

Business Applications

DEFINATIONS

- 1) **Business:**
A persons regular occupation or commercial activity a person's concern.
- 2) **Application:**
In terms of computers, i.e. a computer program to fulfill a particular purpose.
- 3) **Business Application:**
A computer program used to fulfill a person's need for regular occupation or commercial activity.

TYPES OF BUSINESS APPLICATIONS

1) Application based on nature of processing

Batch Processing:

All the collected data is processed in one go generally at the end of the working day.
Used in producing bills, stock control, monthly card statement, etc.

Online Processing:

Data is processed immediately while it is entered. User only has to wait for a short time for a response. It requires user to supply an input.

Real-time Processing:

Real time processing is a subset of interactive or online processing. Input is continuously, automatically acquired from sensors.

Used in warning systems on aircraft, alarm systems in hazards zones, burglar alarms, etc.

2) Applications based on source of application

Custom-built Application:

To meet a particular company's requirements. It involves additional coding by the user.
E.g. Billing etc.

Packaged Software:

Standard applications which are not free but are licensed. E.g. Tally.

Leased Application:

User pays rent for using the app for agreed terms. E.g. Payment Gateway.

3) Applications based on size & complexity of business

Small & Medium Enterprise (SME) Business:

The best software for small & medium businesses is software designed to help them to run their operations better, cut costs & replace paper processes. E.g. Tally, MsOffice.

Large Business:

When it comes to other sorts of business software, designed for the larger or more ambitions businesses, a business application like CRM. E.g. Human resources software, Business intelligence.

4) Business applications based on nature of application

Accounting Applications:

For day to day transactions of accounting & general functional info such as Balance Sheet, P & L A/c. E.g. Tally, ERP.

Office Management Software:

Help entities to manage their office requirements like word processing (Ms-Word), electronic spread sheets (Ms-Excel), presentation software (Powerpoint) file sharing system etc.

Compliance Applications:

Help enterprise to comply with applicable laws. E.g. E-filing documents, E-payments taxes, etc.

Customer Relationship Management Software:

These are specialized applications catering to the need of organisation largely in FMCG (Fast Moving Consumer Goods) categories.

Management Support Software:

These are applications catering to decision-making needs of the management. E.g. Management information system used by middle level.

ERP Software:

Manage resources optimally to maximize the 3 E's (i.e. Economy, Efficiency & Effectiveness) of business operation.

Product Life Cycle Management Software:

Used by enterprises that launch new products & are involved in development of new products.

Logistics Management Software:

These companies need to keep track of products and people across the globe to check whether there are any discrepancies that need action. E.g. DHL (Courier Co.)

Legal Management Software:

Digitalize the legal system. Used by big legal firms.

Industry Specific Applications:

These are industry specific applications focused on a specific industry sector (i.e. produces a customized app for an organisation). E.g. Insurance Co., Medical field.

BUSINESS PROCESS AUTOMATION (BPA)

Need of BPA

Cost saving:

Automation leads to saving in time & labour costs.

To remain competitive:

Fast service to customers.

APPLICATIONS THAT HELP ENTITY TO ACHIEVE BPA

Tally:

The latest version has been upgraded to help user achieve tax compliances also.

SAP:

Aim at better utilization of the resources & helps entity to achieve better business performance. It has features like reporting & analytics, budget monitoring, leave management, etc.

Ms-Office Applications:

Helps to achieve automation of various tasks. It has features like built-in graphics tool sets (clipart), pivot (tables) for excel, powerpoint broadcast, paste, etc.

Attendance systems:

Helps to automate the process of attendance tracking & report generation.

Vehicle tracking system:

It has features like GPS based location, GPRS connection based real-time online data logging & reporting, route accuracy on the fly while device is moving.

Automated toll collection systems:

Allow user to swipe/wave the card where user need not stop in lane to pay toll. The system keeps the track of card & the no. of time same has been swiped/waved.

Department stores system:

Two important processes are automated i.e. billing processes & inventory management.

Travel Management Systems:

Features like streamlined foreign travel approval process, etc.

