

Programmed Name: **BCS**

Course Code: **CSC 1013**

Course Name: **System Analysis and Design**

Assignment: **Second**

Date**: 4/4/2020**

**Submitted By: Submitted To:**

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Section: **A**

Semester: **second**

Intake:**2019 September**

1. **Why do system analyst need to know who the stakeholders are in the organizations**?

= The systems analysts need to know who the stakeholders are in the organization because the system analyst servers as a facilitator or a couch, bridging the communications gap that an naturally develop between the nontechnical system owners and users and technical system designers and buildings. As we can see the system analyst plays a key role in bringing all these users to understand, therefore the system analyst need to know each and every one of the stakeholders to characterize how he or she will approach each stakeholder.

1. **Define system development methodology.**

= A system development methodology refers to the steps that are used to form, plan, and control the process of developing an information system since it is virtually impossible to drive forward a project to computerize method without prior work. A wide variety of such frameworks have evolved over the years, each with its own recognized strengths and weaknesses.

1. **what kind of knowledge and skills should a system analyst posses.**

=The knowledge and skills that a system analyst should posses are given below:

* **Analytical**

At the beginning of a project, a systems analyst has to understand the requirements of the client and study the various ways in which the requirements can be met. Once the various ways are found out, the onus is on the systems analyst to thoroughly analyze the pros and cons of every solution before deciding on a best feasible solution. The system analyst also has to analyze the ways and means of applying a solution which has been zeroed upon.

* **Efficient Planning and Execution**

A systems analyst is expected to have a keen eye for detail and has to plan the various stages in which the project has to be executed. He/she has to come up with a skeleton plan of how the product would look like and has to chalk out the deliverables. After defining the plan, he/she has to ensure that all the details of the plan are adhered to and the different stages are executed perfectly.

* **Technical Knowledge**

A systems analyst must have sample technical skills because they have to help the technical team design a product which is to suit the customer’s needs. He/She must have a working knowledge of the prevalent operating systems, programming languages and hardware platforms. A systems analyst is expected to help in coding and debugging of a customized product. Further, he/she should also be able to tweak up the initial design based on the customer’s feedback. The systems analyst is expected to constantly help in redesigning till the end product has been delivered to the client and has got the approval.

* **Man Management**

Any systems analyst has to have great interpersonal skills and the ability to manage people. He/she has to coordinate with the different technical teams and get the product customized as per requirement delivered within the deadline agreed upon. The systems analyst should ensure that no feathers have been ruffled and the whole team functions smoothly.

1. **what are the difference between internal user and external user? Give example**

**=**The difference between Internal User anf External User is given below:

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| --- | --- |
| **Internal User** | **External User** |
| * Internal users refer to the members of a company's management and other individuals who use financial information in running and managing the business. | * External users are entities or individuals who do not participate in running or managing the business but are interested in the financial information of the company |
| * Internal users are owners, directors, managers, employees of the company. | * External users are creditors, investors, government, trading partners, regulatory agencies, international standardization agencies, journalists. |
| * Internal users are that individual who runs, manages and operates the daily activities of the inside area of an organization. | * External users are those individuals who take interest in the account information of an organization but they are not part of the organization’s administrative process. |
| * Internal users are people within a business organization who use financial information | * External users are people outside the business entity (organization) who use accounting information. |
| * **Examples of internal users** are owners, managers, and employees. | * **Examples of external users** are suppliers, banks, customers, investors, potential investors, and tax authorities |

1. **Explain THREE(3) elements involve in designing a system.**

=The Elements involve in designing a system are:

* **Outputs and Inputs**

A major objective of a system is to produce an output that has value to its user. Whatever the nature of the output (goods, services, or information), it must be in line with the expectations of the intended user. Inputs are the elements (material, human resources, and information) that enter the system for processing. Output is the outcome of processing. A system feeds on input to produce output in much the same way that a business brings in human, financial, and material resources to produce goods and services. It is important to point out here that determining the output is a first step in specifying the nature, amount, and regularity of the input needed to operate a system. For example, in systems analysis, the first concern is to determine the user’s requirements of a proposed computer system – that is, specification of the output that the computer is expected to provide for meeting user requirements.

