* Approach*
  - Use Java
  - Use Flash

Building User Interfaces in Application

- Buzzword: DHTML
  - Dynamic HTML
  - Combination of HTML, CSS and Javascript
  - *Microsoft* spawned buzzword.

Building Web Forms



Web Form Elements (tags)

- According to the Basic Forms Module in XHTML
  - <form>
  - <input> - for creating textfields, password fields, radio buttons, buttons, checkboxes
  - <label>
  - <select> - for single select, multiple select drop down boxes or lists
  - <option> - used in conjunction with select.
  - <textarea> - for text areas

Web Forms Elements

- Forms Module
  - All elements in Basic Forms Module PLUS
  - <button>
  - <fieldset> - grouping element
  - <legend> - annotation element
  - <optgroup> - grouping element for options

    XHTML Modularization, read: http://www.webstandards.org/learn/articles/askw3c/dec2003/

HTML 4.01/XHTML 1.0 Form Elements (Controls)

- Form
- Buttons
  - Submit : when *activated* will submit a form.
  - Reset: *reset* all controls to initial values
  - Push buttons: no default behaviour, requires script programming
- Checkboxes
- Radio Buttons
- Text Fields/Password Fields
- Menus/Drop Down Lists/Selection Lists, Options, Option Groups
- Text Area
- File Select
- Hidden Controls
- Labels
- Fieldset
- Legend

Creating Forms

```
<form name="MyForm"
      action="formprocessing.cgi"
      method="get|post"
      enctype="application/x-www-form-
               urlencoded">
    <!-- Form controls here -->


</form>
```

Name of the form

Page/CGI the form values will be submitted to.

HTTP Method

Creating Forms

- The <form> tag groups related form controls.
- It gives information on where the form values will be forwarded/submitted to (action attribute) and how to pass on the data (the method attribute).
  - …among other things.

Creating Forms With File Select (E.g. Uploading A File)

```
<form method="post"
    action="processfile.php"
    enctype="multipart/form-data"
    accept="image/gif">

    <input type="file" name="upload"/>
    <!-- Other elements-->
</form>
```

Enctype required

Limits what can types of files can be submitted, May be a comma delimited List of possible MIME types.

Use the above form attributes when you have A file select control in the form

Form Events

```
<form …
    onsubmit="script"
    onreset="script"

>

</form>
```

Form specific events, in addition to the intrinsic events
Define client side scripts to be executed upon realization
Of the events, namely when the form is submitted AND
When the form is reset.

Form Methods

- GET : When **get** method is used, form data is sent WITH the URL in HTTP Request.
  - E.g. BROWSER appends data to the action URL *processform.php?name1=value1&name2=value2&….*
  - It CAN BE BOOKMARKED by browsers so you don't need to input data in the form again.
  - DO NOT USE GET when forms submit passwords OR you have too many fields and values to submit.

E.g.

```
GET processform.php?n1=v1&n2=v2 HTTP/1.1
Host: http://myserver.com
...
```

Form Methods

- POST: Form data is sent in the BODY of the HTTP Request
  - Preferable way of sending form data.

E.g.

```
POST processform.php HTTP/1.1
… Other headers here …

n1=v1&n2=v2&n3=v3&n4=v4…
```

What gets Submitted

- When a form is primed for submission, the browser gets the names of all the controls and their values and arrange them into name=value pairs delimited by “&”. Some controls may cause more than one pair to have the same name (e.g. for checkboxes, textfields with the same name).
  - E.g. choice=1&choice=2&name=John

The <input> tag.

- Can be used to create buttons (push, submit and reset), checkboxes, radio buttons, text fields, password fields, file select control, image control.
- Example (Proper) Minimal Declaration

```
<input type="text"
       name="field1"/>
```

ALWAYS put a **name** to your form controls.

Creating Text Fields/Password Fields

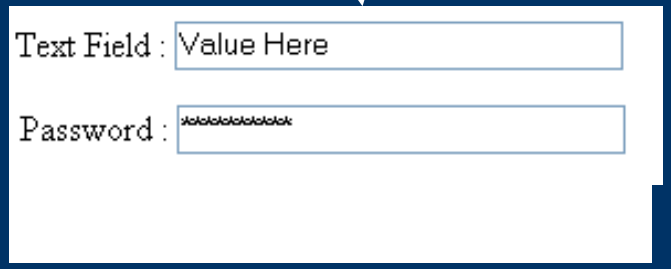
```
<input type="text"
       name="text1"
       value="Value Here"
       size="30"
       maxlength="20"/>
```