Educational institute management systems:

Student tracking & record keeping. E.g. ICAI keeps record of all students.

File management system:

Inventory of office files & records, etc. allows to kept in soft copy & easy tracking of the same.

Other systems:

Banking systems, railway reservations, stock exchange etc. good e.g. of BPA achieved.

INFORMATION PROCESSING

Data $\xrightarrow{\text{Process}}$ Information

Computer is used to process data into information.

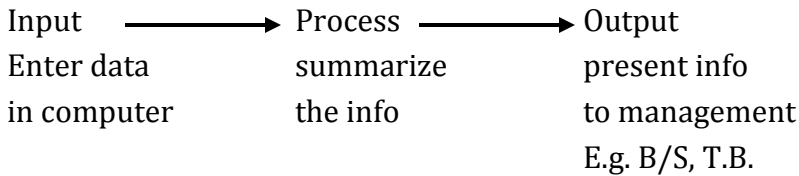
Definition: The effort to create information from raw data is known as information processing.

Classification of information is based on level of human/computer intervention, which is given as follows:

i) Manual information processing cycle:

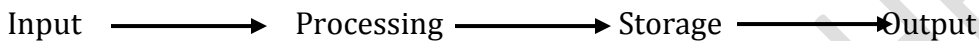
Here level of manual intervention is very high. E.g. Valuation of exam papers, teaching etc.

Components of manual information processing cycle include:



ii) Computerized information processing cycle:

In this system are used at every stage of transaction processing.



DELIVERY CHANNELS

Mode through which info or products are delivered to users:

For information

Intranet

E-mail

Internal newsletters & magazines, meeting etc. face-to-face communications methods.

Notice Boards in communal areas.

Manuals, guides & other printer resources.

Hand-held devices. E.g. Cell phones, PDA's

Social networking sites:

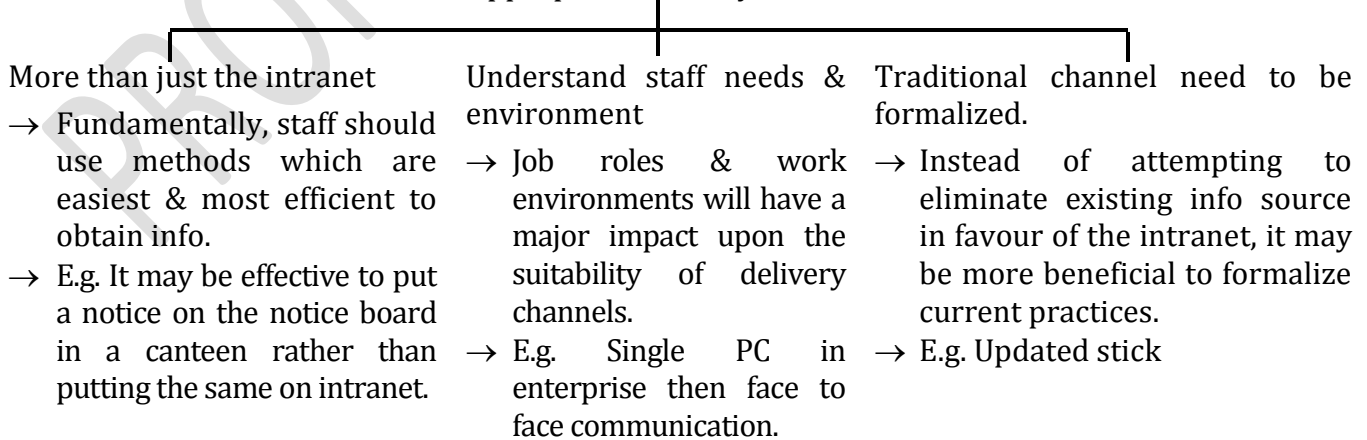
For products

Brick and mortar type (Trolley)

Buying from shop/departmental stores/online & making

Home delivery

Points to be considered to choose appropriate delivery channel:



CONTROLS IN BPA

Definition of Control policies, procedures, practices & organisation structure that are designed to provide reasonable assurance that the business objectives are achieved & undesired events are prevented or detected & corrected.