* **Processors**

The processor is the element of a system that involves the actual transformation of input into output. It is the operational component of a system. Processors may modify the input totally or partially, depending on the specifications of the output. This means that as the output specifications change so does the processing. In some cases, input is also modified to enable the processor to handle the transformation.

* **Control**

The control element guides the system. It is the decision – making subsystem that controls the pattern of activities governing input, processing, and output. In an organizational context, management as a decision – making body controls the inflow, handling and outflow of activities that affect the welfare of the business. In a computer system, the operating system and accompanying software influence the behaviour of the system. Output specifications determine what and how much input is needed to keep the system in balance. In systems analysis, knowing the attitudes of the individual who controls the area for which a computer is being considered can make a difference between the success and failure of the installation. Management support is required for securing control and supporting the objective of the proposed change.

1. **Differentiate between data and information**

=The differentiate between data and information is given below:

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|  | **Data** | **Information** |
| Definition | Data is raw, unorganized facts that need to be processed. Data can be something simple and seemingly random and useless until it is organized | When data is processed, organized, structured or presented in a given context so as to make it useful, it is called information. |
| Format | Data is in the form of numbers, letters, or a set of characters. | Ideas and inferences. |
| **Represented in** | It can be structured, tabular data, graph, data tree, etc. | Language, ideas, and thoughts based on the given data. |
| Meaning | Data does not have any specific purpose. | It carries meaning that has been assigned by interpreting data. |
| Features | Data is a single unit and is raw. It alone doesn't have any meaning. | Information is the product and group of data which jointly carry a logical meaning. |
| **Dependence** | It never depends on Information. | It depended on Data. |
| Example | Each student's test score is one piece of data. | The average score of a class or of the entire school is information that can be derived from the given data. |

1. **Define an Information System**.

=Information systems (IS) is the study of complementary networks of hardware and software that people and organizations use to collect, filter, process, create, and distribute data. Information systems are interrelated components working together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and visualization in an organization.

1. **There are several different types of information system. List and briefly explain all types of information system with an example.**

=The list of all types of information system with an example is given below:

* **Transaction processing system**
* **Decision support system**
* **executive information system**
* **Management information system**
* **Workflow system**
* **Enterprise resource planning and Expert systems.**
* **Transaction Processing Systems (TPS)**

A **Transaction Processing Systems (TPS)** is used primarily for record keeping which is required in any organization to conduct the business. Examples of TPS are sales order entry, payroll, and shipping records etc. TPS is used for periodic report generation in a scheduled manner. TPS is also used for producing reports on demand as well as exception reports**. For example**, if a store sells items on credit and they have a credit policy that has some set limit on the borrowing. All the sales person needs to decide whether to give credit to a customer or not is based on the current credit information from the system.

* **Decision Support System (DSS)**

**Decision Support System (DSS)** serves the management of an organization. A decision support system has sophisticated data analysis tools, which support and assist all aspects of problem-specific decision-making. DSS may use data from external sources such as current stock prices to enhance decision-making. DSS is used when the problem is complex and the information needed to make the best decision is difficult to obtain and use. DSS is developed with the help of decision-makers in an organization. DSS helps in the appropriate decision-making process and does not make any decision. **Examples** of decision support systems include Financial Planning System, Bank Loan Management System.

* **Executive Information System (EIS)**

An **Executive Information System (EIS)** is also called the Executive Support System. Senior managers of an organization use the EIS. Therefore, it must be easy to use so that executives can use it without any assistance. EIS can do trend analysis, exception reporting and have drill-down capabilities. The results are usually presented in a graphical form tailored to the executive’s information needs. EIS has on-line analysis tools and they access a broad range of internal and external data.

