System backup

IB Computer Science
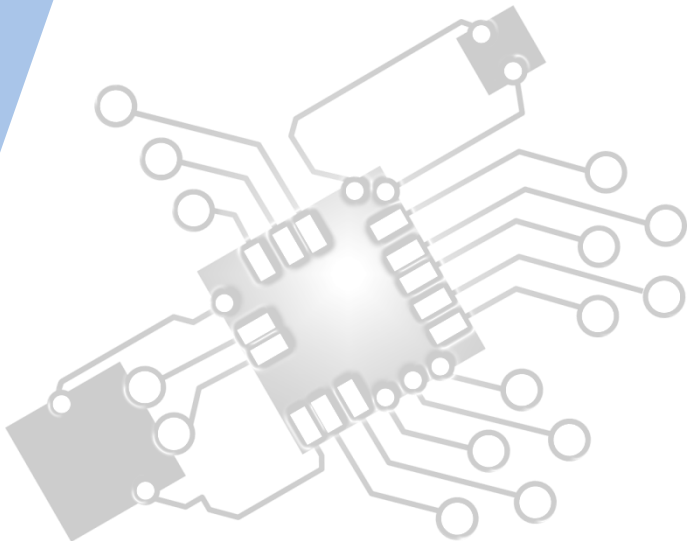
HL Topics 1-7, D1-4
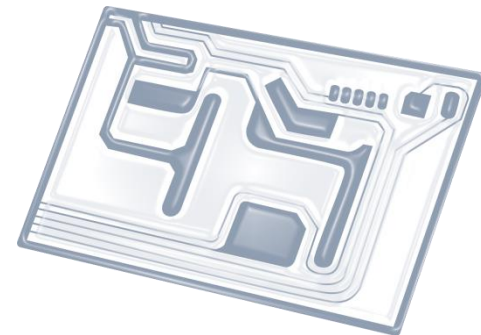
1: System design

