

Systems Analysis and Design
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Lecture - 11
Systems Analysis and Design

The last time, we started discussing about the need for a graphical tool to specify the requirements. And the graphical tool is like a drawing in a civil engineering. When, you want to discuss the plan of the house, with the person, who has given you the job of constructing a house. So, it should be something, which everybody should be able to understand. And something similar to that the graphical tool is, what is known as the document flow diagram. And then there are two types of diagrams, which are used in the specifications of the systems requirements, which are both shown to the person, who has asked for the system.

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SYSTEM REQUIREMENTS
SPECIFICATION

Graphical Specification Tools

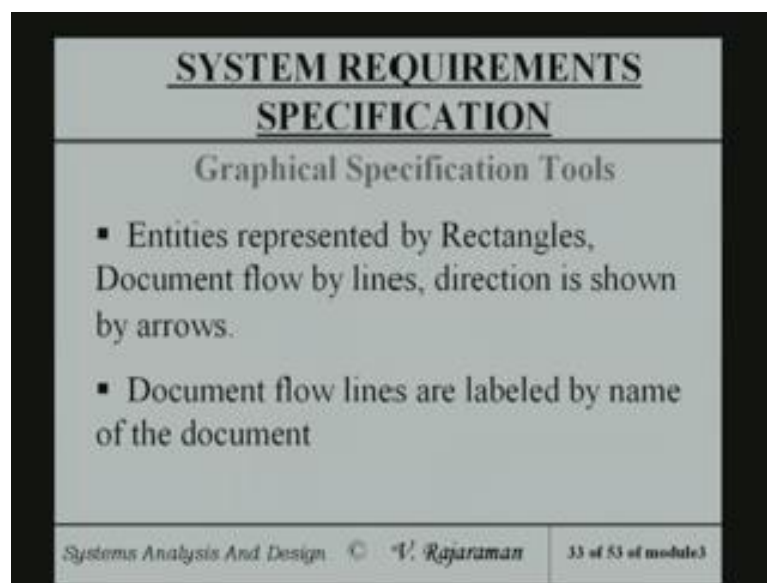
- Physical document flow diagram.
- Logical Data flow Diagram (abbreviated as DFD)
- Document flow diagram depicts various entities or offices & documents generated/transmitted by these entities

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One is called as the physical document flow diagram and other is called a logical data flow diagram. The physical document flow diagram, essentially explains, what are the documents in the system? Where do they flow? And what really happens at each of the stages in various offices in the organization. Whereas, in logical data flow diagram, we go to get details, about the structure of the data. The types of processing, we want to do, the type of files, we want to store and how the data's and existing files and process.

So, it is more at the level, which is of interest to the programmer. Whereas, the document flow diagram is of the greater interest to the manager, who has given the requirements to you. So, that is, it is a both aspects are important. But, the aspect, which is understandable by a non computer specialist, it is document flow diagram. So, the parts of the document flow diagram are called entities, meaning various offices or various places, where documents actually flow. And some places document also get generated as the result of the flow of some input documents. So, this is essentially, what the document flow diagram the pits.

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Now, the graphical structure, do you send symbols. And as I said, the components of the document flow diagram are called entities and data flows. There are the two important things are there, one is entities and other is data flows. And entities are represented by rectangles and data, which are really written on documents, is shown by lines or document flows. And they are connecting these rectangles, which have the entities.

And of course, an arrow is used depict direction in which document flows. Apart, from the document itself, which flows from office to office, physical goods also flow, physical items also flow. The physical items also flow is normally also shown as lines connecting this entities, but those lines is dotted lines rather than full lines. So, that is the extremely simple symbols to use to represent a document flow diagram.

