

Internet Applications: Communication over the Web

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Communication over the Web

- ◆ “Other” uses of email
 - » spam
 - » phishing
- ◆ Group communication
 - » listserv
 - » newsgroups
 - » blogs
 - » wikis
- ◆ New forms of communication
 - » Internet telephony
 - » Internet TV

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“Other” Uses of Email

- ◆ Spamming

- » Sending unsolicited messages in bulk
 - ❖ mostly for advertising

- ◆ Phishing - to fraudulently acquire sensitive information

- » “Nigerian Sting” – fraudulently requesting money
- » manipulating stock prices
- » sending viruses or other malicious programs

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“Other” Uses of Email

Nigerian Scam

LAGOS, NIGERIA.

ATTENTION: THE PRESIDENT/CEO

DEAR SIR,

CONFIDENTIAL BUSINESS PROPOSAL

HAVING CONSULTED WITH MY COLLEAGUES AND BASED ON THE INFORMATION GATHERED FROM THE NIGERIAN CHAMBERS OF COMMERCE AND INDUSTRY, I HAVE THE PRIVILEGE TO REQUEST FOR YOUR ASSISTANCE TO TRANSFER THE SUM OF \$47,500,000.00 (FORTY SEVEN MILLION, FIVE HUNDRED THOUSAND UNITED STATES DOLLARS) INTO YOUR ACCOUNTS. THE ABOVE SUM RESULTED FROM AN OVER-INVISED CONTRACT, EXECUTED COMMISSIONED AND PAID FOR ABOUT FIVE YEARS (5) AGO BY A FOREIGN CONTRACTOR. THIS ACTION WAS HOWEVER INTENTIONAL AND SINCE THEN THE FUND HAS BEEN IN A SUSPENSE ACCOUNT AT THE CENTRAL BANK OF NIGERIA APEX BANK.

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“Other” Uses of Email

Nigerian Scam

In a 1997 newspaper article:

“We have confirmed losses just in the US of over \$100 million in the last 15 months,” said Special Agent James Caldwell, of the Secret Service financial crimes division. “And that’s just the ones we know of. We figure a lot of people don’t report them.”

<http://www.snopes.com/crime/fraud/nigeria.asp>

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“Other” Uses of Email

Phishing



1. Send thousands or even millions of emails
2. Links or buttons take readers to fraudulent websites
 - » don’t follow links directly (view source if you’re suspicious)
 - » `Bank of America`
3. Fraudulent sites mimic well known sites, collecting personal information

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“Other” Uses of Email

How to Avoid Spam

- ◆ Legislative attempts
 - » fine spammers
- ◆ Avoid giving away your email address
- ◆ Don’t publicize your email address on web pages
 - » use *username* at cs dot odu dot edu
 - » use image that shows your email address
- ◆ Use e-mail client’s spam filtering features
- ◆ Reporting to the e-mailer’s ISP
 - » usually doesn’t work because from address is often spoofed

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“Other” Uses of Email

Computer virus, worm, and Trojan horse

- ◆ Computer virus
 - » a self-replicating program
 - » spreads by inserting copies of itself into other executable code or documents
- ◆ Computer worm
 - » a self-replicating program
 - » similar to a computer virus
 - » self-contained, does not need to be part of another program to propagate itself
 - » often designed to exploit the file transmission capabilities found on many computers

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“Other” Uses of Email

Computer virus, worm, and Trojan horse

◆ Trojan horse

- » a malicious program disguised as a useful software
- » may be deliberately attached to an otherwise useful software
- » may spy on user actions
- » does not replicate itself
- » may spread virus

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“Other” Uses of Email

Avoiding Viruses and Attacks

◆ Recognize virus tricks

- » Mostly from attachments
 - ❖ Executable files: .exe, .vbs, .com, .scr, .pif, etc.
 - ❖ Zipped files
 - ❖ Disguised file names: appearing to be .txt, .jpg but appended with many blanks then the real extension name
- » Often with attractive/sympathy subject line or content
 - ❖ Money making opportunities
 - ❖ Free offers
 - ❖ Friendly warnings
 - ❖ Pleas for assistance

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“Other” Uses of Email

Avoiding Annoying Emails

- ◆ Hoaxes and chain letters
 - » Hoaxes are false claims.
 - » Purpose: to be sent to everyone you know, to make mail servers slow down to a crawl or crash
 - » False charitable solicitations
 - » Chain letters often offer luck or money
 - » False warnings
 - » False offers

- ◆ Verifying possible hoaxes
 - » www.snopes.com
 - » www.hoax-slayer.com
 - » www.truthorfiction.com

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Free Email Accounts

- ◆ You can get free e-mail accounts from various sites
 - » yahoo.com - unlimited

 - » gmail.com – 7 GB
 - ❖ very good spam filters

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Electronic Mailing List

- ◆ A collection of names and addresses
- ◆ The group of subscribers to such a list
- ◆ For collaboration on projects, for marketing, etc.
- ◆ Example
 - » Wikimedia mailing list, open to anyone who subscribes:
 - ❖ http://meta.wikimedia.org/wiki/Mailing_list

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Electronic Mailing List

Software Example: LISTSERV

- ◆ Allows you to create, manage, and control mailing lists on a corporate network or on the Internet
 - » <http://www.lsoft.com/products/listserv.asp>
- ◆ Many features:
 - » Customizable Web interface for list administrator and users
 - » Virus and spam protection
 - » Searchable Web archive
 - » Moderated and unmoderated discussion groups

