Unit :- II

* Discuss various fact finding techniques?

=> The analyst does not know the working process of the user for which he is going to develop information system.

=> The analyst uses specific method for collecting data about requirements are called Fact - finding techniques. it include:- 1) Interview, 2) Questionnaire 3) Record Review 4) observation.

=> Analyst usually employs more than one of this techniques to help an accurate and investigation.

1) Interview :-

=> Analyst use the interview to collect information from individual or from groups the response are the user of the investigated system. some analyst alway prefer the interview method compare to other fact finding technique. it is not alway best to collect the data about the application because if the number of the users are very high then this process is time consuming so at that time other fact finding technique should be used.

=> This method of fact finding can be helpful for gathering information from individual who do not communicate in writing or who may not have the time to complete questionnaires.

=> It allows to analyst to discover area of misunderstanding, expections and even indication of resistance to the purposed system.

=> Interview can be structured or Unstructured.

=> Unstructured interviews uses a question and answer format when the analyst want to get the general information about the system.

=> structure interview use only standard question in either open-response or close response the answer must be in the pre design format.

Structure Interview	Unstructure Interview
Advantage :-	
1) ensure uniform working on question for an responses.	Interviewer has greater flexibility in wording question to suit response.
2) easy to administer and evaluate.	Interviewer can pursue the area that arise at the time of the interview
3) Result in shorter interview.	It may produce the information about the area where overloaded or not through at all.
4) more objective evolution of both interviewer training need.	-
5) limited interview training needed.	-
Disadvantage :-	
1) cost of preparation is high	It may waste of time of both.

2) Respond has to give the answer into required and predefined format.	while taking the Interview the biases may appear.
3) Analyst has to prepare before interviewing.	some information will be gather which is no use.
	It take extra time to collect the actual fact.

2) Questionnaries :-

The use of questionnaires allow the analyst to collect the information various aspect of the system from a large number of users. The use of standard question will lead to collect a more realiable and important data of the study system however this method does not allow the system analyst to study the expression of the user in addition the response may be limited.

=> Development of the questionnaires require in deep planning and usually more than one graph. question should be short, easy to understand, unbiase and specific.

=> Question should be follow four format :-

1) multiple choices:-

This give respond a specific set of potentially answer.
=> The format is ideal for organiser and organising once answer where are receive.

2) open ended :-

Respond must answer the question in their own word.
=> space is provided under each question for the response.

3) rating :-

This is similar to multiple choice expect that respond must rate their satisfaction

4) Rank :-

Rank requires respond to priority to their response from a high to low percentage bases.

3) Record Review :-

=> many kinds of records and reports can used by the analyst to exact the required information regarding the system and user of the system. This process is perform at the beginning of the system study.

=> Record include return policy manual, regulation and standard operating processor used by the most organization as the guide for manager and employee.

4) observation :-

=> observation allows analyst to gain information they cannot obtain by any other fact finding technique.

=> Thogh through observation analyst can secure the first hand activity process. this method is very much useful when analyst needs to actual observe that how the documents are handle, how process are carried out and whether specified steps are actually follow.

=> Experience analyst can gain lot of things from the observation sometime which is necrer to impossible collect from other fact finding techinique.

* what is DFD? Identify the symbol used for DFD with explaing how each is used.

=> DFD stand for data flow diagram.

=> A graphical tool used to described and analogies the movement of datel through a system including the process, stores of data and delay in the system.

=> DFD are the central tool and the bases from which other components are developed.

=> The transformation of data from input to output, through out process, may be describe logically and independently of the physical components are called logical DFD.

=> In constrast physical DFD show the actual implementation and the movement of the data between people, department and workstation.

=> logical DFD can be completed using only four simple symbols :-

1) data flow :-

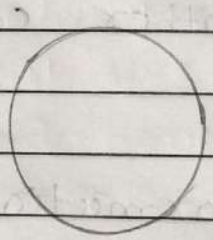
It show the direction of data flow from original to destination in the form of document, letter, telephone call etc.

=> symbol :- ⟶
(Arrow)

2) Processes :-

People, procedure or device that use or produce data.

=> symbol :-



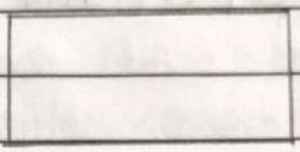
(Circle)

3) source and destination (Input and output) :-

External sources or destination of data which may be people, programs, organization or other entities interact

with the system but are outside it boundary.

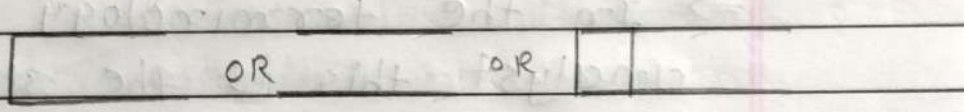
=> The term source are interchangeable used with original or destination.

