Assignment : **Information system and data processing**

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Information system and data processing

Q 1)Define organization; also explain the structure of organization by giving an example of well known organization.

Ans:- **Organization:-** an organized group of people with a particular purpose, such as a business or government department.

Structure of organization:-

1)Hierarchical Structure:-

The hierarchical model is the most popular organizational structure. There are a few models that are derived from this structure. In a hierarchical organization structure, **employees are grouped with every employee having one clear**

supervisor. The grouping is done based on a few factors, hence many models derived from this.

2)Matrix structure:-

In a Matrix organizational structure, the reporting relationships are set up as a grid, or matrix, rather than in the traditional hierarchy. It is a type of organizational management in which people with similar skills are pooled for work assignments, resulting in more than one manager to report to (sometimes referred to as solid line and dotted line reports, in reference to traditional business organization charts).

For example:- all engineers may be in one engineering department and report to an engineering manager. But these same engineers may be assigned to different projects and might be reporting to those project managers as well. Therefore some engineers might have to work with multiple managers in their job role.

3)Horizontal structure:-

This is an organizational structure mostly adopted by small companies and start-ups in their early stage. It's almost impossible to use this model for larger companies with many projects and employees.

This works well for small companies because work and effort in a small company are relatively transparent. This does not mean that employees don't have superiors and people to report. Just that decision making power is shared and employees are held accountable for their decisions.

4)Network structure:-

Network organizational structure helps visualize both internal and external relationships between managers and top-level management. They are not only less hierarchical but are also more decentralized and more flexible than other structures. Using a Network organizational structure is sometimes a disadvantage because of its complexity. The below example of network org chart shows the rapid communication between entities.

5) Divisional structure:-

Within a divisional structure, each organizational function has its own division which corresponds to either products or geographies. Each division contains the necessary resources and functions needed to support the product line and geography. Another form of divisional org chart structure is the multi-divisional structure. The main advantage of the divisional structure is the independent operational flow, that failure of one company does not threaten the existence of the others. There are some other organizational structure also available but we discuss the above

Example of organization:-
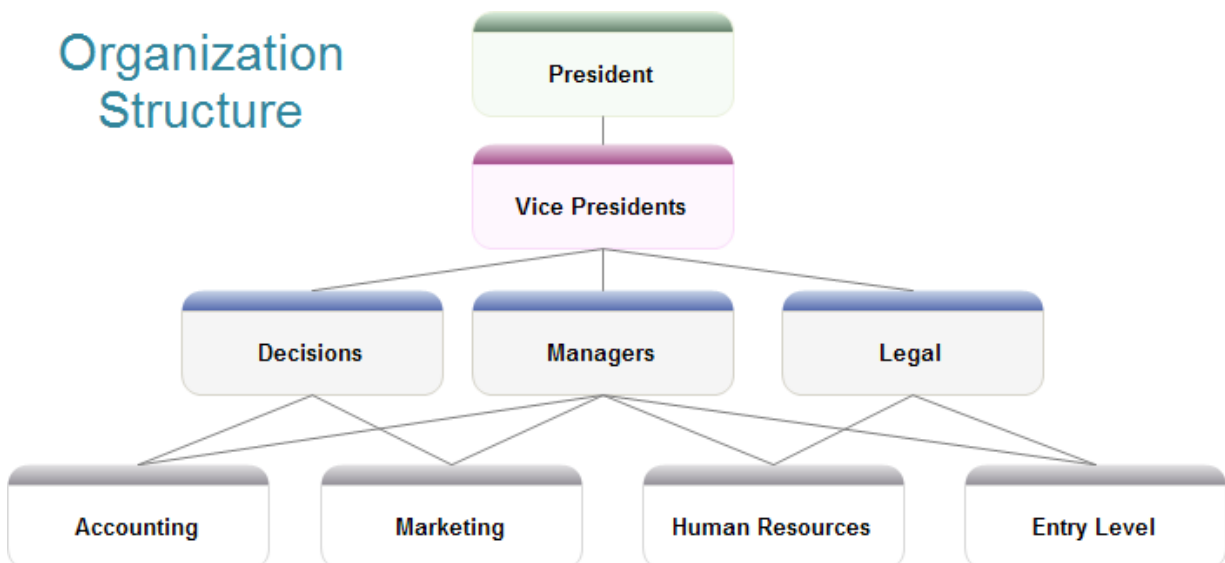
Employees of Twitter can't stop raving about the company's culture. Rooftop meetings, friendly coworkers and a team-oriented environment in which each person is motivated by the company's goals have inspired that praise.