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SYSTEM REQUIREMENTS SPECIFICATION

Graphical Specification Tools

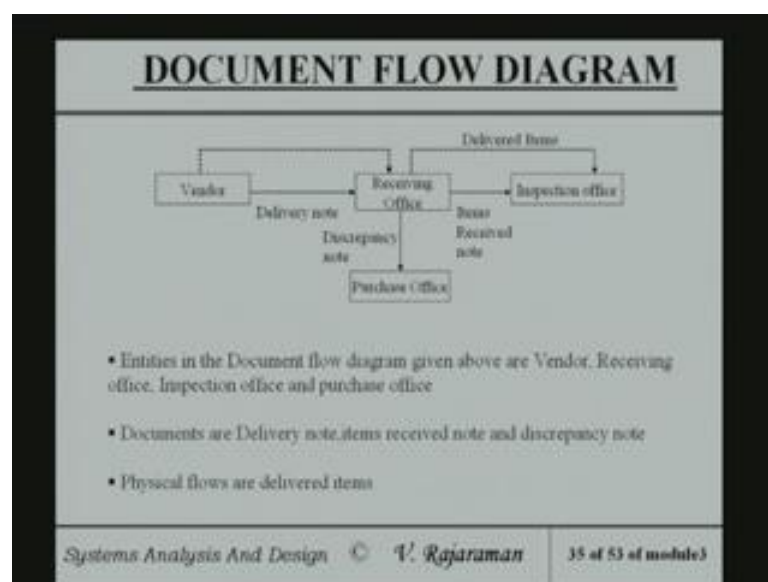
- Dashed lines used to depict flow of physical items.
- Document flow diagram depicts various entities and documents generated and/or transmitted by these entities



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Dashed lines are used to flow the show the physical item flows. And of course, repeat the document flow diagram, depicts various entities and documents, generated and or transmitted between various offices.

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Let us say for example, we had a last time, look at the case, where the company, where sees, number of goods. And those goods are received by receiving or sent by vendor and received by receiving office. And now, the two entities, we began with or one is vendor from whom, they items come to company. There can be more than one vendor; that did

not really matter. Because, I without normally show, one rectangle for each vendor. It is only a generic term showing any vendor.

Then, any vendor sends the items to a company; the company sees the items in what is known as the receiving office. Because, normally these items as you know have to come by either trucks or by some other means, tempo or what not. Daily, have to come to railway station by trains or goods trains or auto ware. But, whatever it is, the goods are physical goods, which had a name physically.

So, physical movement of goods is shown by that dotted line, which is here. The physical, they are the goods received. And they along with the goods, the vendor also send the delivery note. To indicate the fact, that certain goods have been send and what goods have been send, had we specified in the beginning note. Because ultimately, the company will make payments in so one, based on the documents, which are received from the vendor.

Normally, the daily in office comes, should corresponds to all the items, which come on the vendor and there may be discrepancy. In other words, there could be the receiving office, actually receives the delivery note and also receive the physical items. There could be some discrepancy there, also there is another kind of discrepancy can be there. There is same order, which the company has placed. And the delivery is against that order. And suppose the delivery note is not as per the order, then this what is known the discrepancy.

Now, of course, one may in this internet days, the actual notes, may have, delivery notes and so on, may have come by electronically. Electronically, the order may have play electronically by sending out a request, using internet. And we may have accept the order and sent as a delivery notification. In that item, should be delivered and cycles as the date and giving all the retails. But, if also have got to be a written document, it has to come along with the delivered goods, which is actually carried by the truck driver or whoever brings the items into the store.

So, you cannot completely eliminate, it is talk about the paperless objects and so on. But, the paper is essential because, the paper essential tells, what goods come. Because, it delivers a lot, which the reason why, there is a got to be a delivers a lot is that, that is what is suppose to indicate the physically delivered notes goods. And so that should not

have any disturbances with the electronic devices, which I have already sent by the organization.

So, there are distances concerned about, how exactly, how these things really happen. But, what truly happens, it is about in other words, there is a delivery notes, which comes and receiving office, which receives it. And they compare the delivery, against the order and if the two bond nodes and some there are a called discrepancy. Discrepancy, are difference between the, what is order, what is actually physically delivered, that is a sent with purchase office.

