

Computer Science E-1

Understanding Computers and the Internet

Lecture 4: The Internet

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Agenda

- Networks
 - Clients and Servers
 - Peer-to-Peer
 - (W)LANs and Intranets
 - WANs and Internets
 - The Internet
 - Domains
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- SSH
- The World Wide Web
 - URLs
 - HTTP
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- Blogs
- Instant Messaging
- SFTP
- Usenet

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Networks



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Networks

Domains

| Domain | Subdomains |
|-------------|-------------------------------------|
| harvard.edu | dce., eecs., fas., law., post., ... |
| | |
| | |
| | |

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Networks

Domains

| Generic top-level domains | |
|---------------------------|--|
| Un-sponsored | .biz .com .edu .gov .info .int .mil .name .net .org .pro |
| Sponsored | .aero .coop .museum |
| Infrastructure | .arpa .root |
| Startup phase | .cat .jobs .mobi .tel .post .travel .xxx |
| Proposed | .asia .geo .kid .mail .web |
| Reserved | .example .invalid .localhost .test |
| Deleted/retired | .nato |

Table excerpted from <http://en.wikipedia.org/wiki/.xxx>.

Networks

Domains

| | | |
|---|--|---|
| .ac - Ascension Island | .cu - Cuba | .ie - Ireland |
| .ad - Andorra | .cv - Cap Verde | .il - Israel |
| .ae - United Arab Emirates | .cx - Christmas Island | .im - Isle of Man |
| .af - Afghanistan | .cy - Cyprus | .in - India |
| .ag - Antigua and Barbuda | .cz - Czech Republic | .io - British Indian Ocean Territory |
| .ai - Anguilla | .de - Germany | .iq - Iraq |
| .al - Albania | .dj - Djibouti | .ir - Iran (Islamic Republic of) |
| .am - Armenia | .dk - Denmark | .is - Iceland |
| .an - Netherlands Antilles | .dm - Dominica | .it - Italy |
| .ao - Angola | .do - Dominican Republic | .je - Jersey |
| .aq - Antarctica | .dz - Algeria | .jm - Jamaica |
| .ar - Argentina | .ec - Ecuador | .jo - Jordan |
| .as - American Samoa | .ee - Estonia | .jp - Japan |
| .at - Austria | .eg - Egypt | .ke - Kenya |
| .au - Australia | .eh - Western Sahara | .kg - Kyrgyzstan |
| .aw - Aruba | .er - Eritrea | .kh - Cambodia |
| .az - Azerbaijan | .es - Spain | .ki - Kiribati |
| .ba - Bosnia and Herzegovina | .et - Ethiopia | .km - Comoros |
| .bb - Barbados | .fi - Finland | .kn - Saint Kitts and Nevis |
| .bd - Bangladesh | .fj - Fiji | .kp - Korea, Democratic People's Republic |
| .be - Belgium | .fk - Falkland Islands (Malvinas) | .kr - Korea, Republic of |
| .bf - Burkina Faso | .fm - Micronesia, Federal State of | .kw - Kuwait |
| .bg - Bulgaria | .fo - Faroe Islands | .ky - Cayman Islands |
| .bh - Bahrain | .fr - France | .kz - Kazakhstan |
| .bi - Burundi | .ga - Gabon | .la - Lao People's Democratic Republic |
| .bj - Benin | .gd - Grenada | .lb - Lebanon |
| .bm - Bermuda | .ge - Georgia | .lc - Saint Lucia |
| .bn - Brunei Darussalam | .gf - French Guiana | .li - Liechtenstein |
| .bo - Bolivia | .gg - Guernsey | .lk - Sri Lanka |
| .br - Brazil | .gh - Ghana | .lr - Liberia |
| .bs - Bahamas | .gi - Gibraltar | .ls - Lesotho |
| .bt - Bhutan | .gl - Greenland | .lt - Lithuania |
| .bv - Bouvet Island | .gm - Gambia | .lu - Luxembourg |
| .bw - Botswana | .gn - Guinea | .lv - Latvia |
| .by - Belarus | .gp - Guadeloupe | .ly - Libyan Arab Jamahiriya |
| .bz - Belize | .gq - Equatorial Guinea | .ma - Morocco |
| .ca - Canada | .gr - Greece | .mc - Monaco |
| .cc - Cocos (Keeling) Islands | .gs - South Georgia and the South Sandwich Islands | .md - Moldova, Republic of |
| .cd - Congo, Democratic Republic of the | .gt - Guatemala | .mg - Madagascar |
| .cf - Central African Republic | .gu - Guam | .mh - Marshall Islands |
| .cg - Congo, Republic of | .gw - Guinea-Bissau | .mk - Macedonia, Former Yugoslav Republic |
| .ch - Switzerland | .gy - Guyana | .ml - Mali |
| .ci - Cote d'Ivoire | .hk - Hong Kong | .mm - Myanmar |
| .ck - Cook Islands | .hm - Heard and McDonald Islands | .mn - Mongolia |
| .cl - Chile | .hn - Honduras | .mo - Macau |
| .cm - Cameroon | .hr - Croatia/Hrvatska | .mp - Northern Mariana Islands |
| .cn - China | .ht - Haiti | .mq - Martinique |
| .co - Colombia | .hu - Hungary | .mr - Mauritania |
| .cr - Costa Rica | .id - Indonesia | .ms - Montserrat |