=> symbol :- 

(Rectangle)

4) Data store :-

Here data are stored or reference by a process in the system.

=> symbol :- 

(open Rectangle)

=> Each component in DFD is lebaled with decriptive name.

=> process name are identify with a number s the number assigned to a specific process does not represent the sequence of the process.

=> It is scrictly for identification and will take on added value when we study the components that makeup as specific process.

=> As the name suggest DFD concentrate on the data moving through the system.

=> Analyst explain why the data are being input or output and what processing is done.

* Developing of DFD :-

=> system analyst must first study the current system that is the actual activities and processes that occur.

=> In the terminology of structure analyst this is the study of the physical system.

=> The physical system is translated into a logical description that focus on data and processes. it emphasizes data and processes in order to focus on actual activities that occur and the resource needed to perform them rather than on who perform the work.

=> There are two type of data flow diagram :- 1) physical data flow diagram
2) logical data flow diagram.

1) Physical data flow diagram:-

It is implementation dependent view of current system, showing what task are carried out and how they are carried out and how they performed its characteristics includes name of people, form and document names or numbers, name of department, admin and transaction file, location, name of procedure etc.

2) logical data flow diagram:-

It is implementation independent view of a system, focusing on the flow of the data between processes without any concern of specific device, storage location or people in the system.

* Rules of DFD:-

1) Arrow should not cross each other.

2) square, circles and file must bear the name.

3) De compost data flow must be balance.

4) No two data flow circle or square have

same name.

5) Draw all data around the out side of the diagram.

6) choose meaningful name for data flow process and datastore.

7) control information such as record count password and validation requirement are not showing to the data flow diagram.

* Data dictionaries :-

Data dictionaries contain all types of information regarding the system. It is a catelogue of all elements of a system. It is a document that collects, co-ordinates and confirms what specific data terms means to different peoples in the organization. Data dictionaries describe files, data flow or processes that should be any entry of every element in the data dictionary. It is must that all the elements are included in the dictionary. The major terms are data flows, data stores and process. A well developed data dictionary should be able to provide following information:

- How many characters are in a data item? (data element, field)
- By what names it is referenced in the system?

* Rules to govern the construction of data dictionaries Entries :-

1. words should be defined to stand for what they mean and not the variable names by which they may be described in the programs For example : use Employee not Abc or xyz

2. Each word must be unique; we cannot have two definitions of the same client name.

3. Alias or synonyms are allowed when two or more entries show the same meaning. A customer number may also be called bank account number. But however, alias should be used only when absolutely necessary.

4. self-defining world should not be composed For example : we might write :
Vendor Name = company Name
Individual Name.

* Why data dictionaries are important?

1. To manage the details :-

Any systems have large quantities of data flowing through them. If an analyst tries to remember it all, then chances are for important elements to be left out. Therefore the information of the data flow should be recorded.

2. Communicate meaning :-

Data dictionary assists in ensuring common meanings for system element and activities, it records additional details about the data flow in a system so that all persons involved can quickly look up the descriptions of data flows, data stores or processes.

3. Document system Features :-

Documenting the features of an information system is the third reason for using data dictionary system. Features include the parts or components and characteristics that distinguish each. Why each process is performed and how often it is used is documented. It produces more complete understanding.

4. Facilitate Analysis :-

The next reason for data dictionary is to determine whether new features are needed in a system or whether changes of any type are in order.

5. Locate Errors :-

The data dictionary consists of information of transactions, inquiries, data and capacity- this tells us a great deal about the system.

* structured decisions :-

* which are the tools used for documenting processors and decision, explain it in detail?

=> A tool is any device, object or operation used a complish a specific task.

=> Tools help analyst assemble information gather through data collection method.

=> Three tools are mainly used for documenting the procedure which are as follows :-

1) decision tree
2) decision table
3) structured English.

=> when analysing procedure and decision the analyst must start by identifying condition and action concept common to all activities.

=> condition and decision variable :-

condition is possible set of event that leads to the selection of different alternative condition for analyst refer to them as a decision variable.