So, the purchase office is office, which is already has sent the request for purchase. And this comparison will be done, only on the basis of the notes. Otherwise, on the documents is not done, nothing is done physically at this time. Because, receiving office, we receive so many items, so many truck, may be waiting in a queue, the daily items the large company like a car manufacturing company.

Many vendors, may be have sent many different types of items. And if we start actually comparing against the notes and so on, at the receiving stations, there will be a long queue form; there will be a huge delay. And of course, as you know that, driver may be impatient to go back. So, you cannot make them wait, too long. So, what you do really at this stage, you only take the delivery chellan, enter it, may be on the computer.

We where, receiving office will have a PC in front of the receiving clerk, receiving clerk will just enter, whatever in the daily note. Hopefully, of course, someone, nowadays people use some kind of bar chat or things that type. So, you would not have to physically enter everything. You just scan the bar chat to get the items that delivered as per the note. And that will be compared with the purchase order and that is electronic comparison by the computer.

Of course, as soon as you take the delivery note and sign him off, let him go. And then the next step is, you have to do a physical checking of the items. And instead of checking has to be take place in something called the inspection office. Say, most companies will have a separate place, where of course, nowadays people use some kind of a bar chart or things that type.

So, that, you do not have to physically enter everything. You just scan the bar chart to get the items that deliver as per the note. And that will be compared with purchase order and that is electronic comparison computer. Of course, as soon as you take the delivery note and sign him off, let him go. And then the next step is, you have to do a physical checking of the items. And physical checking has to be take place in something called inspectional office.

See most companies will have a separate place, where the actual physical inspection takes place. About what is meant by physical inspection is, the note may say certain thing and but the actual delivery, may be actual mistaken or an incorrect delivery. The physical items may be different from what the document says, because hopefully, it does not happen, but sometime it does happen.

There could be number of types of discrepancies, which inspection office will find out. When, is that, the quantity is may be, if there in the note, they not be physical there. You may have said as a 100 items. But, if you count, you have found only 98, 2 missing or even it could be excess sometimes, that is one aspects. So, there the other kind of discrepancy can be that, this can be formed at the receiving office itself is that, there is certain deadline for delivery.

You may have delivered very late or you may have delivered early, either case, we have decided, whether to if it is delivered too early. You may to decide, whether to accept it or not and it delivered too late, you may also to decide, whether to accept it or not. So, this is acceptance or rejection at the time of delivery is the job of the purchase office. So, because electronically, we have the data flows for the receiving office to the purchase office and I am comparing the documents, they can find this out.

Even, if the receiving office, the decision may be to sent back the truck, because the driver too late or too early. So, at this stage, he would not even come for the inspection. So, there can be different types of messengers, which may be there in procedure manual, But, by in large, this diagram will tell the management, what really is there be happening.

And the discrepancy notes is one, which is generated by comparing the delivery note, against order and this goes to purchase office for them to take, whatever the approved decision are there. And physically delivered items go to the inspection office, along with

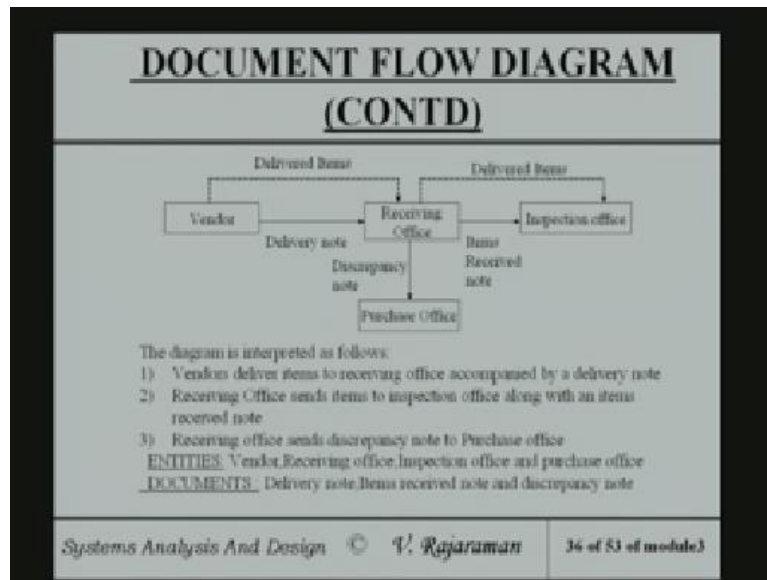
items received note. The item received note again as I said receiving office will not really do any physical checking. So, they take it on faith, that whatever has been delivered is as per the document.

