Department of computer science and engg.

Internet fundamentals

Sem-4TH

Section-A(notes)

e-mail (electronic mail or email)

E-mail (electronic mail) is the exchange of computer-stored messages by telecommunication. (Some publications spell it *email*; we prefer the currently more established spelling of *e-mail*.) E-mail messages are usually encoded in ASCII text. However, you can also send non-text files, such as graphic images and sound files, as attachments sent in binary streams. E-mail was one of the first uses of the Internet and is still the most popular use. A large percentage of the total traffic over the Internet is e-mail. E-mail can also be exchanged between online service provider users and in networks other than the Internet, both public and private

Electronic mail, or **email**, is a method of exchanging digital messages between people using digital devices such as computers, tablets and mobile phones. Email first entered substantial use in the 1960s and by the mid-1970s had taken the form now recognized as email. Email operates across computer networks, which in the 2010s is primarily the Internet. Some early email systems required the author and the recipient to both be online at the same time, in common with instant messaging. Today's email systems are based on a store-and-forward model. Email servers accept, forward, deliver, and store messages. Neither the users nor their computers are required to be online simultaneously; they need to connect only briefly, typically to a mail server or a webmail interface, for as long as it takes to send or receive messages.

user name

The user name, or username, by which a person is identified to a computer system or network. A user commonly must enter both a user ID and a password as an authentication mechanism during the logon process. If the system or network is connected to the Internet, the username typically is the leftmost portion of the e-mail address, which is the portion preceding the @ sign. In the e-mail address ray@contextcorporation.com, for example, ray is the username. User ID is synonymous with username

password

A password is an unspaced sequence of characters used to determine that a computer user requesting access to a computer system is really that particular user. Typically, users of a multiuser or securely protected single-user system claim a unique name (called a *user ID*) that can be generally known. In order to verify that someone entering that user ID really is that person, a second identification, the password, known only to that person and to the system itself, is entered by the user. Most networks require that end users change their passwords on a periodic basis.

EMAIL ADDRESS

The general format of an **email address** is local-part@domain, and a specific example is jsmith@example.com. An **address** consists of two parts. The part before the @ symbol (local-part) identifies the name of a mailbox. This is often the username of the recipient, e.g., jsmith.

An **email address** identifies an email box to which email messages are delivered. A wide variety of formats were used in early email systems, but only a single format is used today, following the standards developed for Internet mail systems since the 1980s. This article uses the term *email address* to refer to the **addr-spec** defined in RFC 5322, not to the **address** that is commonly used; the difference is that an address may contain a display name, a comment, or both.

An email address such as *John.Smith@example.com* is made up of a local-part, an @ symbol, then a case-insensitive domain. Although the standard specifies the local part to be case-sensitive, in practice the mail system at *example.com* may treat *John.Smith* as equivalent to *JohnSmith* or even as *johnsmith*,[1] and mail systems often limit their users' choice of name to a subset of the technically valid characters. In some cases they also limit which addresses it is possible to send mail to.

Parts of an email message

An email message consists of the following general components:

Headers

The message headers contain information concerning the sender and recipients. The exact content of mail headers can vary depending on the email system that generated the message. Generally, headers contain the following information:

- **Subject.** Subject is a description of the topic of the message and displays in most email systems that list email messages individually. A subject line could be something like "2010 company mission statement" or, if your spam filtering application is too lenient, "Lose weight fast!!! Ask me how."
- **Sender (From).** This is the sender's Internet email address. It is usually presumed to be the same as the Reply-to address, unless a different one is provided.
- **Date and time received (On)**. The date and time the message was received.
- **Reply-to.** This is the Internet email address that will become the recipient of your reply if you click the Reply button.
- **Recipient (To:).** First/last name of email recipient, as configured by the sender.
- **Recipient email address.** The Internet mail address of the recipient, or where the message was actually sent.
- **Attachments**. Files that are attached to the message.