Employees of Twitter can also expect free meals at the San Francisco headquarters, along with yoga classes and unlimited vacations for some. These and many other perks are not unheard of in the startup world. But what sets Twitter apart?

Employees can't stop talking about how they love working with other smart people. Workers rave about being part of a company that is doing something that matters in the world, and there is a sense that no one leaves until the work gets done.

Q 2:-Explain system development life cycle ,also explain different life cycle?

Ans:-**System development life cycle:-** The system development life cycle is a project management model that defines the stages involved in bringing a project from inception to completion.

Explain: Systems development life cycle phases include planning, system analysis, system design, development, implementation, integration and testing, and operations and maintenance.

Iteration in system development cycle:- Iteration is what is system development life cycle's greatest advantage, enabling faster development of systems by moving ahead with development without requiring full specifications upfront. Additional specifications can be introduced as the development process is repeated, producing new versions of the system at the end of each iteration.

➔System Development Life Cycle (SDLC) is a series of six main phases to create a hardware system only, a software system only or a combination of both to meet or exceed customer's expectations.

System Development Life Cycle Phases:
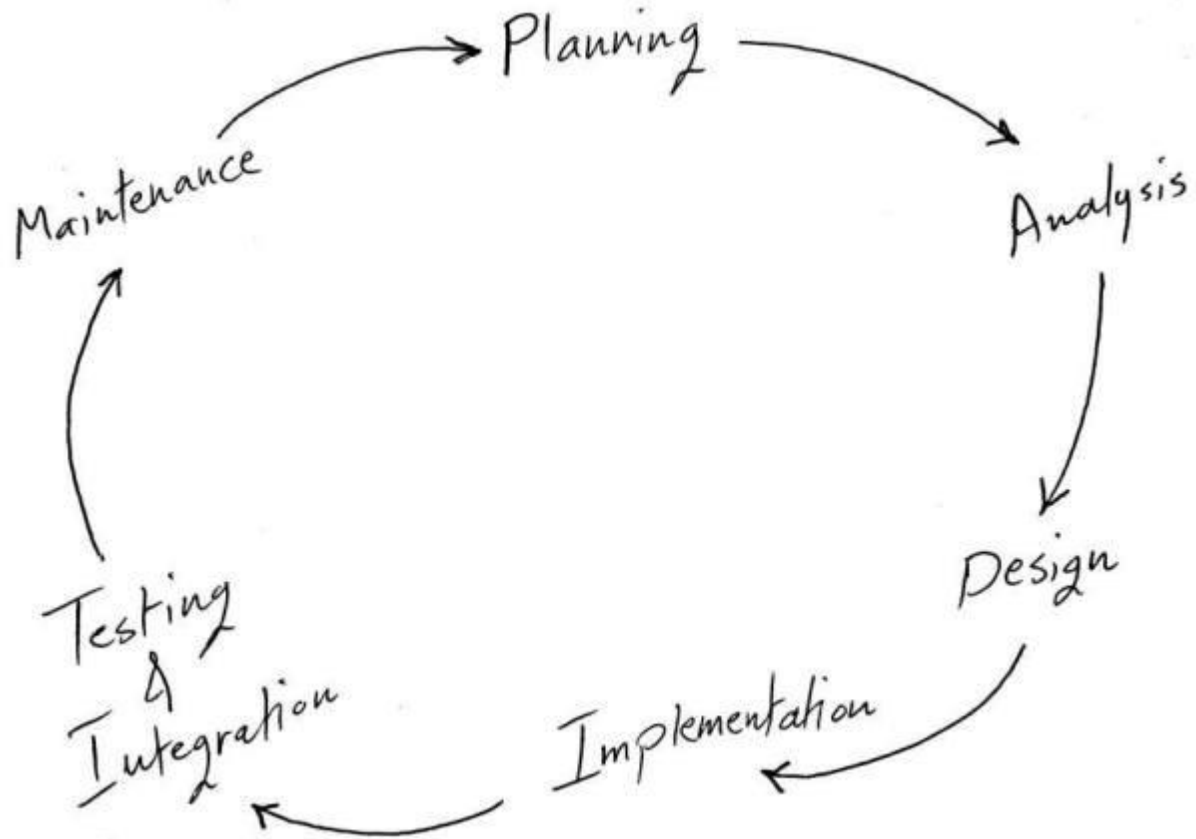
Different types of SDLC:-