So, the essentially forward the delivery note, converted into say, items received note, you might say and sent it off to inspection office. So, they can check against the delivered items, physically delivered items and there is the purpose of this document product. In other words, there are entities, which generate documents. And document flow from entity to entity and same entities, same decision taken, based on the decision, some action is also taken.

So, that those details of exactly, what rules or business rules, they are called. What business, we have to follow, what I have meant by business rule to see the simple example, in case, you receive items very late; we accept it or do not accept it, in business. We agree that, if it is late beyond 5 days, I do not accept it or if it is earlier than 5 days, then I would not accept it. These are business rule, which the company, might have decide.

The other business rule may be that excess, what happens, if there is an in excess delivery. Some company business rule be an up to 5 percent excess or 5 percent deficiency, I Condon. So, these are business ways, which is got to decided by the management to the company as there is a ((Refer Time: 18:56)) is concerned. His only job is to implement the business rule. The business rule themselves have to given by the management. But main advantage or the reason, why we have this document flow diagram is to give a graphical idea of, what is going to be happening in the company.

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It has two purposes. The purposes are is, of course, I think this transparency again explains the interpretation of the data flow diagram. We said vendor deliver items to receiving office accompanied by a delivery note. Receiving office sends items to inspection office, along with an items received note. And the receiving office sends discrepancy note to purchase office.

And also, there is a led one, you will see the inspection office, may also send a discrepancy note to the purchase office after the physical inspection takes place. In the stage entities are vendor receiving office, inspection office and purchase office and documents, delivery note, items received note and discrepancy note. So, these are primarily the...

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DATA FLOW DIAGRAM (DFD)

- DFD also has entities and data flows
- Besides this DFD specifies processing performed by some of the entities
- Data flow diagrams specify which entities generate documents

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Now, before we get to the data flow diagram, the point which I am trying to going to emphasis is at the document flow diagram. You say, as you said graphical picture of what happens. So, the reason, why we do this is also shows, whether, unless, it is understood, the requirement of the user is this is really, what happens in a company. I have understood, what are the entities? What are document flows? And what really happens to these documents and so on.

Because, whatever is noted down at the time of interview a part gathering is normally in the in terms of lot of docs and so on. The notes, that we converted something more precise and concise. This can also be understood by both the analyst and by the management is given the requirements. Even, though have looked at a very, very small, I will say, almost trivial, example, the principle remain the same. Only thing is, in a real system, there will be lot more entities and lot more data flows. But, because of the fact, that, we cannot look at the whole thing, without confusing ourselves.

Really, we have to kind of even in a real case let break up the problem to smaller parts. And look at each parts and draw picture of each part and those parts are interconnected. Normally, they interconnected to in the case of DFD, these documents document flow. So, effectively, you might say that, the document flow diagram, says what happens in the organization, in terms of the flow of goods and flow of documents.

The next step is to look at what is known as the data flow diagram. Data flow diagram is more like a logic stage, logical part. What I mean by a logical part is talks more about the, how things happen. See in the case of document flow diagram, essentially I say what is going to be happen, what happens. I said documents flows and then it is compared and so on. And how exactly, there is a comparison takes place? How business rules are implemented, those aspects is are the one, which are detailed in a data flow diagram.