Body

The body of a message contains text that is the actual content, such as "Employees who are eligible for the new health care program should contact their supervisors by next Friday if they want to switch." The message body also may include signatures or automatically generated text that is inserted by the sender's email system.

Mailer FEATURES:

a company that sends direct mail. A mailer often employs a list broker to assist with buying mailing lists and a service bureau to assist with the list processing

necessary to conduct their direct marketing campaigns. The term mailer is sometimes used to refer to a marketer sending email or other direct communication

Mailer may refer to:

- Mass mailer, a computer worm that spreads itself via e-mail
- Mailer (occupation), an individual employed to handle newspapers from the press to the truck.

Working of E-mail

Email working follows the client server approach. In this client is the mailer i.e. the **mail** application or **mail** program and server is a device that manages **emails**. ... The message is routed to Simple **Mail** Transfer Protocol to person B's **mail** server.

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Following example will take you through the basic steps involved in sending and receiving emails and will give you a better understanding of working of email system:

- Suppose person A wants to send an email message to person B.
- Person A composes the messages using a mailer program i.e. mail client and then select Send option.
- The message is routed to **Simple Mail Transfer Protocol** to person B's mail server.
- The mail server stores the email message on disk in an area designated for person B.

Email management

Email management is a specific field of communications **management** for managing high volumes of inbound electronic **mail** received by organizations. ... Customer service call centers currently employ **email** response **management** agents along with telephone support agents, and typically use software solutions to **manage emails**. **Email management** is a specific field of communications

management for managing high volumes of inbound electronic mail received by organizations. Today, email management is an essential component of customer service management. Customer service call centers currently employ email response management agents along with telephone support agents, and typically use software solutions to manage emails

MIME (Multi-Purpose Internet Mail Extensions)

MIME (Multi-Purpose Internet Mail Extensions) is an extension of the original Internet e-mail protocol that lets people use the protocol to exchange different kinds of data files on the Internet: audio, video, images, application programs, and other kinds, as well as the ASCII text handled in the original protocol, the Simple Mail Transport Protocol (SMTP). In 1991, Nathan Borenstein of Bellcore proposed to the IETF that SMTP be extended so that Internet (but mainly Web) clients and servers could recognize and handle other kinds of data than ASCII text. As a result, new file types were added to "mail" as a supported Internet Protocol file type.

Multipurpose Internet Mail Extensions (**MIME**) is an Internet standard that extends the format of email to support:

- Text in character sets other than ASCII
- Non-text attachments: audio, video, images, application programs etc.
- Message bodies with multiple parts
- Header information in non-ASCII character sets

Virtually all human-written Internet email and a fairly large proportion of automated email is transmitted via SMTP in MIME format.

NEWS GROUP:

A **newsgroup** is a discussion about a particular subject consisting of notes written to a central **Internet** site and redistributed through **Usenet**, a worldwide network of news discussion groups. **Usenet** uses the Network News Transfer Protocol (NNTP).

Chat room

A *chat room* is a Web site, part of a Web site, or part of an online service such as America Online, that provides a venue for communities of users with a common interest to communicate in real time.

an area on the Internet or other computer network where users can communicate, typically one dedicated to a particular topic.

What Is The Internet?

In the broadest terms, people like to view the Internet as a cloud, you put your data in one place, it comes out the place you want it to on the other side. In reality the internet is tens of thousands kilometers of fiber optic cable, hundreds of thousands to millions of kilometers of copper wire, and hardware and software connecting them all together in a redundant, fast, and self-sufficient network. But not to worry, it's not that bad: you only have to worry about a very small portion of the network, you can let someone else worry about the rest, and you even get someone to yell at when things go wrong.

Network congestion

Network congestion in data networking and queueing theory is the reduced quality of service that occurs when a network node is carrying more data than it can handle. Typical effects include queueing delay, packet loss or the blocking of new connections. A consequence of congestion is that an incremental increase in offered load leads either only to a small increase or even a decrease in network throughput.[1]

Network protocols that use aggressive retransmissions to compensate for packet loss due to congestion can increase congestion, even after the initial load has been reduced to a level that would not normally have induced network congestion. Such networks exhibit two stable states under the same level of load. The stable state with low throughput is known as *congestive collapse*.