Initial value

Visible chars

Maximum chars
That can be typed

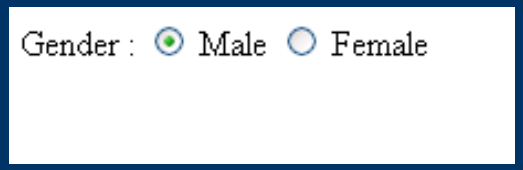
Label



If type="password"

Creating Radio Buttons/Checkboxes

```
<input
  type="radio" name="gender"
  value="M"
  checked="true"/> Male
<input
  type="radio" name="gender"
  value="F" /> Female
```



Radio group = 1 choice only
Checkbox group = multiple choices

Radio and checkbox groups must have the same **name**.

value attribute important for each radio Or checkbox

checked attribute imply pre-selection.

```
<input type="checkbox"
  name="choices"
  value="1"
  checked="true"/> Firing Squad
<input type="checkbox"
  name="choices"
  value="2"
  checked="true" /> Electric
   Chair
<input type="checkbox"
  name="choices"
  value="3" /> CMSC 100 First
   Long Exam
```

Creating File Select

```
<input type="file"
       name="f_upl"/>
```

Comes with its own browse button that will open a file selection (File Open) dialog.

Requires **enctype="multipart/form-data"** on the enclosing <form> tag.

Hidden Fields

```
<input type="hidden"
       name="secret_field"
       value="883920030" />
```

No visual representation/rendering. Allows information to be passed or stored between client and server using forms that may be otherwise be lost due to the **stateless nature of** HTTP.

Buttons

- Can be created using <input> or <button> tags. (Let's use <input> as our standard.)

```
<input type="submit"
  name="action" />

<input type="submit"
  name="action"
  value="Submit"/>
<input type="reset" />
<input type="reset"
  value="Clear Fields"/>
<input type="button"
  name="b1"/>
<input type="button" name="b2"
  value="Push"
  onclick="script" />
```

Buttons

- <input type="image" src="…">
  - Graphical submit button, src attributes indicate URL of image to use.
  - X-value and y-value coordinates in the image where the "click" occurred is passed to the server.
- <button> tag offers more graphical flexibility.
- <input type="button"> does not have any default action. It must be defined using client-side scripting.

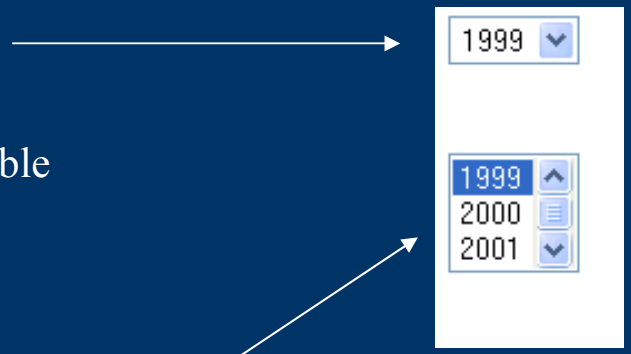
Menus/Lists/Dropdown Boxes

- Menus/Dropdown (Single Selection)

```
<select name="year">
  <option>1999</option>
  <option>2000</option>
  <option>2001</option>
  <option>2002</option>
</select>
```

- Single Selection, More Than One Visible Option

```
<select name="year" size="3">
  <option>1999</option>
  <option>2000</option>
  <option>2001</option>
  <option>2002</option>
</select>
```



Menus/Lists

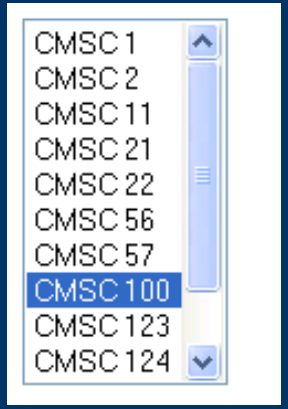
- Multiple Selection Lis

```
<select name="subjects" size="10"
   multiple="true">
   <option value="1">CMSC 1</option>
   <option value="2">CMSC 2</option>
   <option value="3">CMSC 11</option>
   <option value="4">CMSC 21</option>
   <option value="5" >CMSC 22</option>
   <option value="6">CMSC 56</option>
   <option value="7">CMSC 57</option>
   <option value="8" selected="true">CMSC
    100</option>
   <option value="9">CMSC 123</option>
   <option value="10">CMSC 124</option>
   <option value="11">CMSC 125</option>
   <option value="12">CMSC 127</option>
</select>
```

