

Basic Concepts of IT

Date 20/03/2021

Data

- Data refers to unprocessed and meaningless raw facts which can contain

- numbers
- alphabetic characters
- figures
- images
- videos
- audios



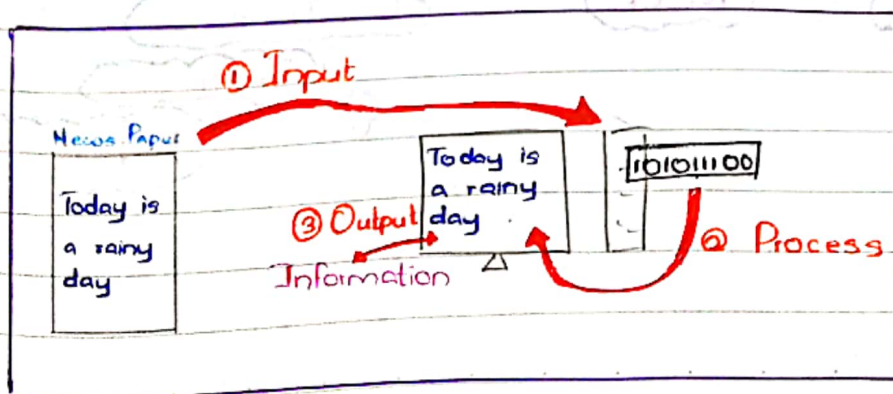
- unprocessed
- meaningless
- cannot be used to make decisions

Taking data as inputs and providing informations as output

- Processed
- Meaningful
- Can be used to make decisions.

Information

- Information refers to processed and meaningful data which can be used to update the knowledge.



Big data Analytics.

Big data.

Ex:- Business organizations & capturing data from customers daily.

Analytics.

Ex:- Analysing the data to predict the customer behaviours.

Knowledge.

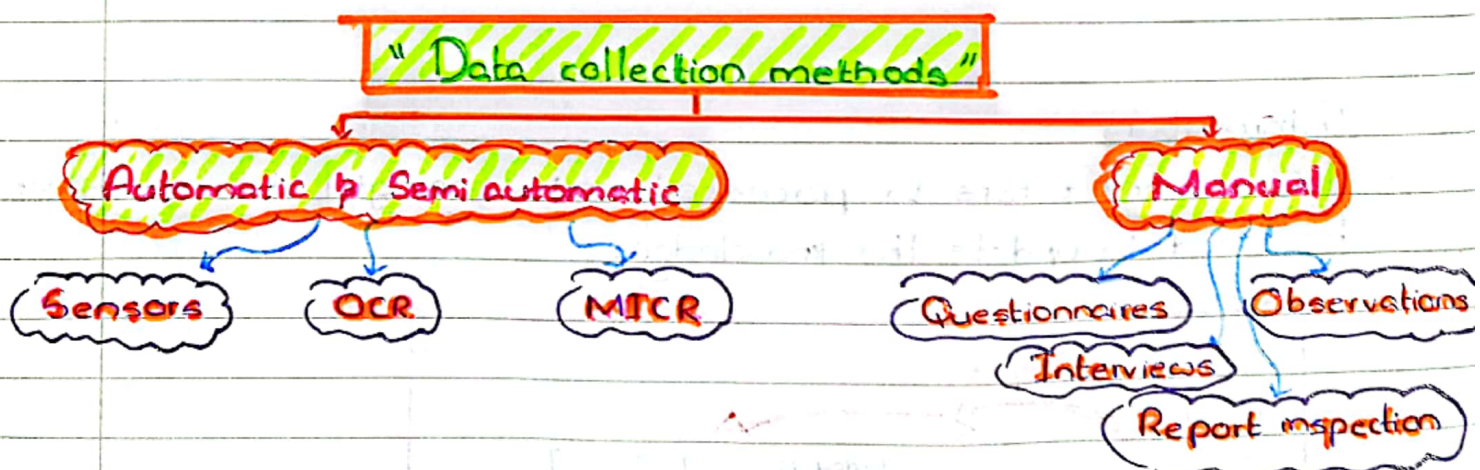
- * Knowledge is obtained through information.

Information

- * Processed data which is converted to be meaningful and useful to make decisions.

