01 Zero & One

Unit 5: Communication

Programming & AI, 1st secondary (Introduction to ICT)



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5-1 Development of Communication Methods

- **Before telecommunications**
  - Long ago: **signal fires** or beating drums to pass on simple information.
  - After writing was invented: messages were written on **paper** and carried by messengers or **carrier pigeons**.
  - **1840:** the **modern postal system** was established.
- **The beginning of telecommunications**
  - **1837
  - **1876
  - **1895
  - **1946:** mobile phone service (**cellular phones**) began in the United States.
- **Mass communication**: A means of delivering information to **a large number of people at once**
- **Development of mass communication**
  - **Mid-15th century
  - **1906:** the first experimental **radio** broadcast in the United States.
  - **1928:** the first experimental **television** broadcast in the United States.
- **Development of the Internet**: **1969:** with support from the US Department of Defense, an experiment was run on a computer network called **ARPANET**

Signal fires	Fires lit long ago to pass on simple information.
Modern postal system	The mail system established in 1840.
Morse telegraph	Morse's 1837 invention for sending and receiving codes.
Telephone	Bell's 1876 invention for talking at a distance.
Wireless telegraph	Marconi's 1895 invention that led to radio, TV and mobile phones.
Mass communication	Sending information to a large number of people at once.
Movable-type printing press	Gutenberg's 15th-century invention for printing in large amounts.
ARPANET	The 1969 computer network that grew into the Internet.

5-2 Communication and Its Forms

- **What is communication?**: **Communication:** = receiving and exchanging information between people
- **By the number of senders and receivers**
  - **One-to-one (individual type):** one sender to one receiver
  - **One-to-many (mass media type):** one sender to many people
  - **Many-to-one (reverse mass media type):** many people to one receiver
  - **Many-to-many (conference type):** many people to many people
- **By the location of sender and receiver**
  - **Direct communication:** face to face
  - **Indirect communication:** each person is somewhere else

- **By synchronization**
  - **Synchronous:** both sides share information **at about the same time**
  - **Asynchronous:** each side sends and receives **at a time that suits them**
- **Put them together**
  - **Conversation / presentation:** → direct and synchronous.
  - **Telephone / video call:** → indirect and synchronous.
  - **Email / messaging app / bulletin board:** → indirect and asynchronous.

Communication	Receiving and exchanging information between people.
One-to-one (Individual type)	One sender to one receiver, such as a letter or phone call.
One-to-many (Mass media type)	One sender to many receivers, such as a newspaper or TV.
Many-to-one (Reverse mass media type)	Many senders to one receiver, such as a survey.
Many-to-many (Conference type)	Many senders to many receivers, such as a video conference.
Direct communication	Face-to-face communication, limited by time and place.
Indirect communication	Communication at a distance, without time and place limits.
Synchronous	Sender and receiver share information at about the same time.
Asynchronous	Information is sent and received at times that suit each side.

5-3 Internet and Communication

- **Email**
  - **To:** the main recipient the message is addressed to.
  - **CC:** people you want to share the content with
  - **BCC:** people you share with without the others seeing their addresses
- **Other tools**
  - **Bulletin board system (BBS):** post a message and write replies to other people's messages.
  - **Messaging app:** text, pictures and video for individuals or groups
  - **Video call:** real-time talk while seeing the other person's video.
  - **Blog:** from **web + log**
  - **Social media:** platforms where people connect with each other.
  - **Video sharing platform:** a wide audience posts and watches each other's videos.
- **Anonymity**
  - **Flaming:** attacking, critical comments pile up on one post.
  - **Fake news:** false information spread on social media.
- **Other features**
  - **Immediacy:** the reply comes right away.
  - **Convenience:** communicating is easy and smooth.
  - **Recordability:** everything sent leaves a **record (log)**, and what is published is hard to erase completely.

Broadcast capability	Email's ability to send one message to many recipients.
CC	Email field for sharing a copy; all recipients see these addresses.
BCC	Email field for sharing a copy without other recipients seeing the address.
Bulletin board system (BBS)	A tool for posting messages and replying to others.

Messaging app	A tool for exchanging text, images and video with people or groups.
Blog	From web + log; a service for publishing writing such as a diary.
Video sharing platform	A service where a wide audience posts and watches videos.
Anonymity	Hiding information that could identify you.
Immediacy	Getting a reply from the other side right away.
Recordability	Everything sent on the Internet leaves a record (log).

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