2: Computer Organisation

3: Networks

4: Computational thinking

5: Abstract data structures

6: Resource management

7: Control

D: OOP

HL & SL 1.1 Overview

Planning and system installation

1.1.1 Identify the context for which a new system is planned.

1.1.2 Describe the need for change management

1.1.3 Outline compatibility issues resulting from situations including legacy systems or business mergers.

1.1.4 Compare the implementation of systems using a client's hardware with hosting systems remotely

1.1.5 Evaluate alternative installation processes

1.1.6 Discuss problems that may arise as a part of data migration

1.1.7 Suggest various types of testing

User focus

1.1.8 Describe the importance of user documentation

1.1.9 Evaluate different methods of providing user documentation

1.1.10 Evaluate different methods of delivering user training

System backup

1.1.11 Identify a range of causes of data loss

1.1.12 Outline the consequences of data loss in a specified situation

1.1.13 Describe a range of methods that can be used to prevent data loss

Software deployment

1.1.14 Describe strategies for managing releases and updates

1: System design

2: Computer Organisation

3: Networks

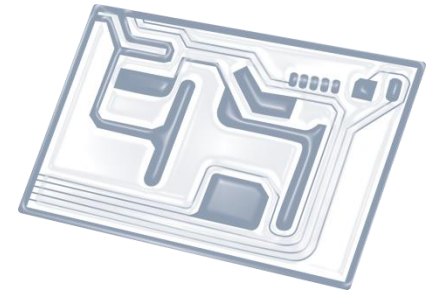4: Computational thinking

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Topic 1.1.13

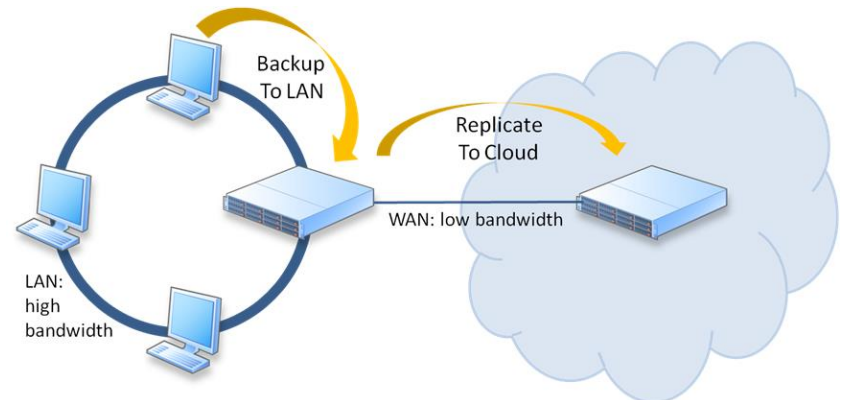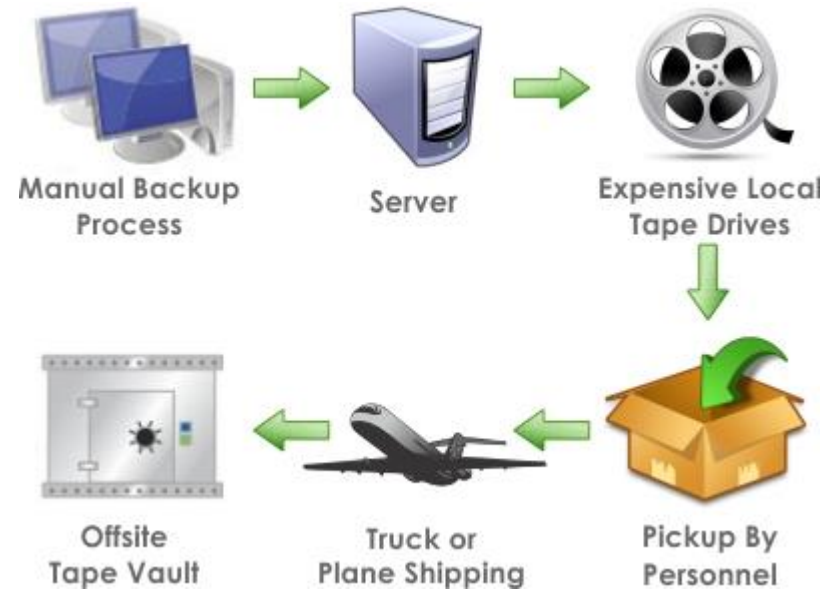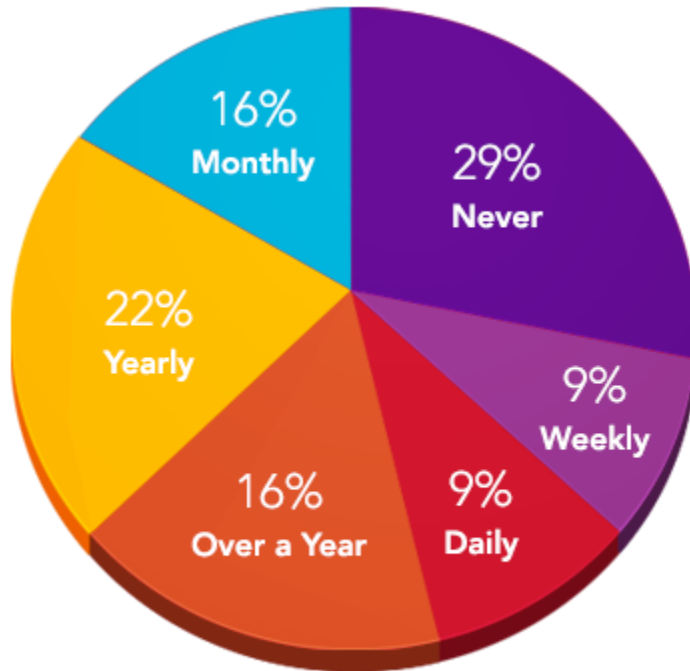Describe a range of **methods** that can be used to **prevent data loss**

Back it up!!