Wisdom ("Apply knowledge in practice")

- * Knowing when to apply the respective knowledge



Questionnaires

* Printed set of questions which is given to respondents and they will be filling it with their responses.

* Types of questions in questionnaires.

1. Closed ended (MCQ's)

2. Open ended (Essay)

* Advantage

→ can obtain a quick feedback from a large number of respondents.

→ saves time, effort and cash.

* Disadvantages

→ cannot obtain customized responses on individual basis.

Interview

* It's a discussion between 2 parties where one side asks questions and other side answers.

* Advantages

→ Can obtain more customized responses by asking follow up questions

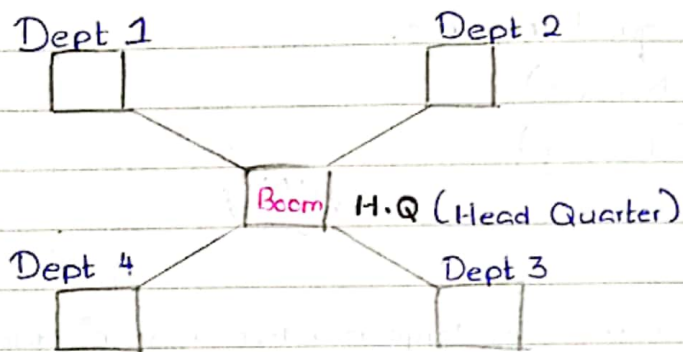
* Disadvantage

→ Interviewer's bias (favouritism) can result.

→ Consumes more effort and time

ARPANET

Advanced Research Project Agency Network.



* A centralized network structure.

Internet

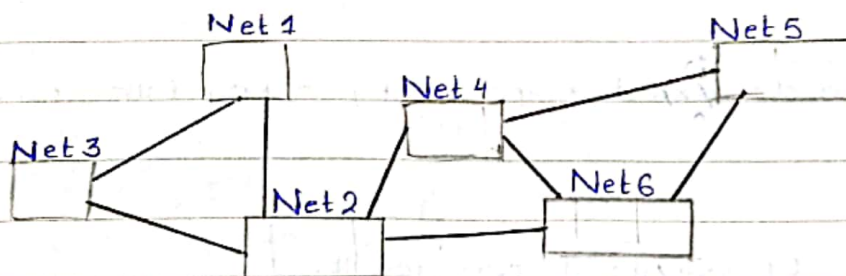
Internet → Network

↓
Interconnected

↓

Interconnected networks.

} A network of networks.



* Has a distributed structure.

Protocol

A set of ~~protocols~~ rules used by the devices or the applications to communicate with each other, is known as protocol.

g:- TCP,
HTTP
TP

Services provided by the internet.

WWW

World Wide Web.
Provide access to
the websites.

Video Conferencing

Email

Chatting

File transfer

VOIP

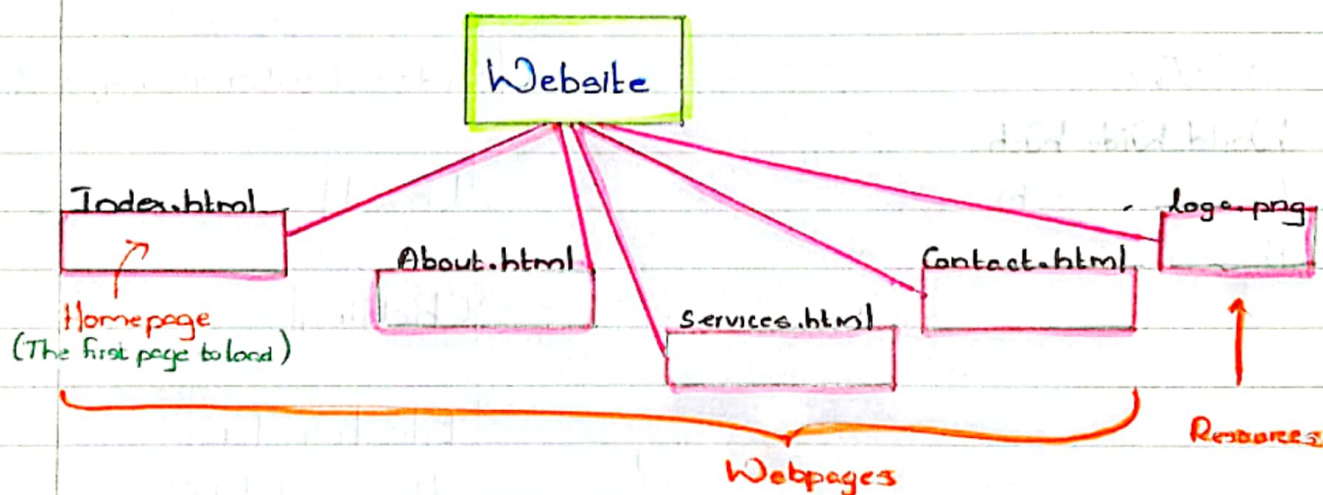
Voice Over Internet Protocol.