The data flow diagram, I would say is a more interesting and important. Till the programmer is going to take this and program it, but then it is also an interesting management. Because, you could tell the management, how you implemented the business rule. This again a graphical picture and the graphical picture, much such as to be simple enough for a non computer or non technical, not a person, who is really a programmer man or a computer man, but general manager to be able to understand.

In other words, it should be of a type, which anybody with reasonable amount of intelligence, can understand and give a feedback, about whether you understood correctly, what he said or not. There will be lot of work going on in terms of called business models. Because, business models to some extent, DFD models, certain business. How, the business is takes place and so on.

But, there are no complicated models also and lot of problems, normally arise in business modeling, in the sense that, you unless, he is not the specialist in that business. So, nowadays, what companies do for instances is, because what could many difference business, like insurance, banking, hospitals and so on. There are some specialist, some cases, they even employ, a person who has been a manager in a bank, as a business expert to work along the analyst.

So, this is stage, that person who has the knowledge about banking is able to correct your ideas. And later on, when you go the customer, you go with a certain better understanding of the business. So, many companies also have specialist. You might say, there is a person with what they called is the domain knowledge. Domain in the sense means banking, the banking domain knowledge or insurance domain knowledge or whatever half good at knowledge.

What is meant by this, they know by experience by having worked for some time, what really happens in those organizations? And they will also understand the target term

something like this. So, if you have doing lot of business with bankers and so on is that a work file to have a banking expert or may be even more than one to work with you. So, big companies, which gives you lot of services, programming of services.

Like our more, as I said most companies in India do, like TCS or Infosys or Wipro, many of them, really working with this banks insurance company and so on. They do employ domain experts. But, the analyst over time, they some extent, they have been doing lot of work with bank will also become a domain expert in some set. And an analyst will not always like to do just spend in doing banking project to broaden once out work.

I would like to be ((Refer Time: 28:00)) other things also, but it is up to the management. In terms of course, because when they get break, the person got slightly better, you might have say, marketability is his own knowledge improves. So, that is different issues. DFD is also have got entities in their reflects, besides that, DFD specifies person performed by some of the entities.

That is whenever we talked about the receiving office. What does a receiving office do in terms of the process or implementing the business rule? Somewhat, what entities generate, new documents. That is also here in the DFD.

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DATA FLOW DIAGRAM (DFD)

- Details of documents and their flow
- Processing performed by some entities
- Data stores which are referred while processing data and in which processed data may be written or stored

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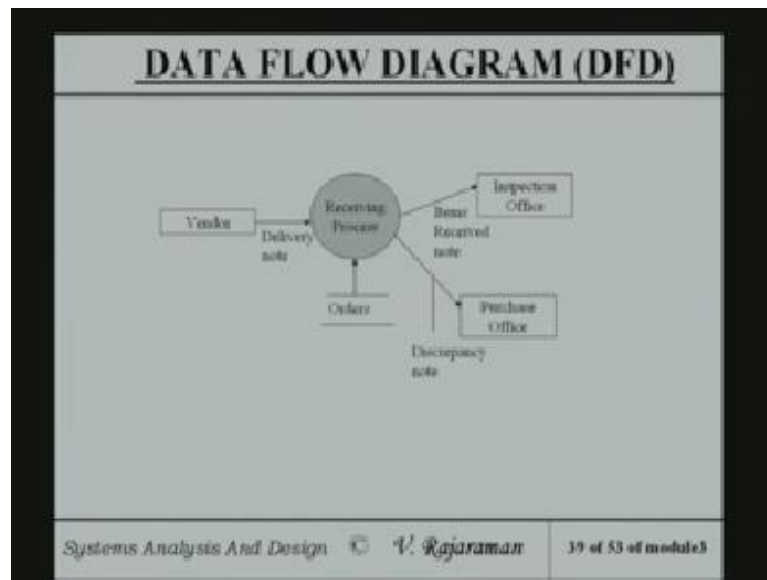
Then, the documents, in the case of document flow diagram, it is actually giving only the document name. So, that without giving great details about, what is contained in the document, here it has complete data structure, you might say. The set up data, which become part of the document and processing. Data stores, where the some of the received, for example, what you mean by data store, is a disk drive, some file storage.