=> Action :-

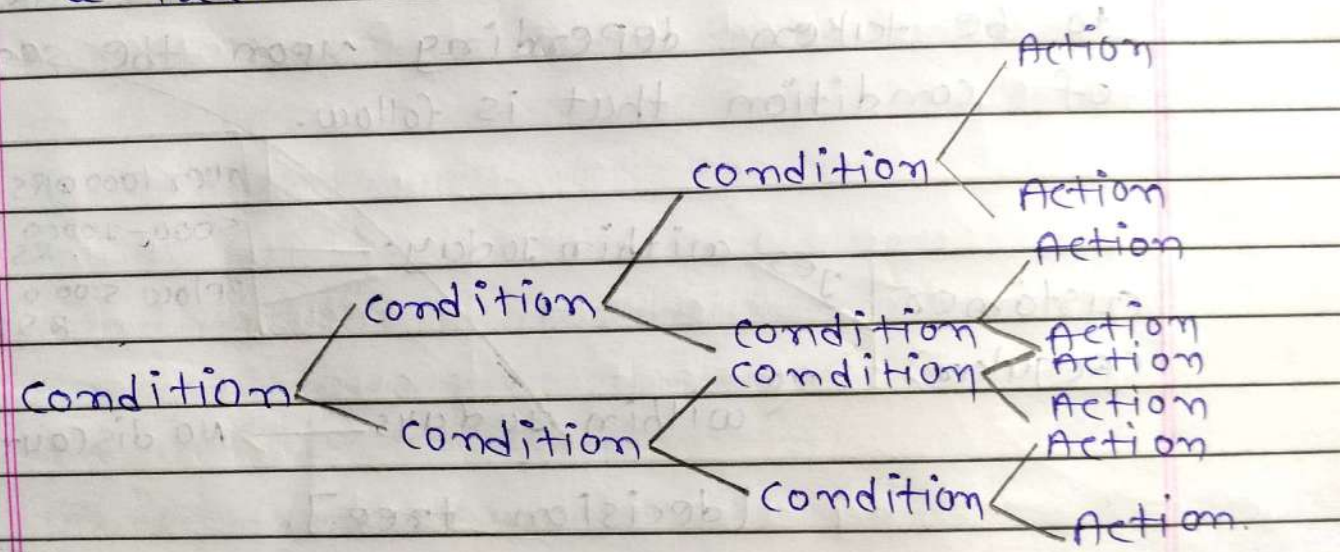
Action are the alternative step, activities or procedure that are individuals may decide to take when conforted with the set of condition. Possible set of event lead to selection of alternative, steps, activities or procedure that can be taken when a specific decision is made.

1) Decision tree :-

=> A decision tree is diagram that present condition and action sequentially and show which condition to consider first which second so on.

=> It is also a method of showing the relationship of each condition and its action.

=> The diagram reassembles branches on a tree.



=> The root of the tree on the left of the diagram is the starting point of the decision sequence.

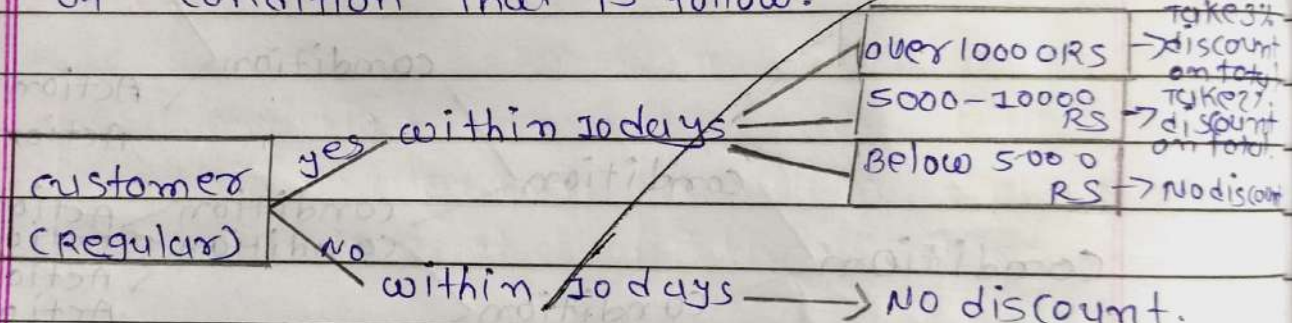
=> The particular branch to be follow depend on the condition that exists and the decision to be made.

=> progression from left to right in any branch will give the sequence of decision.

=> one decision point lead to another decision point.

=> The node of the tree represent condition and indicated that a determination must be made about which condition exists before the next path can be choosen.

=> The right side of the tree list the action to be taken depending upon the sequence of condition that is follow.



[decision tree].

=> There are two aspect to be looked into while preparing a decision tree.

(i) The decision tree needs to be binary. for example :- only two nodes coming out of a node.

(ii) The decision tree needs to be balanced for example:- both the left and right nodes

need to have almost the same number of the branches.

2) Decision Table :-

=> Decision table is a matrix of row and column rather than a tree that show condition and action.

=> Decision rules include in a decision table state what proceders to follow when certain condition exsist.

=> The decision condition made of four section :-

1) condition statement.
2) condition entry.
3) Action statement.
4) Action entry.

1) condition statement :-

The condition statement identifies relevant condition.

2) condition entry :-

condition entry tell which value if any applies for a particular condition.

3) Action statement :-

Action statement list the set of step that can be taken when a certain condition occurs.