* **Management Information Systems (MIS)**

**Management Information System (MIS)** provides the management routine summary of basic operations of the organization. The essential services are recorded by the TPS of the organization and MIS consolidates the data on sales, production etc. MIS provides routine information to managers and decision makers. The primary objective behind installing an MIS in the organization is to increase operational efficiency. MIS may support marketing, production, finance, etc. **For example**, input from a point of sale system can be used to analyze trends of products that are performing well and those that are not performing well. This information can be used to make future inventory orders i.e. increasing orders for well-performing products and reduce the orders of products that are not performing well.

* **Workflow System**

A **workflow system** is a rule-based management system that directs, coordinates and monitors the execution of an interrelated set of tasks arranged to form a business process. There are three types of workflow software. They are:

* Administrative workflow systems focus on the tracking of expense reports, travel requests, messages.
* An Ad-hoc workflow system deals with the shaping of product, sales proposals and strategic plans.
* Production workflow systems are concerned with mortgage loans and insurance claims.

A workflow system may be Internet-based and may be combined with e-mail. A workflow system may be based on server architecture that may use a database or file server. Example of Workflow System Are Employee Onboarding, New Client Setup, Product Return Authorizations, Documentation Requests etc.

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* **Enterprise Resource Planning (ERP)**

**Enterprise Resource Planning (ERP) system** is a business process management software that allows an organization to use a system of integrated programs capable of managing a company’s vital business operations for an entire multi-site, global organization. Supply chain management and customer relationship management systems are each **examples** of enterprise resourcesystems.

* **Expert Systems**

The **expert systems** have the ability to make suggestions and act like an expert in a particular field of an organization. An expert system has an extensive knowledge base. **MYCIN, DENDRAL, R1/XCON, PXDES etc are some example of Expert System.**

1. **Assume you are a system analyst who will be conducting a requirements analysis for an individually owned brick-and-mortar retails store with a point-of-sale(POS) system. Identify the typical internal and external user might include**.

=If I was a system Analyst who will be conducting a requirements analysis for an individually owned brick-and-mortar retails store with a POS system, the typical internal user may be **directors, owners, managers, and employees** whereas external users may be **creditors, investors, government, trading partners, regulatory agencies, suppliers, banks, customers, and tax authorities.**

1. **Assume you are a system analyst for a consulting company and have been asked to assist the chief executive officer(CEO) of a regional bank. the bank recently implemented a plan to reduce the number of staff, including loan officers, as a strategy to maintain profitability, subsequently, the bank experienced chronic problems with backlogged loan officers who are able to review and approve or disapprove loans. The CEO of the bank is interested in solutions that would allow the approval process to move faster without increasing the number of loan officer and has engaged your company to come up with suggestions. What is one type of system that you might recommended to the bank?**

=I will recommend **Decision Support System** to the Bankbecause itsupports business or organizational decision-making activities. Decision support systems increase interaction between the manager and computer systems, and thus there won’t be a need for the manger to deal with decision support systems directly. Decision support systems’ characteristics are represented through: supporting the decision-making process, but not replacing it. It is organized by the middle and senior managements in the organization. It provides private data in all the aspects and areas that are related to the decision-making process.

DSSs include knowledge-based systems. A properly designed DSS is an interactive software-based system intended to help decision makers compile useful information from a combination of raw data, documents, and personal knowledge, or business models to identify and solve problems and make decision.

Examples of decision support systems include;

**Financial planning systems** – it enables managers to evaluate alternative ways of achieving goals. The objective is to find the optimal way of achieving the goal. For example, the net profit for a business is calculated using the formula Total Sales less (Cost of Goods + Expenses). A financial planning system will enable senior executives to ask what if questions and adjust the values for total sales, the cost of goods, etc. to see the effect of the decision and on the net profit and find the most optimal way.

**Bank loan management systems** – it is used to verify the credit of the loan applicant and predict the likelihood of the loan being recovered.

So, **Decision Support System** is the best system to reduce the number of staff, including loan officers, as a strategy to maintain profitability, subsequently, the bank experienced chronic problems with backlogged loan officers who are able to review and approve or disapprove loans.