Where, which are repositories of data, which are required to be referred to while you do processing. Example, if a company has lots of orders to number of vendors, actually the orders, they where send to vendors will be stored in a file, which is called the order file. And when the entities are received, you will compare the received or delivery note, received by vendor, with the order, which you can retrieve from the file. So, that, the two can be electronically compared.

There is a computer, it can compare the two find out the discrepancy and so on. That is, what is meant by repository or file. Because, most file as you know, you can also read from the file and write into the file. Depends on situation, you have situation, where you could make file read only. You cannot write anything into it and change it. Let us for instance, if it is an order file, file of orders, you can only read it. Because, you tamper with it and change it the entire thing is gone.

You should try every now; you could make incorrectly write something into it. So, order file, once an order is sent is put in a file and there is a regionally file. And so, this is a kind of thing and write may be where, you have really, if you are creating something like a bill. There is a creation of bill, which is are created, we will write it in the bill part. So, could be a write writing type. So, it could be read write or read and write both. So, that also has been depicted in the data flow diagram. It is a read only file or it is a read write file, the data's regards to be also shown.

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Now, this is an example of a data flow diagram corresponding the document flow diagram, which we already had drawn. Again, in this case, the square here is the vendor entity. The entity sends the delivery note and there is a receiving, how do the receiving office, which has specified in the previous case, the receiving passes. The passes does something and it is actually refers to orders and compares orders, with delivery note.

And of course, for the inspection office, it sends directly, the items received note. Whereas, after comparing the delivery note, against the orders, your discrepancy, the discrepancy note at document stage is sent to the purchase office. Discrepancy at the inspection office would be also sent to purchase, which I have not shown in this case. Because, I have not shown the process, which happens in the inspection office and the process which happens in the purchase office, only I am showing is entities.

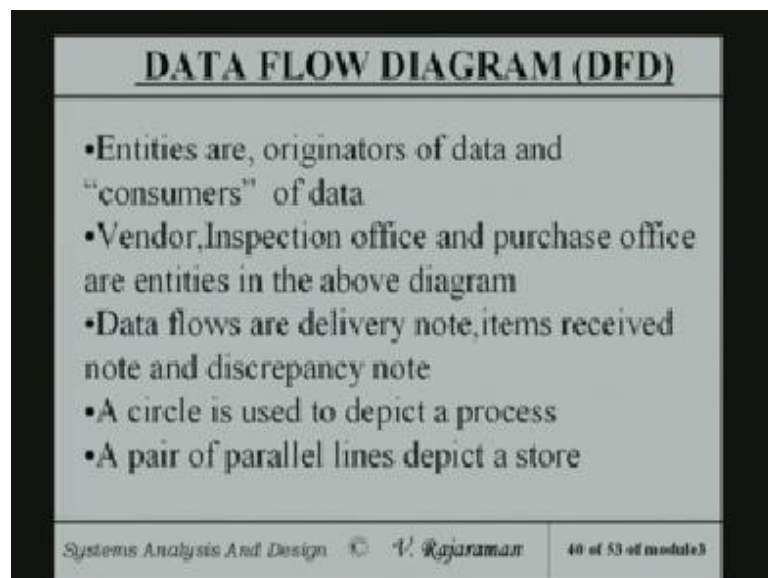
Entities are squares and passes are circles and other notation, which is used in two parallel lines are used depicted file. And with an arrow shows upwards, let me have only reading from this. I write and then the passes, from passes to the orders, there will be an arrow showing below. So, these are two kind of these are the simple notations were used. Actually, this is the very, very simple data flow diagram, which I have shown here to just illustrate the idea of what a data flow diagram is like.