Networks

Domains

| | | |
|-------------------------------|--------------------------------------|--|
| .mt - Malta | .re - Reunion Island | .tt - Trinidad and Tobago |
| .mu - Mauritius | .ro - Romania | .tv - Tuvalu |
| .mv - Maldives | .ru - Russian Federation | .tw - Taiwan |
| .mw - Malawi | .rw - Rwanda | .tz - Tanzania |
| .mx - Mexico | .sa - Saudi Arabia | .ua - Ukraine |
| .my - Malaysia | .sb - Solomon Islands | .ug - Uganda |
| .mz - Mozambique | .sc - Seychelles | .uk - United Kingdom |
| .na - Namibia | .sd - Sudan | .um - US Minor Outlying Islands |
| .nc - New Caledonia | .se - Sweden | .us - United States |
| .ne - Niger | .sg - Singapore | .uy - Uruguay |
| .nf - Norfolk Island | .sh - St. Helena | .uz - Uzbekistan |
| .ng - Nigeria | .si - Slovenia | .va - Holy See (City Vatican State) |
| .ni - Nicaragua | .sj - Svalbard and Jan Mayen Islands | .vc - Saint Vincent and the Grenadines |
| .nl - Netherlands | .sk - Slovak Republic | .ve - Venezuela |
| .no - Norway | .sl - Sierra Leone | .vg - Virgin Islands (British) |
| .np - Nepal | .sm - San Marino | .vi - Virgin Islands (USA) |
| .nr - Nauru | .sn - Senegal | .vn - Vietnam |
| .nu - Niue | .so - Somalia | .vu - Vanuatu |
| .nz - New Zealand | .sr - Suriname | .wf - Wallis and Futuna Islands |
| .om - Oman | .st - Sao Tome and Principe | .ws - Western Samoa |
| .pa - Panama | .sv - El Salvador | .ye - Yemen |
| .pe - Peru | .sy - Syrian Arab Republic | .yt - Mayotte |
| .pf - French Polynesia | .sz - Swaziland | .yu - Yugoslavia |
| .pg - Papua New Guinea | .tc - Turks and Caicos Islands | .za - South Africa |
| .ph - Philippines | .td - Chad | .zm - Zambia |
| .pk - Pakistan | .tf - French Southern Territories | .zw - Zimbabwe |
| .pl - Poland | .tg - Togo | |
| .pm - St. Pierre and Miquelon | .th - Thailand | |
| .pn - Pitcairn Island | .tj - Tajikistan | |
| .pr - Puerto Rico | .tk - Tokelau | |
| .ps - Palestinian Territories | .tm - Turkmenistan | |
| .pt - Portugal | .tn - Tunisia | |
| .pw - Palau | .to - Tonga | |
| .py - Paraguay | .tp - East Timor | |
| .qa - Qatar | .tr - Turkey | |

Email



Email

Addresses

| Some Canonical Forms |
|-------------------------------|
| username@domain.tld |
| username@subdomain.domain.tld |

| Examples |
|-------------------------------|
| anakin-skywalker@tatooine.org |
| billg@microsoft.com |
| csciel@lists.dce.harvard.edu |
| frodo.baggins@shire.net |
| Harry_Potter@hogwarts.edu |
| malan@post.harvard.edu |

Email

Addresses

| Which are syntactically valid? |
|--------------------------------|
| daffy duck@looneytunes.com |
| Dave@cbs |
| jay@NBC.com |
| malan@post.harvard.edu |
| somebody@franklin.ma.us |
| user@yahoo!.com |

Email

Netiquette

Date: B.C.
From: Mr. Slate <boss@slaterockandgravel.com>
To: Fred Flintstone <fred@bedrock.net>
Subject:

YOU'RE..... FIRED!

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Email

Spam

Date: Wed, 2 Oct 2002 18:33:27 -0400 (EDT)
Reply-to: b98123@excite.com
From: Barbara <b123jkr@yahoo.ca>
Subject: Are you in debt?