Control Objectives (ACP SEVA)

Authorisation	Completeness	Accuracy	Validity	Physical	Error handling	Segregation of duties
Ensures that all transactions are approved by authorized person before recorded.	No valid transaction is omitted.	Consistent with the originating transaction data.	Recorded transactions fairly represents economic events actually recorded.	Safeguard & security properly restricted to authorized personnel.	Errors detected prompts corrective action.	No individual can control both the recording & procedures relative to processing a transaction.

TYPES OF CONTROLS

A] Internal Controls

- All transactions are executed in accordance with management’s general authorisation.
- All transactions are promptly recorded in the correct amount in the appropriate accounts, period.
- Assets are safeguarded from unauthorized access.
- Recorded assets are compared with the existing assets at reasonable intervals.

B] Managerial Controls

i) Application Controls:

- Controls on the sequence of processing events.
- These are those controls, which are implemented in an application to prevent or detect & correct errors.

Application controls & their types:

- i) Boundary Controls
- ii) Input Controls
- iii) Process Controls
- iv) Output Controls

i) Boundary Controls:

Ensures that authorized person can only access the system. It includes

- i) Cryptography
- ii) Password: with personal character can be used.
- iii) PIN: assigned to user by an institution based user chart. & encrypted by using cryptography.
- iv) Identification card: used to store info required in an authentication process.

ii) Input Controls:

To detect internal error & fraud.

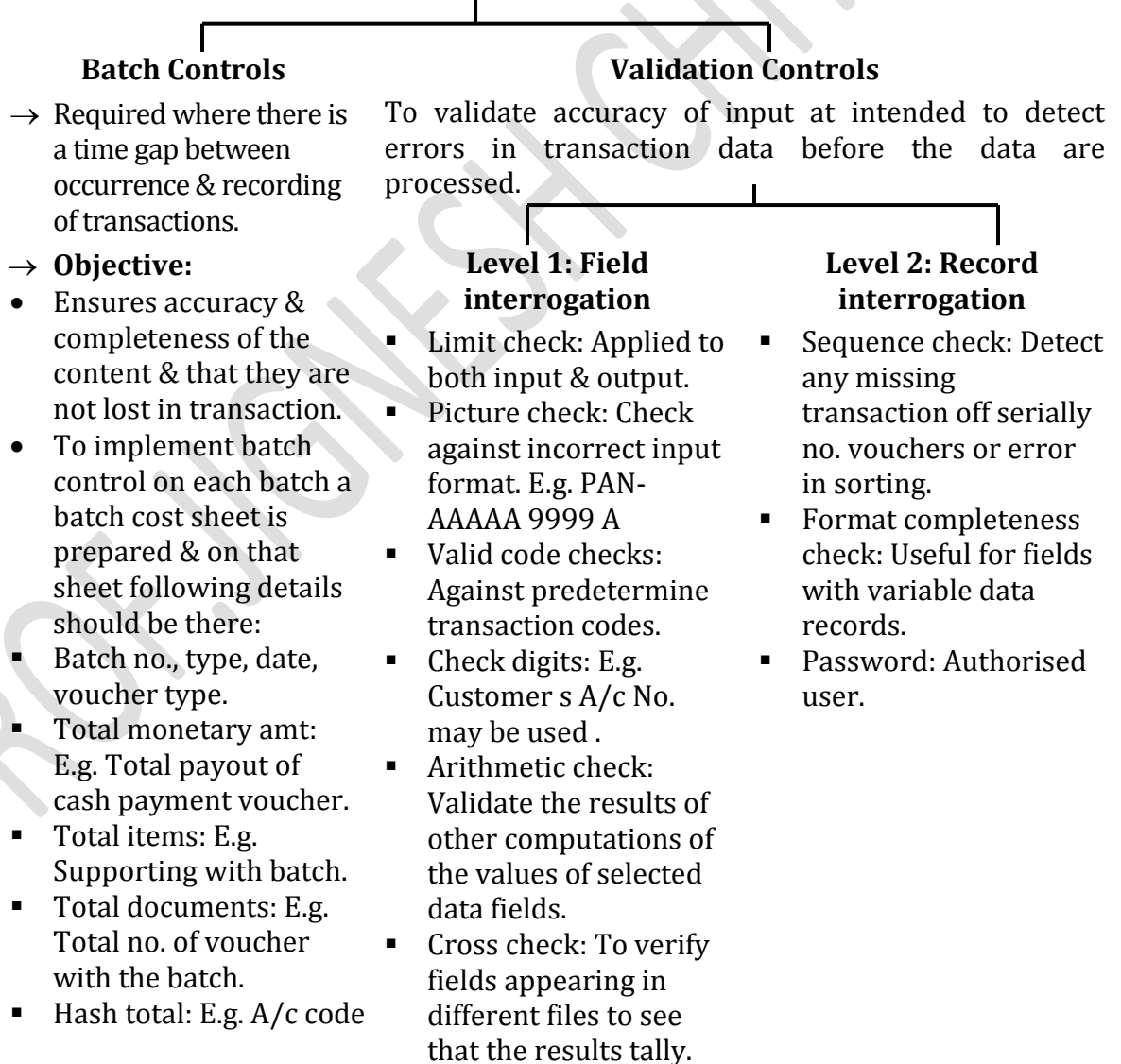
Techniques:

- a) Source document control: Important source documents to initiate transactions. Careful control is required. E.g. Receipts.
- b) Data coding controls: Reduce user error during data feeding. (It is a mistake).

Few types of error

- A] Addition
- B] Truncation
- C] Transcription
- D] Transposition
- E] Double transposition

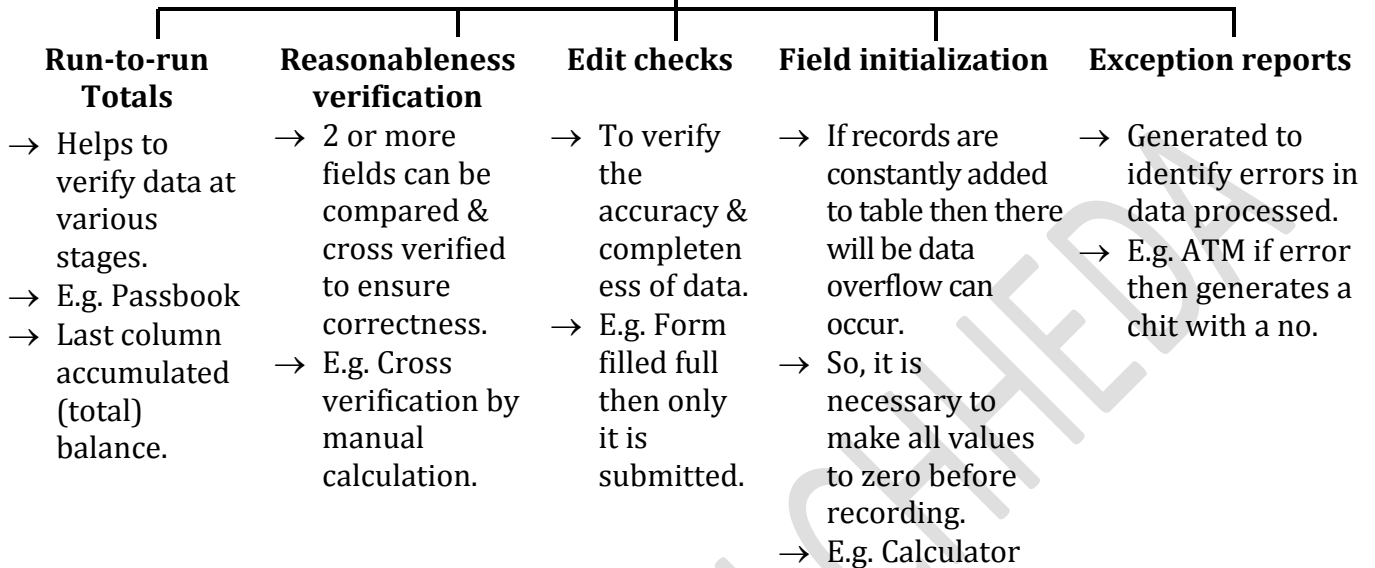
Various Input Controls



iii) Process Controls:

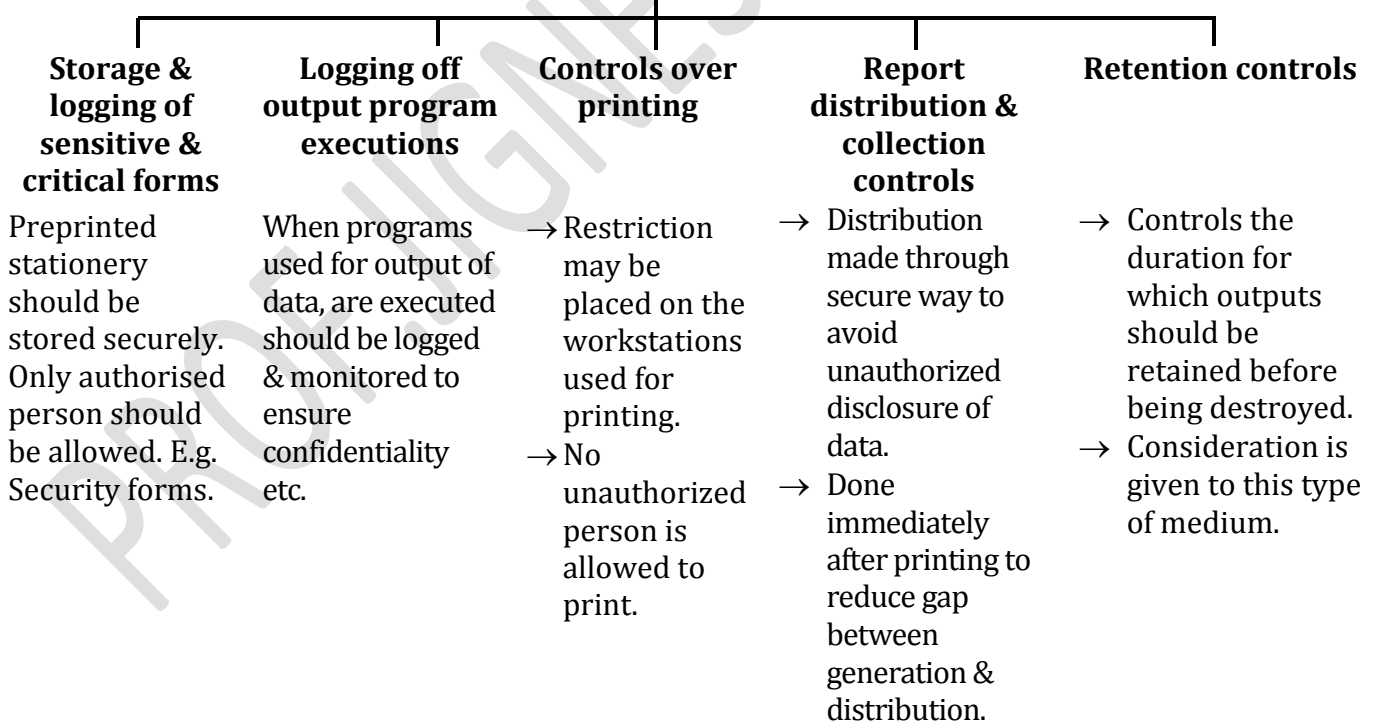
Perform validation checks to identify errors during processing of data.

Required to ensure both the completeness & accuracy of the data being processed.