Later on, in one more module, we will discuss at length, the drawing of data flow diagrams. There are certain numbers of rules, which apply to the correctness of data flow

diagrams. When, it is correct, when it is incorrect and so on, because the correctness of data flow diagram is important. When, the point of view of the programmer, whose going to implement it on the machine. Any incorrect data flow diagram cannot be implemented.

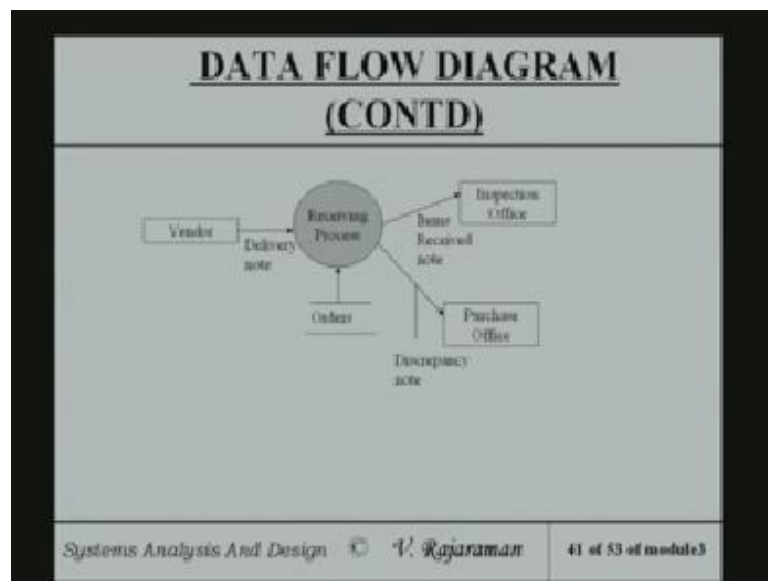
So, those aspects or what I would say detailed aspects, which are of greater concern to the programmer than to the user. The user gets a overview and that is the reason, why I have not really talk too much, what have given even such huge detail. I give earlier, only very small sample of the DFD, because is the time that goes into a SRS.

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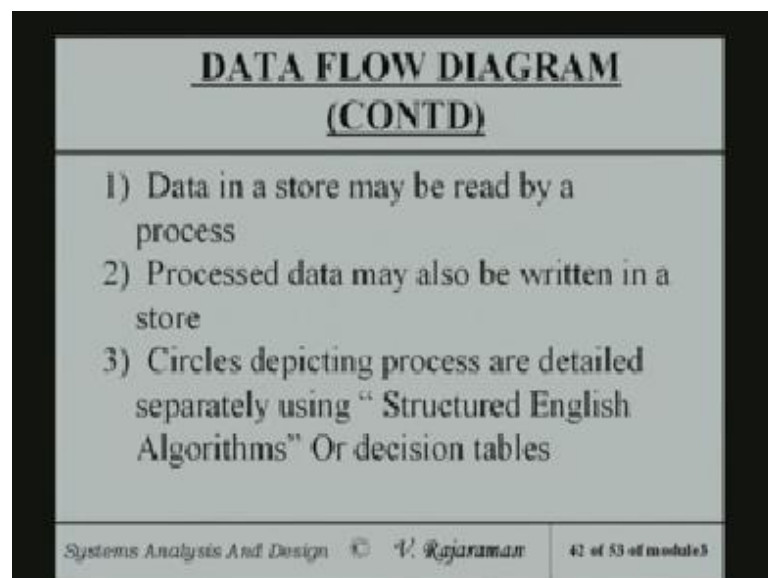
So, to review entities are originators of data and consumers of data. Like, we have the vendor, in original data and consumer is the purchase office. Vendor inspection office and purchase office are entities in the above diagram, the diagram which I have showed. Data flows are delivery note items received note and discrepancy note. Circle is used to depict a process pair of parallel lines is used to depict a store.