WWW - World Wide Web

- * Web browsers are required to surf World Wide Web

Ex:- Safari,
Chrome,
Firefox,
UC browser
Opera
Tor.

- * A website consists of a collection of webpages and resources.



Sub domain Top level domain resource

https:// live . itgurukul / books / emoney . pdf

Hyper text transfer Main domain directory

protocol (secured)

URL (Uniform Resource Locator)

Cloud is another term for internet.

Cloud computing service models

IaaS

Infrastructure as a service

A virtual computer is provided to access remotely via internet where the operating systems, RAM, HDD space, CPU speed can be figured online.

Eg:- Google compute engine, Amazon EC2

PaaS

Platform as a service

A solution is provided to create and run applications online. (No need to worry about OS, RAM, HDD etc)

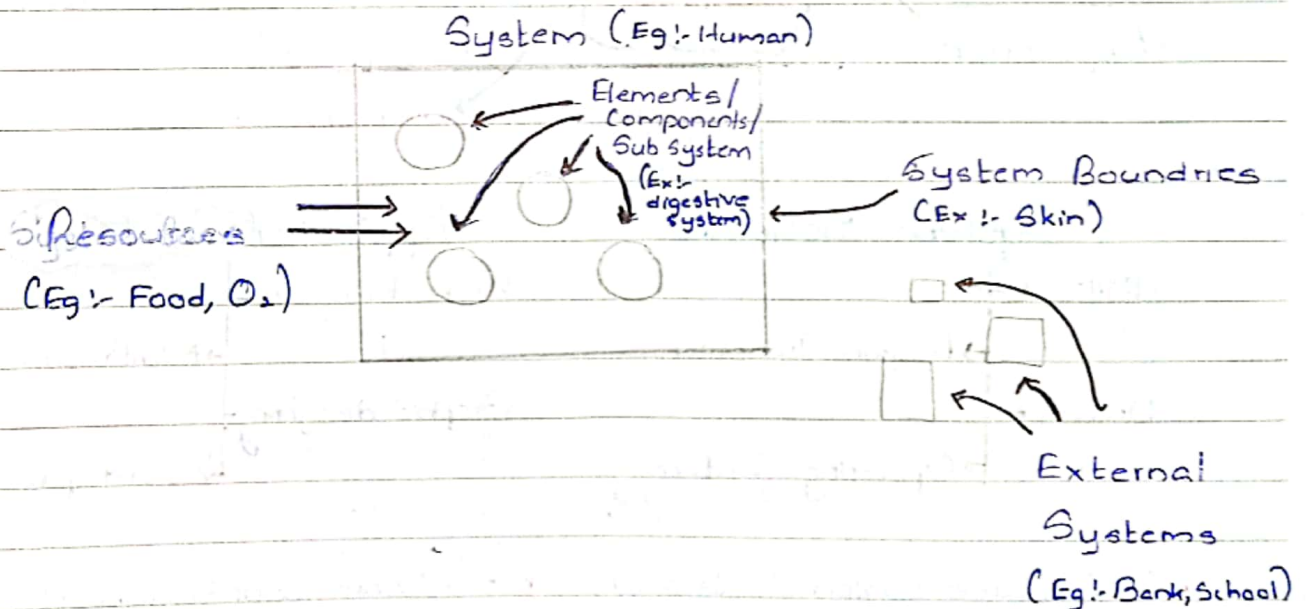
Eg:- Zoho creator, Wix.com

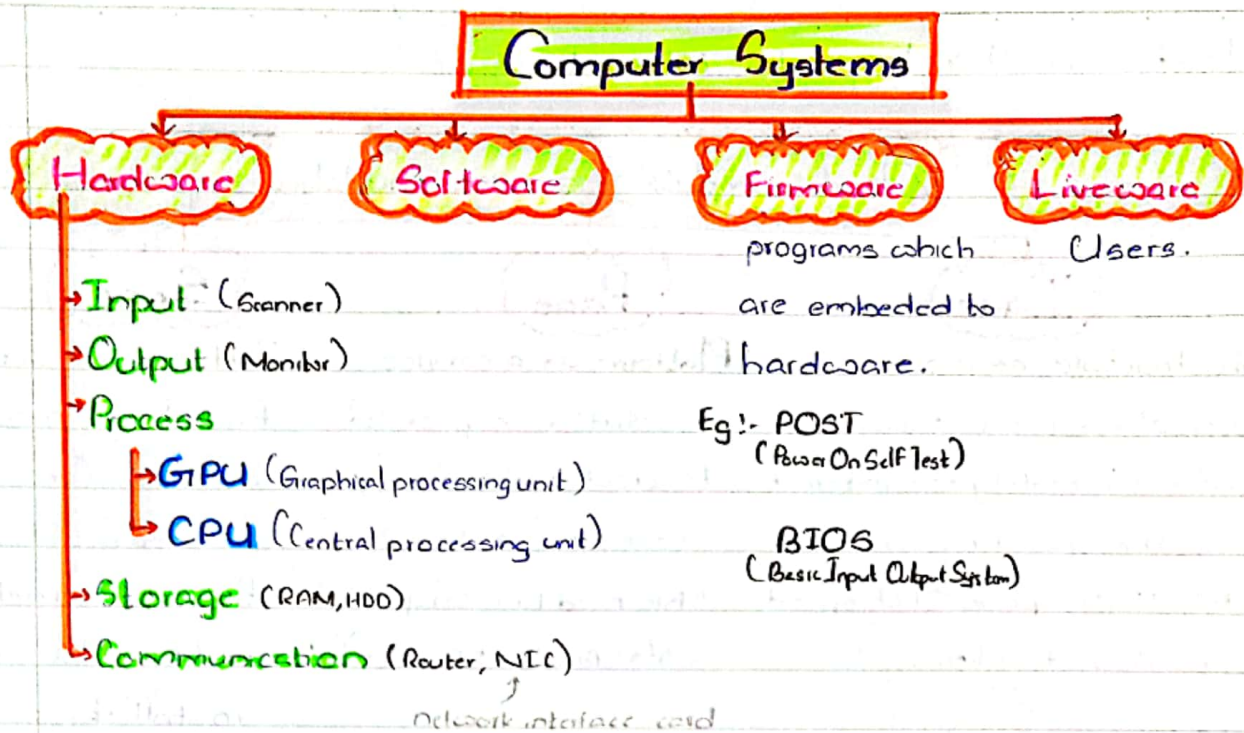
SaaS

Software as a service

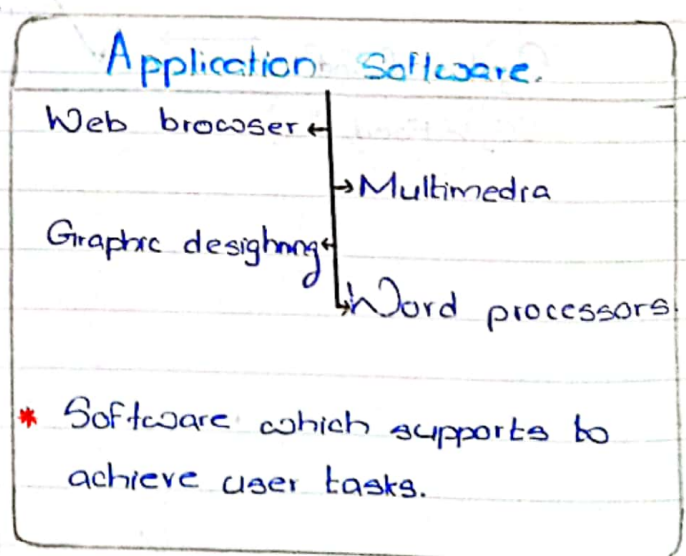
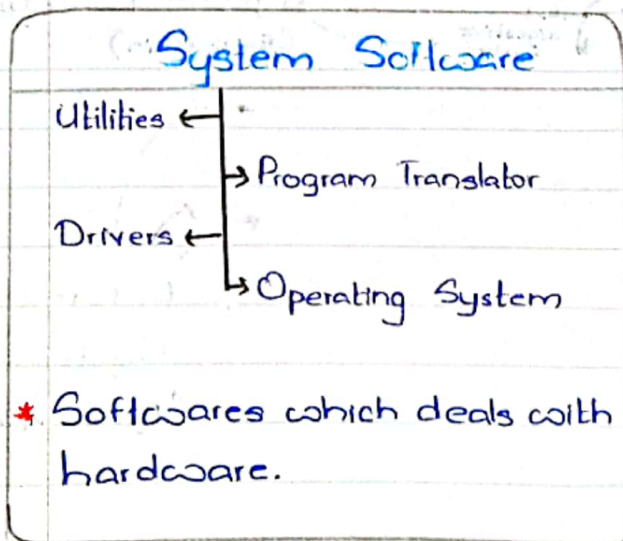
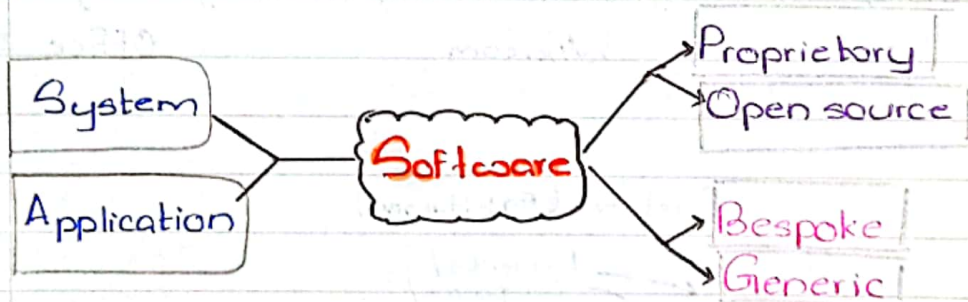
Providing and using the software via web browser through internet without having to install it.

Eg:- Google DOC's, Office 365





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Proprietary

- * A software which is owned by a company or an individual
Eg:- Microsoft office, Microsoft Windows.
- * The source code is hidden.
- * Usually requires to pay and obtain a licence to use.

Open Source.

- * A community of users or developers here built the product.
Ex:- Ubuntu, Open office.
- * The source code is visible.
- * The licence to use or distribute the software is given free.

Generic

- Ready made software.
- Softwares which is developed & available to use.
Ex:- Ms. Office.

- Advantages

- Reliable
- Less cost
- User friendly

- Disadvantages

- Less customizability
- Might not fit for purpose

Bespoke.

- Tailor made softwares.
- Softwares which will be developed (Custom made) based on requirement.
Ex:- Banking Solution.

- Advantages.

- Fit for purpose
- Customizability.

- Disadvantages.

- Unreliable
- Higher cost
- Not tested properly.

Printers.