- **Regular back ups:** By copying all sensitive information on to a different medium than the one used in the system, like a second hard disk or CDs, chance or information loss can be reduced significantly. By storing these media physically separated from the system, data loss due to malicious activities can be prevented as well. In the case of very sensitive information of large companies like Google, information is often duplicated on servers separated by large distances and in different climates to reduce the chance of data loss due to environmental causes such as tornado or earthquake.
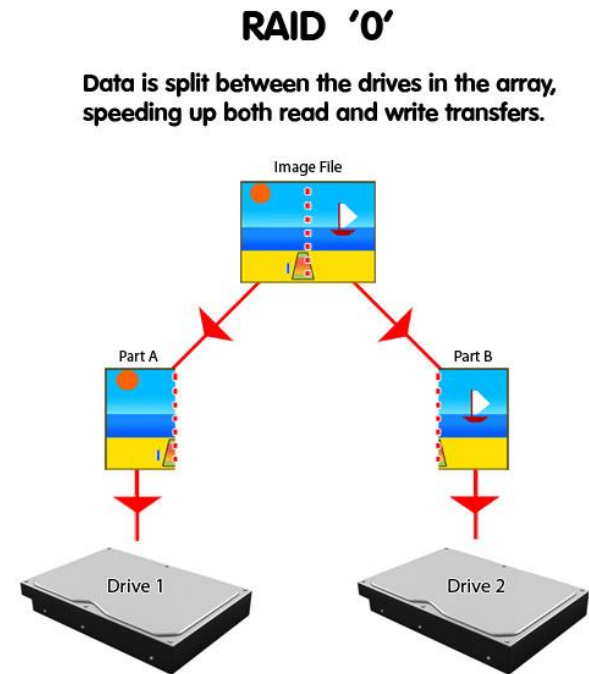
Hard copies

- **Making hard copies:** In some cases, information can also be printed out to be archived, like books, texts, important contracts or scientific papers. However creating hard copies can be expensive and take up a large amount space. Hard copies are also liable to data loss, as in the case of print outs getting burned in a fire.

Backups? Who does *backups?*

16% **Monthly**
29% **Never**
22% **Yearly**
9% **Weekly**
16% **Over a Year**
9% **Daily**

Manual Backup Process → Server → Expensive Local Tape Drives

Offsite Tape Vault ← Truck or Plane Shipping ← Pickup By Personnel

Backup To LAN
Replicate To Cloud
LAN: high bandwidth
WAN: low bandwidth

Methods to prevent data loss

- Fail over systems
- Redundancy
- Removable media
- Offsite/online storage
- Physical security

RAID '0'

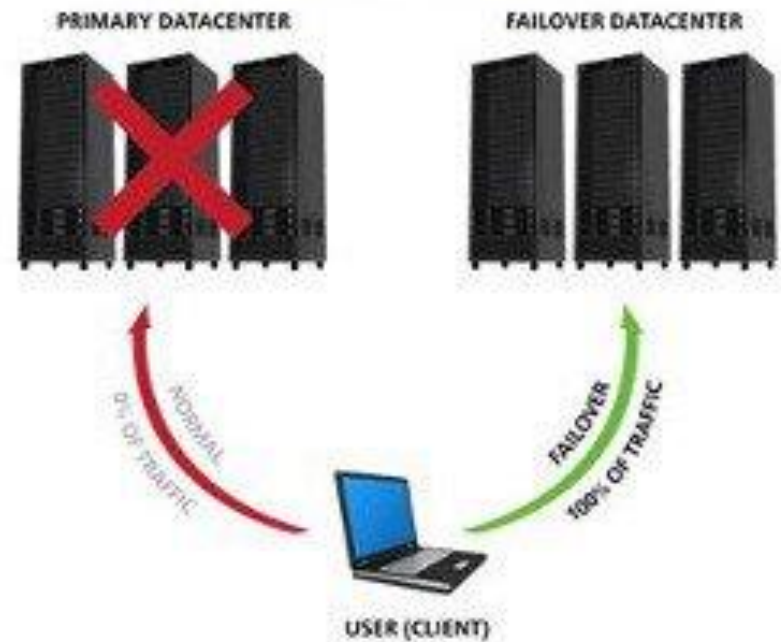Data is split between the drives in the array, speeding up both read and write transfers.

Image File

Part A   Part B

Drive 1   Drive 2

Failover / Redundancy

Physical security