Networks use congestion control and congestion avoidance techniques to try to avoid collapse. These include: exponential backoff in protocols such as 802.11 CSMA/CA and the original Ethernet, window reduction in TCP, and fair queueing in devices such as routers. Another method is to implement priority schemes, transmitting some packets with higher priority than others. A third avoidance method is the explicit allocation of network resources to specific flows. One example of this is the use of Contention-Free Transmission Opportunities (CFTXOPs) in the ITU-T G.hn standard, which provides high-speed (up to 1 Gbit/s) local area networking over varying wires (power lines, phone lines and coaxial cables).

Internet culture

Internet culture is also the study of various social phenomena associated with the **Internet** and other new forms of the network communication, such as online communities, online multi-player gaming, wearable computing, social gaming, social media, mobile apps, augmented reality, and texting, and includes issues related.

Computer culture is the culture that has emerged, or is emerging, from the use of computer networks for communication, entertainment, and business. *Internet culture* is also the study of various social phenomena associated with the Internet and other new forms of the network communication, such as online communities, online multi-player gaming, wearable computing, social gaming, social media, mobile apps, augmented reality, and texting,[1] and includes issues related to identity, privacy, and network formation.

Introduction to Business Culture

The www.businessculture.org website will give you an in-depth insight into European Business Culture across 31 European Countries. However, before you look at the business culture definition it is necessary to understand what culture is.

Culture illustrates the accepted norms and values and traditional behaviour of a group. One definition of culture by Deal and Kennedy is *"the way a we do things around here"*. However, culture also evolves over time. The culture of each country has its own beliefs, values and activities. In other words culture can be defined as an evolving set of collective beliefs, values and attitudes.

Internet Service Providers (ISP)

- Internet Service Provider (ISP) is a company offering access to internet. ...
- Dial-up connection uses telephone line to connect PC to the internet. ...
- ISDN is acronym of Integrated Services Digital Network. ...
- Key points:
- DSL is acronym of Digital Subscriber Line. ...
- Key Points:
- Key Points:

Internet Connections

When determining which type of Internet connection is right for you or your family, it's important to understand the distinction between each connection. In

today's age, there are numerous ways to connect laptops, desktops, mobile phones, gaming consoles, e-readers and tablets to the Internet. Some of the most widely used Internet connections are described below.

Wireless

Radio frequency bands are used in place of telephone or cable networks. One of the greatest advantages of wireless Internet connections is the "always-on" connection that can be accessed from any location that falls within network coverage. Wireless connections are made possible through the use of a modem, which picks up Internet signals and sends them to other devices.

Mobile

Many cell phone and smartphone providers offer voice plans with Internet access. Mobile Internet connections provide good speeds and allow you to access the Internet on the go.

Hotspots

Hotspots are sites that offer Internet access over a wireless local area network (WLAN) by way of a router that then connects to an Internet service provider. Hotspots utilize Wi-Fi technology, which allows electronic devices to connect to the Internet or exchange data wirelessly through radio waves. Hotspots can be phone-based or free-standing, commercial or free to the public.

Dial-Up

Dial-up connections require users to link their phone line to a computer in order to access the Internet. This particular type of connection—also referred to as analog—does not permit users to make or receive phone calls through their home phone service while using the Internet.

Broadband

This high-speed Internet connection is provided through either cable or telephone companies. One of the fastest options available, broadband Internet uses multiple data channels to send large quantities of information. The term broadband is shorthand for broad bandwidth. Broadband Internet connections such as DSL and

cable are considered high-bandwidth connections. Although many DSL connections can be considered broadband, not all broadband connections are DSL.

DSL

DSL, which stands for Digital Subscriber Line, uses existing 2-wire copper telephone line connected to one's home so service is delivered at the same time as landline telephone service. Customers can still place calls while surfing the Internet.