Impact

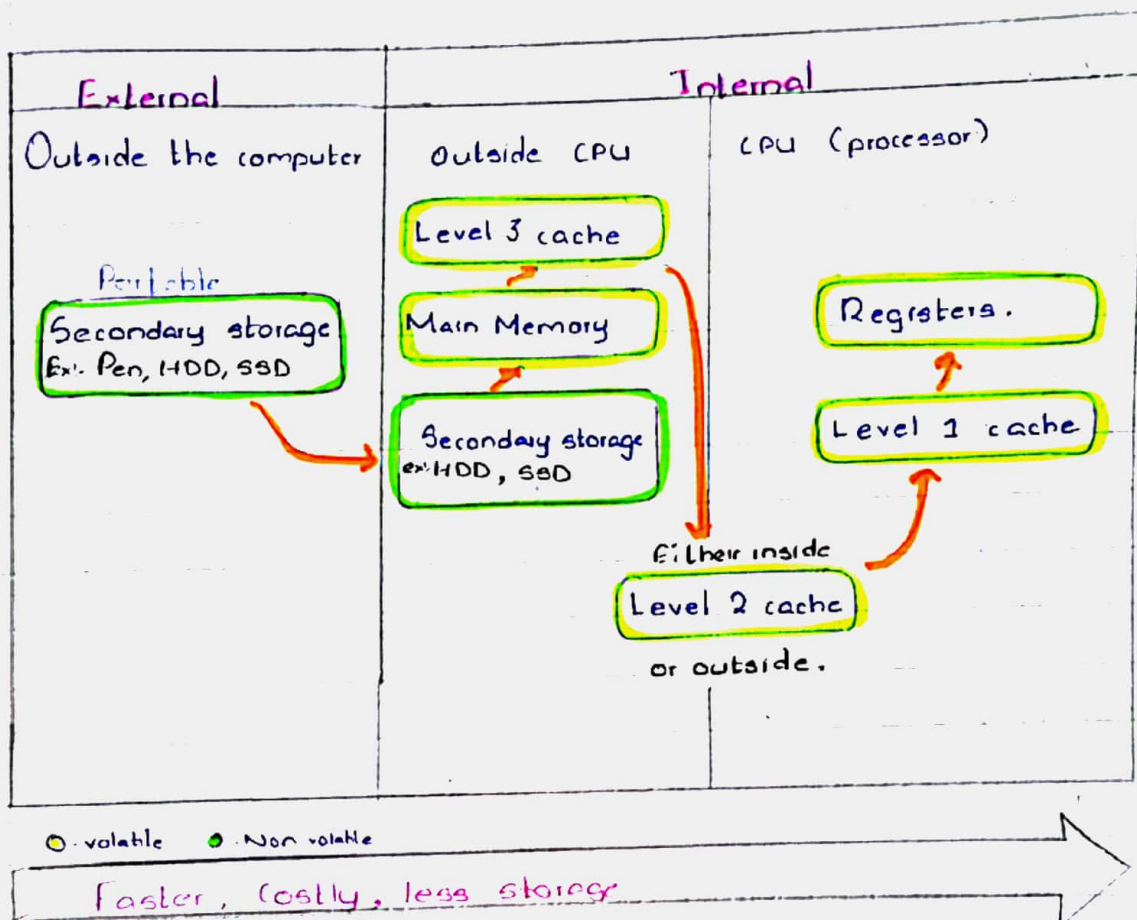
Eg. Dot matrix printers.

Non Impact

Inkjet

Laserjet.

Memories



Validation & Verification.

Validation

- Length check
- Presence check
- Format check
- Type check
- Range check

Verification

- Visual check
- Double entry

Validation (acceptability)

NIC -

Are entries acceptable as an NIC or not.

Verification (correctness)

NIC -

The entries entered are correct.

* Length check,

Checking an entry against a minimum or maximum number of characters.

Ex: Contact number in local format contains 10 digit.

- contact - ✓ Valid
- contact - ✗ Invalid

* Presence check,

check if a value is entered to a field or not.

Ex: It is mandatory to input username.

- Username - ✓ Valid
- Username - ✗ Invalid

* Format check,

- Check any entry against a pattern which contains mandatory characters.

Ex: An email address must contain '@' followed by '.'

- email ✓ valid
- email (✗) Invalid

* Type check,

- check an entry against a certain data type such as alphabetic characters or integers or decimals... etc.

Ex: Age field accepts numerical integers only.