Are you in debt? Having trouble paying it off? We can help! We can consolidate your bills into just one monthly payment and help achieve the following:

- Save you a lot of money by eliminating late fees
- Settle your accounts for a substantially reduced amount
- Stop creditors calling you on the phone
- Help avoid bankruptcy
- .. And more!

By first reducing, and then completely removing your debts, you will be able to start fresh. Why keep dealing with the stress, headaches, and wasted money, when you can consolidate your debts and pay them off much sooner!

To obtain more information, with no obligations or costs, please fill out the form below and submit. Your submission will be processed within 10 business days and you will be shortly contacted by one of our informed staff. Thank you!

[...]

If this e-mail arrived to you by error, or you wish to never receive such advertisements from our company, please reply to this e-mail with the word REMOVE in the e-mail subject line. We apologize for any inconveniences.

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Email

Spam

From: diplomaguy@diplomas.for.you
Subject: --Bachelor's, Master'a, PhD's!--
Date: Tue, 26 Aug 2003 15:32:38 -0400 (EDT)

U N I V E R S I T Y D I P L O M A S

Obtain a prosperous future, money earning power,
and the admiration of all.

Diplomas from prestigious non-accredited
universities based on your present knowledge
and life experience.

No required tests, classes, books, or interviews.

Bachelors, masters, MBA, and doctorate (PhD)
diplomas available in the field of your choice.

No one is turned down.

Confidentiality assured.

CALL NOW to receive your diploma
within days!!!

1 - 2 8 1 - 5 8 7 - [...]

or

1 - 6 1 5 - 3 6 6 - [...]

Call 24 hours a day, 7 days a week, including
Sundays and holidays.

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Email

Emoticons

| | |
|-------|--|
| :~) | Your basic smiley. This smiley is used to inflect a sarcastic or joking statement since we can't hear voice inflection over email. |
| ;-) | Winky smiley. User just made a flirtatious and/or sarcastic remark. More of a "don't hit me for what I just said" smiley. |
| :(| Frowning smiley. User did not like that last statement or is upset or depressed about something. |
| >:-> | User just made a really devilish remark. |
| (-: | User is left handed [and smiling]. |
| :*) | User is drunk. |
| 8-) | User is wearing sunglasses. |
| :-[| User is a vampire. |
| :-E | User is a bucktoothed vampire. |
| :-F | User is a bucktoothed vampire with one tooth missing. |
| : '-(| User is crying. |
| : ')- | User is so happy, s/he is crying. |
| :<) | User is from an Ivy League School. |
| :-D | User is laughing (at you!) |
| X-(| User just died. |
| :) | Midget smiley. |
| =) | Variation on a theme... |
| :} | What should we call these? |
| :-O | oops |
| :-P | nyahhhh! |

Excerpted from <http://members.aol.com/bearpage/smileys.htm>.

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SSH



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The World Wide Web



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The World Wide Web

URLs

| Canonical Form |
|----------------|
|----------------|

| |
|-------------------------|
| protocol://machine/path |
|-------------------------|

| Examples |
|----------|
|----------|

| |
|--------------------|
| http://www.foo.com |
|--------------------|

| |
|----------------|
| http://foo.com |
|----------------|

| |
|----------------|
| http://FOO.com |
|----------------|

| |
|-------------------------------|
| http://www.foo.com/index.html |
|-------------------------------|

| |
|------------------------------|
| http://www.foo.com/help.html |
|------------------------------|

| |
|---------------------------------------|
| http://www.foo.com/index.html#section |
|---------------------------------------|

| |
|--|
| http://www.foo.com/search.cgi?phrase=what+is+foo |
|--|

| |
|-------------------|
| ftp://ftp.foo.com |
|-------------------|

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The World Wide Web

URLs

| Which are syntactically valid? |
|--------------------------------|
|--------------------------------|

| |
|--------------------|
| http:\\www.bar.com |
|--------------------|

| |
|-------------|
| www.bar.com |
|-------------|

| |
|--------------------------------------|
| http://www.bar.com/menus/friday.html |
|--------------------------------------|

| |
|---|
| http://www.bar.com/?item=pizza&topping=cheese |
|---|

| |
|------------|
| http://CNN |
|------------|

| |
|---------------------------------|
| ftp://ftp.bar.com/pub/setup.exe |
|---------------------------------|

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Blogs



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Instant Messaging



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SFTP



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Usenet

| Popular Hierarchies |
|---------------------|
| alt.* |
| biz.* |
| comp.* |
| humanities.* |
| misc.* |
| news.* |
| rec.* |
| sci.* |
| soc.* |
| talk.* |

For more thorough listings, visit <http://www.google.com/grphp> or [news://news.fas.harvard.edu](http://news.fas.harvard.edu).

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