1)planning:-

The purpose of the first phase is to find out scope of the problem and determine the solution. Resource, cost, time, benefits, and other item should be considered here.

2)System analysis and requirements:-

The second phase is where businesses will work on the source of their problem or the need for a change. In the event of a problem, possible solutions are submitted and analyzed to identify the best fit for the ultimate goal(s) of the project

3)system design:-

The third phase describes, in detail, the necessary specifications, features and operations that will satisfy the functional requirements of the proposed system

which will be in place. This is the step for end users to discuss and determine their specific business information needs for the proposed system.

4)Development:-

The fourth phase is when the real work begins—in particular, when a programmer, network engineer and/or database developer are brought on to do the major work on the project. This work includes using a flow chart to ensure that the process of the system is properly organized.

5)Testing:-

he fifth phase involves systems integration and system testing (of programs and procedures)—normally carried out by a Quality Assurance professional to determine if the proposed design meets the initial set of business goals. Testing may be repeated, specifically to check for errors, bugs and interoperability.

6)Implementation:-

The sixth phase is when the majority of the code for the program is written. Additionally, this phase involves the actual installation of the newly-developed system.

7) Maintenance

The seventh and final phase involves maintenance and regular required updates. This step is when end users can fine-tune the system, if they wish, to boost performance, add new capabilities or meet additional user requirements.

Q 03:-Explain incremental model and spiral model also explain main different between spiral and incremental model.

Ans:-**Incremental model**:- Incremental Model is a process of software development where requirements are broken down into multiple standalone modules of software development cycle. Incremental development is done in steps from analysis design, implementation, testing/verification, maintenance. Each iteration passes through the **requirements, design, coding and testing**

phases. And each subsequent release of the system adds function to the previous release until all designed functionality has been implemented.

Spiral model:-

The spiral model is a systems development lifecycle (SDLC) method used for risk management that combines the iterative development process model with elements of the waterfall model. The spiral model is used by software engineers and is favored for large, expensive and complicated projects. The spiral model looks like a coil with many loops. The number of loops varies based on each project and is often designated by the project manager. Each loop of the spiral is a phase in the software development process.

Difference between incremental and spiral model:-

A iterative model is a way to describe a SDLC as a sequence of consecutive steps.

A spiral model is a way to implement a iterative model, where each iteration follows a waterfall-like model. With each iteration, the product is updated, more features are added etc.

More difference can be easily find from the following diagram:

Properties of Model	Iterative/Incremental Model	Spiral Model
1. Planning in early stage	Yes	Yes
2. Returning to an earlier phase	Yes	Yes
3. Handle Large Project	Not Appropriate	Appropriate
4. Detailed Documentation	Not much	Yes
5. Cost	Low	Expensive
6. Requirement Specifications	Beginning	Beginning
7. User Involvement	Intermediate	High
8. Risk Involvement	Low	Medium-High
9. Testing	After every iteration	At the end of the engineering phase
10. Overlapping Phases	Yes(Parallel development exists)	No
11. Objective	Rapid development	High Assurance
12. Team size	Moderate size tea,	Large team

THE END

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