

Unit 1 overview

Online services

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|--------------------------|
| Communication |
| Real-time information |
| Government |
| Commerce |
| Education |
| Entertainment |
| Virtual Learning network |
| Business |
| Download services |

Online advertisement

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|-----------------|
| Banner adverts |
| Pop-up adverts |
| Affiliate model |

Online documents and file compression

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|----------------------|
| Data compression |
| Compression formats |
| Lossy compression |
| Lossless compression |

Online software and backup

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|----------------------|
| Online software |
| Stand-alone software |

Collaborative working

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| Advantages of collaborative working |
| Levels of access |
| File permission |
| Version control |

Online communication

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|------------------------|
| Plubishing information |
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| Sharing information |
| Online communities |

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| Netiquette |
| Profile |
| Instant messaging |
| Client and server roles in instant messaging |

Voice over Internet Protocol

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| Advantages of VOIP |
| Disadvantages of VOIP |

Cloud computing

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| Benefits of cloud storage |
| Drawbacks of cloud storage |

Ubiquitous computing

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|-------------------------|
| RFID chips |
| The Internet of objects |

The internet – hardware

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|--------------------|
| Server |
| Client |
| Connections/cables |
| Backbone |

The internet – network diagrams

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|---------------------------|
| POP – Point of presence |
| NAP- Network access point |

Connection methods

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|-----------|
| Wireless |
| Broadband |
| Dial-up |

Internet protocols

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|----------------------------------|
| TCP |
| IP |
| FTP |
| Data exchange – packet switching |

World Wide Web

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|-------------|
| Hyperlinks |
| Web servers |
| Browsers |

HTML

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|----------------------|
| HTML tags / elements |
| Small example |

URLs

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|---------------|
| Web protocols |
| Domains |

Search Engines

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| Web crawlers/spiders |
| Index |
| Search results |

Email – purpose and uses

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| Benefits |
| Limits |

Email protocols

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| SMTP |
| POP3 |
| IMAP |

Data exchange – packet switching

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| Data packets |
| VoIP and packet switching |
| Advantages of packet switching |

Data exchange – transmission modes

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| Serial |
| Parallel |

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| Simplex |
| Half-duplex |
| Full-duplex |

wired transmission methods

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| UTP / STP |
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| Coaxial |
| Fibre optic |

Wireless transmission methods

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| Infrared |
| Microwave |
| Satellite |

Client-side processing

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| Benefits / Drawbacks |
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Server-side processing

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|----------------------|
| Benefits / Drawbacks |
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Database theory

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| Flat file databases |
| Relational databases |

Database in practice

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| DBMS (Data-base Manipulation System) |
| SQL (Structured Query Language) |

Threats to data

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| Opportunity threats |
| Computer viruses |
| Other malware |
| Phishing |
| Accidental damage |
| Hackers |

Protection of data

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|----------------------------|
| Physical barriers |
| Password control of access |
| Access levels |
| Anti-virus software |
| Firewall |
| Encryption |
| Backup and recovery |
| Recovery |
| Personal safety |

Legislation

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|-----------------------------------|
| Data Protection Act |
| Computer Misuse Act |
| Copyright, Design and Patents Act |
| Freedom of Information Act |