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Other Methods of Communication

Newsgroups, message boards, discussion groups

- ◆ A repository for messages, questions, etc. posted from many users at different locations, started from Usenet
- ◆ Arranged into hierarchies, often searchable
- ◆ News server is a set of software used to handle the newsgroup articles
- ◆ Newsreader software is used to read newsgroups
- ◆ Readers can post responses
- ◆ <http://groups.google.com>

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Netiquette

- ◆ The conventions of politeness recognized in email, message boards, etc.
- ◆ Basic “Rules”
 - » Think before you post (or e-mail to an individual or a list. We use these terms interchangeably in here.)
 - » Use a sensible subject line.
 - » Quote the minimum necessary, and be explicit and clear.
 - » Re-read and edit your message
 - ❖ use a spell checker.

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Netiquette

More Basic “Rules”

- ◆ Be concise and to the point
- ◆ Make short lines if your software does not do automatic wrapping.
- ◆ Use short paragraphs and double spaces between them.
- ◆ Use point form when you can, but use hyphens - or asterisks * as bullets, not real bullets.
- ◆ When asking a question, do enough homework, and give details.

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Netiquette

More Basic “Rules”

- ◆ Remember that many e-mail clients cannot handle fancy formats.
- ◆ Avoid jargon terms or abbreviations.
 - » Avoid text chat lingo, especially when not emailing friends (ie, don't use this when email professors!)
 - ❖ where r u?
- ◆ E-mail salutations: Differentiate business from personal
- ◆ Signatures: In general cases, give full name and return e-mail address. (It maybe not easy to figure out the return e-mail address.)

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Netiquette

More Basic “Rules”

- ◆ Avoid attachments if not appropriate.
- ◆ Reply only to those you need to – not just to all.
- ◆ Wise to double check the “To” field of your “Reply” to an e-mail.
- ◆ Remember that e-mails are not private.
- ◆ Flames: Best to ignore it and try not to cause one. If you believe someone has violated netiquette, send a message by private e-mail; do not post a follow-up to the list.

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Weblog/Blog

- ◆ A website in which journal entries, blog posts, are posted on a regular basis
 - » typically by some individual
 - » typically displayed in reverse chronological order
 - » focusing on a particular area of interest,
 - » may allow readers to contribute, and group according to subjects
 - » supported by advertisements or fees
- ◆ Often run by web hosting services or specialized blog hosting services
 - » <http://www.blogger.com>

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Wiki

- ◆ A wiki is a collaborative website which can be directly edited by anyone with access to it.
- ◆ The first wiki was WikiWikiWeb, developed by Ward Cunningham, originally described it as “the simplest online database that could possibly work”
- ◆ Critics of open-source wiki systems argue that these systems could be easily tampered with; while proponents argue that the community of users can catch malicious content and correct it.
- ◆ Example: <http://www.wikipedia.com>

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Instant Messenger

- ◆ Allows you to communicate with others interactively over the Internet
- ◆ Example: AOL Instant Messenger
 - » Can add and structure screen names
 - » Can communicate with any persons who are logged in

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Internet Telephony

- ◆ Use of IP data connections to exchange voice and fax data (that have traditionally been carried over the public switched telephone network)
- ◆ Based on Voice over IP (VOIP) to be used over the Internet
 - » being deployed on internal corporate networks, and, via the Internet

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Internet Telephony

- ◆ What's needed
 - » Hardware
 - ❖ SIP (Session Initiation Protocol) client software on a computer,
 - ❖ a (non-traditional) hardware IP phone, or
 - ❖ ATA (Analog Telephony Adapter) plus traditional phone
 - » VoIP service provider
 - ❖ May charge extra for outgoing landlines and mobiles
 - » ISP and broadband connection to the Internet

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Internet Telephony

Characteristics

- ◆ Not using dedicated phone lines, but using packet switching instead
- ◆ Need Internet and VoIP service connections
- ◆ Special hardware/software
- ◆ Generally lower quality
- ◆ For lower cost (particularly international) calls

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Internet TV

- ◆ Be watched on a regular TV (via a set-top-box), or on a computer, or on a portable device (such as a mobile phone)
- ◆ Show a channel 'live' (like regular TV), or allow the viewer to select a show to watch on demand ("Video-on-Demand")
- ◆ Involve any budget - from home camcorder productions to expensive professional productions
- ◆ Be protected from copying, or easily duplicated as a perfect copy
- ◆ Be free or paid for - and may be supported by advertisements
- ◆ Be an interactive or passive medium

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Internet TV

Barriers

- ◆ Lack of set top boxes - these need the latest compression technologies, decoding chips are still new and expensive.
- ◆ Incompatible standards
- ◆ Low bandwidth to the home
- ◆ Restricted bandwidth in the internet backbone (this will be a problem if many people decide to adopt internet TV)
- ◆ Streaming technology - which can be of poor quality and high cost to the providers.
- ◆ Old media meeting new media

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Internet Appliances

- ◆ A single purpose device that is designed to access services on the Internet
- ◆ Examples
 - » Digital cameras to post photos instantly
 - » Intelligent home appliances
 - » Internet phones and TVs
 - » Internet-enabled point-of sale terminals

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