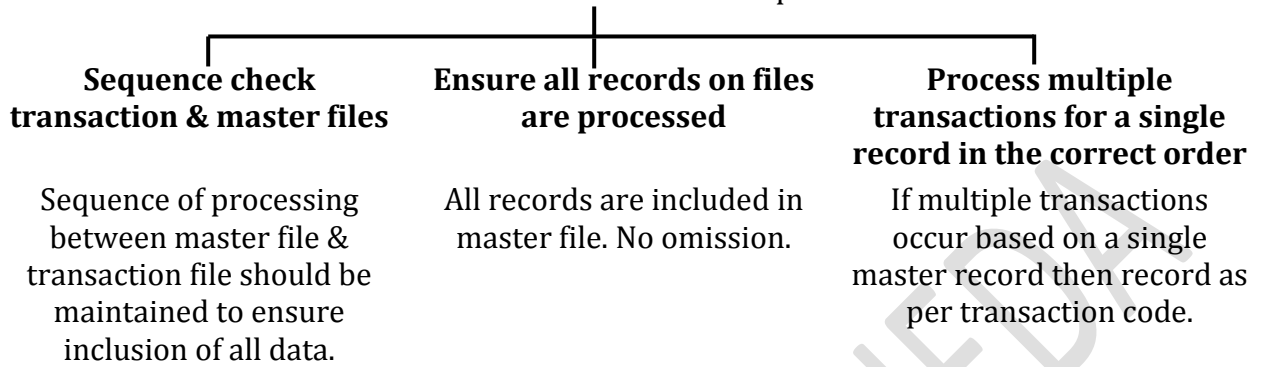
iv) Output Controls:

Ensures that the data desired to users will be presented, formatted & delivered in a consistent & secured manner.



v) Database Controls:

Protecting the integrity of a database when application software acts as an interface to interact between the user & the database are called the update controls.



B] Managerial Controls

Performed to ensure the development, implementation, operation & maintenance of information systems.

Information system can be built, operated & maintained on a day to day basis.

Types of managerial functions based control/Types of management subsystem:

(i) Top management and information system management controls:

Major functions that a senior manager must perform.

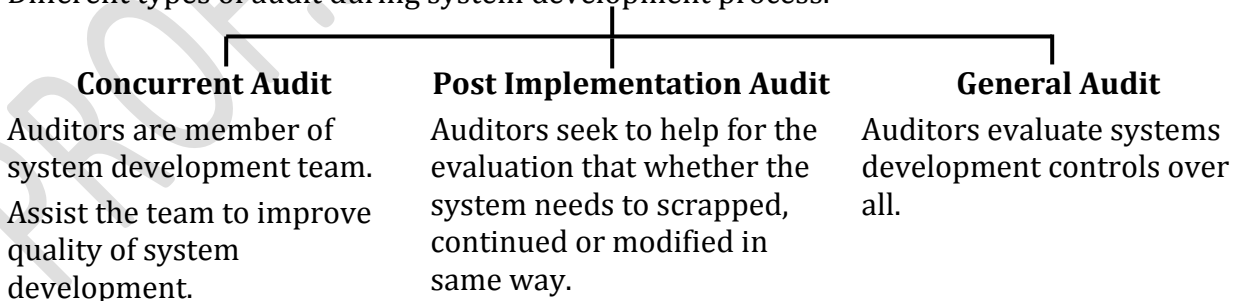
- Planning: Determining the goods info systems.
- Organizing: Gathering, allocating & coordinating the resources.
- Leading (Directing): Motivating, guiding & communicating with personnel.
- Controlling: Comparing actual performance with planned performance.

Top management must ensure that the info system function is well managed.

(ii) Systems Development Management Controls

Has a responsibility for the functions concerned with analyzing, designing, building, implementing & maintaining information systems.

Different types of audit during system development process.