value

Label

Multiple Selection through Shift+Click or Ctrl+Click

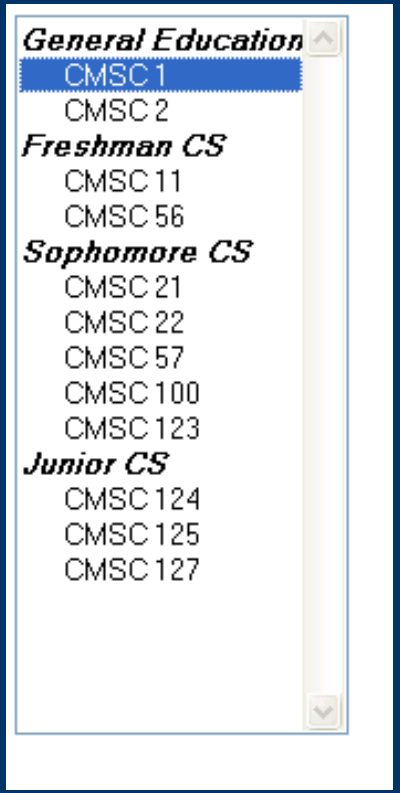


Preselection

If **value** attribute exists for a selected option, it will be the Submitted data otherwise the label of the option will be submitted

Menus/Lists With Option Groupings

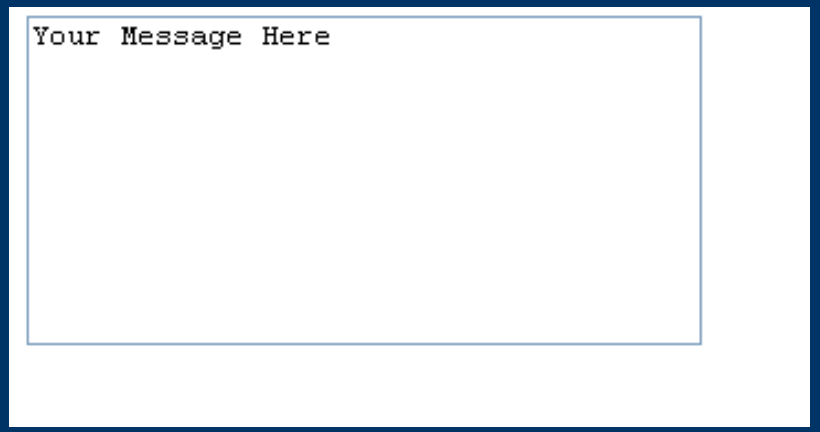
```
<select name="subjects" size="20" multiple="true">
  <optgroup label="General Education">
  <option value="1">CMSC 1</option>
  <option value="2">CMSC 2</option>
  </optgroup>
  <optgroup label="Freshman CS">
  <option value="3">CMSC 11</option>
  <option value="6">CMSC 56</option>
  </optgroup>
  <optgroup label="Sophomore CS">
  <option value="4">CMSC 21</option>
  <option value="5" >CMSC 22</option>
  <option value="7">CMSC 57</option>
  <option value="8" selected="selected">CMSC
   100</option>
  <option value="9">CMSC 123</option>
  </optgroup>
  <optgroup label="Junior CS">
  <option value="10">CMSC 124</option>
  <option value="11">CMSC 125</option>
  <option value="12">CMSC 127</option>
  </optgroup>
</select>
```



Text Area

```
<textarea
  name="message"
  rows="8"
  cols="35">
Your Message Here

</textarea>
```



Misc Form Elements

- <label> Creates labels for controls
  - E.g. <label for="lname">Name : </label>
- <fieldset> Grouping for controls and labels within form.
- <legend> allows assigning captions to fieldsets and controls.

Attributes For Control Events and Other Attributes

- onclick, ondblclick, onmousedown, onmouseup, onmouseover, onmousemove, onmouseout, onkeypress, onkeydown, onkeyup
  - Mouse and key events.
  - Each of these attributes are applicable to controls and must contain a script (i.e. Javascript inline script or function call).
  - I.e. `<input type="text" onmouseover="doThis()"…/>`
- onfocus, onblur
  - Control events activated when focusing in and out of a control.
- onselect
  - Occurs when text is selected in <input> & <textarea>
- onchange
  - Occurs when a control loses focus and has changed value.

Limitations of Web Forms

- Offers limited UI features.
- Limited UI Interactivity.
- No support for advanced UI processes, e.g. Drag and Drop (DnD) and advanced UI controls.
- Use CSS to modify look and feel.

Next Generation Web Forms

- Web Forms 2.0
  - HTML 4.0 Forms Chapter is informally known as Web Forms 1.0
  - Web Forms 2.0 is an enhancement of the “previous” version featuring data typing, new events, ease in scripting, etc.
- XForms
  - Next generation web forms.
  - XML Based
  - Feature rich forms.
- HTML 5 Forms

  Reading Assignment!

  http://www.w3schools.com/html5/html5_form_input_types.asp

CMSC 100 Official References

- HTML 4.01 Specification
  - http://www.w3.org/TR/REC-html40/
    - + Other Related W3C Recommendations esp. XHTML with focus on Web Forms/Form Modules.