Cable

Cable Internet connection is a form of broadband access. Through use of a cable modem, users can access the Internet over cable TV lines. Cable modems can provide extremely fast access to the Internet.

Satellite

In certain areas where broadband connection is not yet offered, a satellite Internet option may be available. Similar to wireless access, satellite connection utilizes a modem.

ISDN

ISDN (Integrated Services Digital Network) allows users to send data, voice and video content over digital telephone lines or standard telephone wires. The installation of an ISDN adapter is required at both ends of the transmission—on the part of the user as well as the Internet access provider.

There are quite a few other Internet connection options available, including T-1 lines, T-3 lines, OC (Optical Carrier) and other DSL technologies.

DOMAIN NAME

A **domain name** is an identification string that defines a realm of administrative autonomy, authority or control within the Internet. **Domain names** are formed by the rules and procedures of the **Domain Name** System (DNS). Any **name** registered in the DNS is a **domain name**.

A **domain name** is an identification string that defines a realm of administrative autonomy, authority or control within the Internet. Domain names are formed by the rules and procedures of the Domain Name System (DNS). Any name registered in the DNS is a domain name. Domain names are used in various networking contexts and application-specific naming and addressing purposes. In general, a domain name represents an Internet Protocol (IP) resource, such as a personal computer used to access the Internet, a server computer hosting a web site, or the web site itself or any other service communicated via the Internet. In 2015, 294 million domain names had been registered

Domain Name Servers (DNS) are the Internet's equivalent of a phone book. They maintain a directory of **domain names** and translate them to Internet Protocol (IP) addresses. This is necessary because, although **domain names** are easy for people to remember, computers or machines, access websites based on IP addresses.

Internet Protocol version 6 (IPv6)

Internet Protocol version 6 (**IPv6**) is the most recent version of the Internet Protocol (IP), the communications protocol that provides an identification and location system for computers on networks and routes traffic across the Internet. IPv6 was developed by the Internet Engineering Task Force (IETF) to deal with the long-anticipated problem of IPv4 address exhaustion. IPv6 is intended to replace IPv4

IPv6 provides other technical benefits in addition to a larger addressing space. In particular, it permits hierarchical address allocation methods that facilitate route aggregation across the Internet, and thus limit the expansion of routing tables. The use of multicast addressing is expanded and simplified, and provides additional optimization for the delivery of services. Device mobility, security, and configuration aspects have been considered in the design of the protocol.

Modem

A **modem** (**mo**dulator-**dem**odulator) is a network hardware device that modulates one or more carrier wave signals to encode digital information for transmission and demodulates signals to decode the transmitted information. The goal is to produce a signal that can be transmitted easily and decoded to reproduce the original digital data. Modems can be used with any means of transmitting analog signals, from light emitting diodes to radio. A common type of modem is one that turns the digital data of a computer into modulated electrical signal for transmission over

telephone lines and demodulated by another modem at the receiver side to recover the digital data.

Modems are generally classified by the amount of data they can send in a given unit of time, usually expressed in bits per second (symbol **bit/s**, sometimes abbreviated "bps"), or bytes per second (symbol **B/s**). Modems can also be classified by their symbol rate, measured in baud. The baud unit denotes symbols per second, or the number of times per second the modem sends a new signal. For example, the ITU V.21 standard used audio frequency shift keying with two possible frequencies, corresponding to two distinct symbols (or one bit per symbol), to carry 300 bits per second using 300 baud. By contrast, the original ITU V.22 standard, which could transmit and receive four distinct symbols (two bits per symbol), transmitted 1,200 bits by sending 600 symbols per second (600 baud) using phase shift keying.

Communication software

Communications software is **program** that helps to pass data and information between systems. This type of **software** offers remote access to computers and transmits files in multiple formats between systems. **Examples** of **communication software** are email, live chat, messaging **software**, and file transfer protocol (FTP).