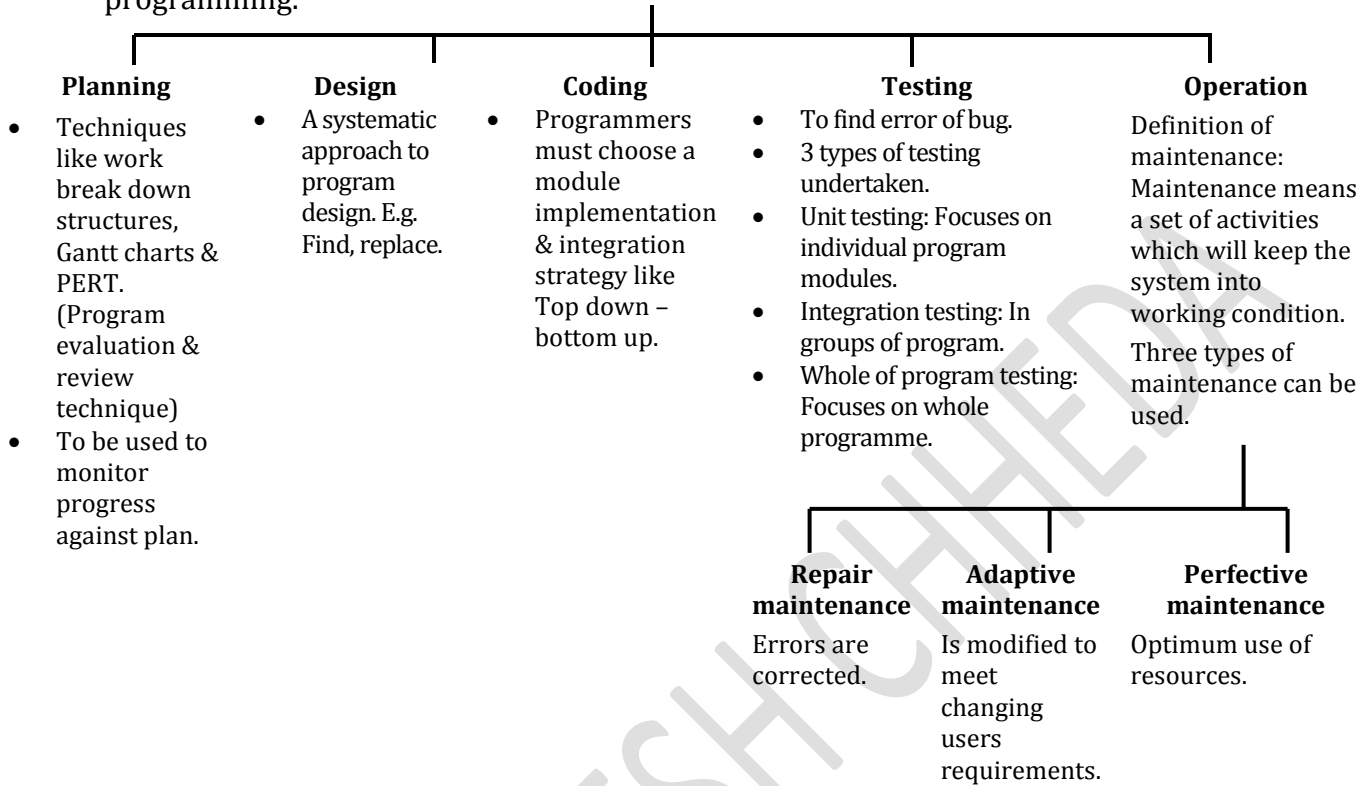


(iii) Programming Management Controls

Program development & implementation is a major phase within the systems development life cycle.

The primary objectives of this phase are to produce or acquire & to implement high quality programs.

Phases of program development life cycle. These are different tools to repress schedules for programming.



(iv) Data Resource Management Controls

Data is a critical resource.

Careful control should be exercised over the roles by appointing senior, trustworthy persons, separating duties to the extent possible & maintaining & monitoring logs of the data administrator’s & database administrator’s activities.

(v) Quality Assurance Management Controls

Organisations are increasingly producing safety critical systems & users are becoming more demanding in terms of quality of the software they employ to undertake their work.

(vi) Security Management Controls

Responsible for ensuring that information systems assets are secure.

Major threats & their control measures

Fire	Water	Energy	Structural damage	Pollution	Unauthorized intrusion	Viruses & worms	Misuse of software	Hacker
Fire protection system. E.g. Fire alarm, extinguisher	E.g. Water detectors	Variation voltage regulator	Designed to withstand structural damage	Cleaning of facilities. E.g. Dust	Physical access control. E.g. CC TV Camera, Door locks	E.g. Anti-virus, close security loophole	Data & services code of conduct.	Strong logical access control. E.g. Fire wall

(vii) Operations Management Controls

Operations management control must continuously monitor the performance of the hardware/software platform to ensure that systems are executing efficiently, an acceptable response time is being achieved & an acceptance level of uptime is occurring.