4) Action entry :-

Action entry show what specific action in the set to take when selected condition or combination of condition are true sometime notes are added below the table of indicate when to used table it from other decision table.

condition	decision Rules.
condition statement	condition Entry
Action statement	Action Entries.

=> Building a decision tables :-

=> To develop decision table analyst should use the following step :-

1) Identify the condition in the decision.

2) Each condition selected should have the potential to either occur or not occur portion of occurness is not possible.

3) determine the action

4) study the combination of condition that are possible for n condition there are 2^n combination.

5) Fill the table with decision rules.

6) mark the action entries with (x) to signal action to take leave a cell blank for no action apply.

7) Examine the table for duplicate data rules for table for direction within rules.

=> There are four form of decision table which are as follow :-

1) Limited Entry form
2) Extended Entry form
3) mixed Entry form
4) Else form

1) Limited Entry form :-

=> The form consist of only Y, N and blank entries in a limited entry form.

=> The condition entry are marked by Y or N and the action entries marked

by x or blank.

=> For example:-

=> Let's take an example cells policy of a company. This company offer discount of (four) 4% on cells of more than ₹10,000 and payment made within 10 days.

=> If the cells to customer is more than 5000 and < 10,000 than 3% discount is offer.

=> If the cells is below 5000 and payment within a 10 days then 2% discount is offer. If the payment is made after 10 days no discount is offer.

condition	Decision Rules.					
within 10 days	Y	Y	Y	N	N	N
> 10000	Y	N	N	Y	N	N
5000 to 10000	N	Y	N	N	Y	N
Below 5000	N	N	Y	N	N	Y
4% Discount	X					
3% Discount		X				
2% Discount			X			
full payment				X	X	X

[Limited Entry

2> Extened Entry form :-

=> Extened entry form consist of the main criteria in left side and detail condition and action on the right side.

=> The below example can be show extened entry form as follow :-

Condition	Decision Rules					
Time	within 10 days	within 10 days	within 10 days	After 10 days	After 10 days	After 10 days
Business Volume	>10,000	5000 to 10,000	Below 5000	>10,000	5000 to 10,000	Below 5000
Action	4% discount	3% discount	2% discount	full payment	full payment	full payment

3> mixed entry form :-

This is a combination of limited entry and extened entry form in this form the condition part follows the extened entry format as the action part follow the limited entry formcat.

Condition	Decision Rules					
Time	within 10 days	within 10 days	within 10 days	After 10 days	After 10 days	After 10 days
Business volume	₹10,000	5000 to 10,000	Below 5000	₹10,000	5000 to 10,000	Below 5000
4% discount	X					
3% discount		X				
2% discount			X			
full Payment				X	X	X

[mixed Entry form]

4) Else form :-

This form is used to remove the repeated action form decision table some action entry are repeated according to different condition statement else form is used in such a condition.

condition	decision Rules			
Time	within 10 days	within 10 days	within 10 days	Else
Business volume	₹10,000	5000 to 10,000	Below 5000	
4% discount	X			
3% discount		X		
2% discount			X	
full payment				X

[Else Entry form]

3> Structured English :-

=> It is another method to explain condition and action in decision and procedure.

=> This method does not show decision rules but it state them this method allows analyst to list step in the order in which they must be taken.

=> It does not use any special symbol or format using this method entire procedure can be state quickly since english like statement are used.

=> Structured english use is three basic types of statement :-

1) sequence structure
2) decision structure
3) Iteration structure

1) Sequence structure :-

=> It is a singal step or action include in a process.

=> It does not depend on the existence of any condition when counter it is a always.

=> more than one sequence instruction are used together to describe a process.

=> For exc :-

=> To issue book from library follow the following step :-

=> Pick up the book.
=> Take the book to the issue counter.
=> Perform the entry in user register.
=> Take the book.
=> Leave the library.
=> The above example show sequence of step none of the step contain decision.

2) Decision structure :-

=> Decision structure occur when two or more action can be taken depending on the value for a specific condition.

=> one must access the condition and then make the decision to taken the state action or set of action for then condition.

=> once the determination of the condition is made the action are unconditional.

=> Example :-

IF desired book is found THEN.
pick up a book.
Take the book to the issue counter.
Perform the entry in user register.
Take the book.
leave the library
OTHERWISE
put the demand
leave the library
END IF

3) Iteration structure :-

=> In routine operating activities it is common to find then certain actives are repeated while a certain condition exist or until a condition occur.

=> Example :-

DO WHILE still examining more books.
IF desired book is found THEN.
Pick up a book.
Take the book to the issue counter.
Perform the entry in user register.
Take the book.
leave the library
OTHERWISE

put the demand.
leave the library
END IF
END DO

=> structure english can be useful to desire or describe condition and action clearly.