- Age ✓ valid
- Age (✗) Invalid
- Age (✗) Invalid

* Range check,

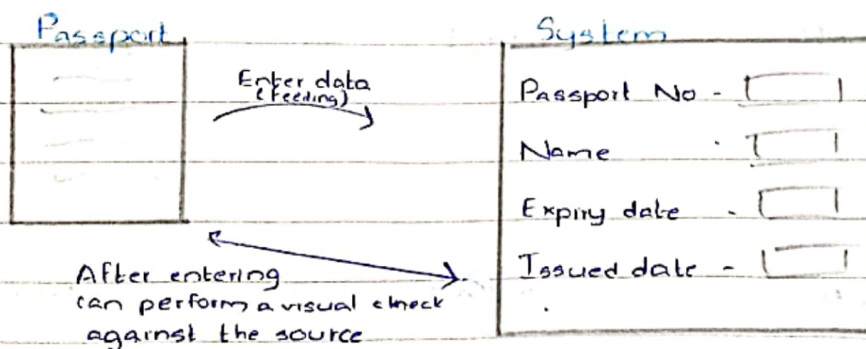
- check if a numerical entry is with a minimum and maximum value range.

Ex: Acceptable mark is between 0 and 100 (inclusive)

- Mark 95 ✓ valid
- Mark -20 (✗) Invalid
- Mark 101 (✗) Invalid

* Visual check,

- (check against a source visually after entering (feeding) data.



* Double entry,

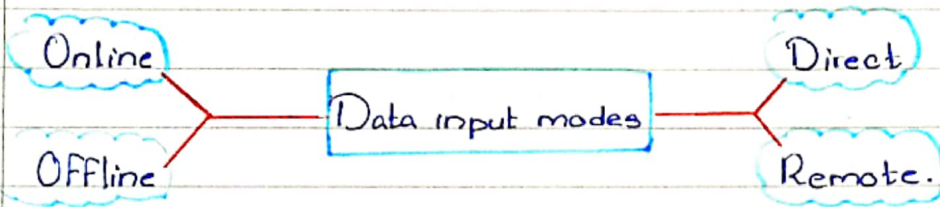
Input the same data twice to verify the entry.

Ex. Enter password twice to ensure the entries are same.

- Password } ⊗ Not verified incorrect
- Password }
- Password } ✓ verified
- Password } (Check if both are same)

19/06/2021

Modes of data input.



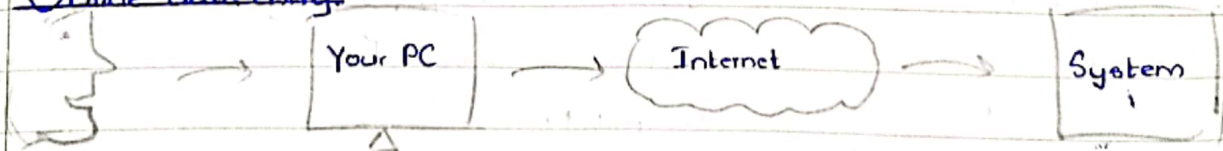
* Direct data entry

- Data is entered into a system directly through sensors.

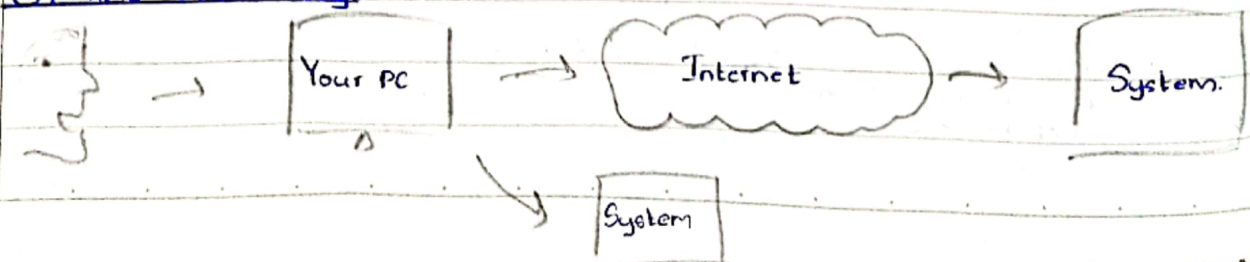
* Remote entry

- Entering data from a remote location & transfer to the system via networks.

• Online data entry.



• Offline data entry.



Output Methods.

Hard Copy

Soft Copy.

Getting/Storing a physical output in the form of a printout.

Present or Store in the form of a file, through monitor, projector... etc...

Storage methods.

Local

Remote.

HDD, Pen drives, SSD, CD, DVD
Memory cards ... etc.

Cloud storage
Ex:- Google drive, icloud.