EMERGING TECHNOLOGIES

Virtualization

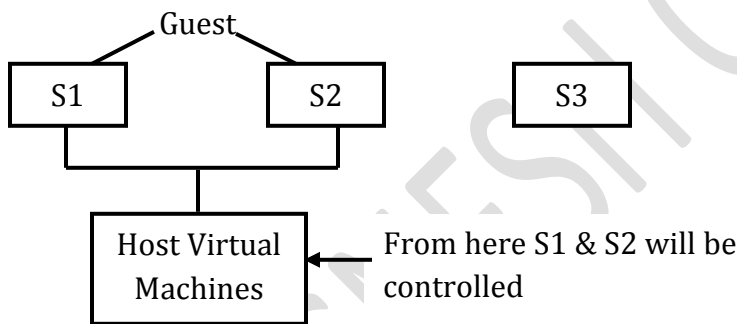
Virtualization is the process of creating logical computing resources from available physical resources.

E.g. Conversion of PDF into word. Major applications of concepts of the virtualization are given as follows:

Server Consolidation

Consolidate many physical servers into fewer servers which in turn 'host virtual machines'. Each physical server is reflected as "guest" residing on a virtual machine host system.

This is known as "physical-to-virtual" or P2V.



Disaster Recovery

Virtual machines can be used as "hot stand by" (2nd ary server) environments for physical production servers.

Providing backup images that can "boot" into live virtual machines capable of taking over work load for a production server. E.g. Failure of server of facebook.

Testing & Training

Hardware, virtualization can give root access to a virtual machine. Useful such as in kernel (Base of operating system) development & operating system courses.

Portable Applications

Virtualization can be used to encapsulate the application with a redirection layer that stores temporary files, windows registry entries & other state information. E.g. Pendrive. You can carry application through pendrive.

Portable Workspaces:

On devices like ipods & USB memory sticks. E.g. Windows 7 to 8.

GRID COMPUTING

It is a computer network in which each computers resources are shared with every other computer in the system.

Why need Grid Computing

- Civil engineer collaborate to design execute & analyze shake table experiments (earthquake analysis project)
- An insurance company mines data from partner hospitals for fraud detection.
- Off loads excess load to a computer cycle provider.
- An enterprise configure internal & external resources to support e-business workload.
- Large scale science & engineering are done through the interaction of people, heterogeneous computing resources, etc.

CLOUD COMPUTING

Means the use of various services, such as software development platforms, servers, storage & software over the internet.

Closely related to virtualization.

Vendors being able to pool resources that may be divided among multiple clients.

Characteristics of Cloud Computing

1) Elasticity & Scalability:

Cloud computing gives us the ability to expand & reduce resources according to the specific service requirement.

2) Pay per use:

As we use we pay for either short term or for long term like (vault services) it is a variable cost.

3) On demand:

When we need cloud services they need not be permanent parts of our IT structure. No need to have dedicated resources to use. E.g. E-main attachment load online.

4) Rasiliency:

No effect on stored resources from cloud uses due to failure of server. Work is migrated to a different physical server.

5) Multitenancy:

Public cloud service providers often can host the cloud services for multiple users within the same infrastructure.

6) Workload movement:

Related to Rasiliency & cost considerations. Its providers migrate workloads access servers both inside the data center & across data cartors.

Advantages of Cloud Computing

- 1) Cost efficient: No need to maintain, upgrade.
- 2) Almost unlimited storage.
- 3) Backup & recovery: Easier than storing same on a physical device.
- 4) Automatic software integration: Software integration is usually something that occurs automatically. It allows us to customize the options with great ease.
- 5) Easy access to information: From anywhere.
- 6) Quick deployment: Quick access to information by using latest technology.

Disadvantages of Cloud Computing

- 1) Technical issues: Problem on network connectivity.
- 2) Security in the cloud: Great risk.
- 3) Prone to attack: External back attacks & threats.

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