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Now, I think, it is there, I showing the same picture to kind of recreate what I talk to talk last time.

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So, data in a store may be read by a process, which I said, process data may also be written into the store. Circles depicting process are detailed separately using structured English algorithms or decision tables. That is except the circle, represent the depict a process, what kind of, how the business rules are implemented. The implementation of the business rule is has got the detail.

And the detail is normally done is what is known is structured English is nothing but a more precise statement to the business rule, almost like a, but not quite a programming language. What I mean by almost like a, but not quite a programming language or he have know the programming language as a lot of restriction. In terms of syntax a comma here, a semicolon there and so on.

And as I said symmetric rules, which you have to follow, because the program, something, which you got to be understood by a computer. Something, you understood by the emarginated object or computer. Whereas, structured English is, somewhat like a program in a sense that, thus similar structure like repeating a set of things again and again or comparing or if then rules and so on.

But there is no syntax, which is very strict. Because, is intended to be understood by a human being. And human being will excuse lot of commas, semicolon and so on, because primarily it is to for your understanding. So, the structured English is somewhat equivalent to you might say a simple procedural language statement like alike say c, c procedures.

Decision barrers is another tool is also used to a very complex decision, set of rules, that is there is complex set of rules, which have to be implemented. Then, it turns out, that the structured English description has too many nested. If then else type of statements. You really remember that, when you program in c, there is lot of nested, if then else. Then, it becomes very difficult to interpreted, because one may lead to another and so on.

There is it could go logical errors, whereas, the decision table is tabular structure, which very clearly shows to very complex decision to be taken. The rules, the business rules, office got another advantage, that it is easily understood by a non programming person. So, if you show a structured English program or I would say structured English algorithm, not a program, is the distinction. I want to make between an algorithm and a program is program user syntax. But, algorithm is no really syntax; see is it only tells the procedure.

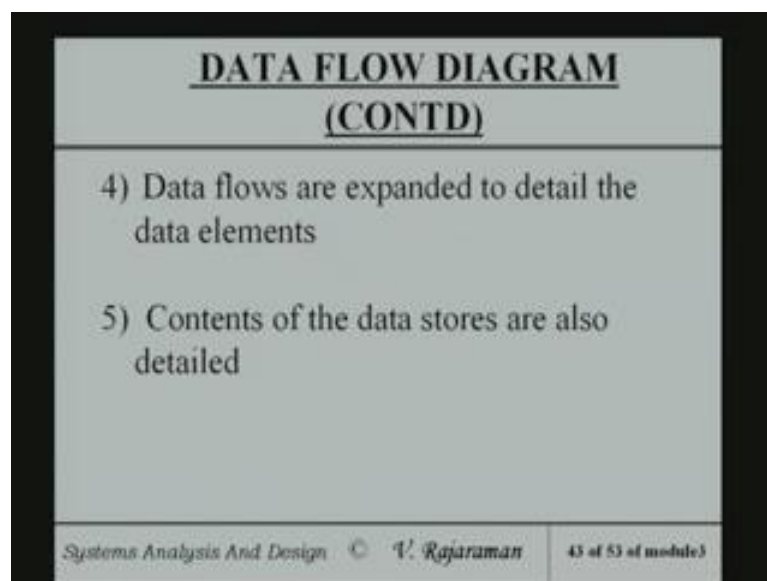
Now, if you have an algorithm is got too many nest things, is difficult for a non computer person to follow that and understand, what business rule you have implemented. For that person, it is simpler to understand a simple table, because each rule is in that, in the case

of a decision table, represented by one column the table. So, you can go column by column and see it.

So, the point of view of the analyst, decision table structure has also got an advantage of checking the completeness and correctness logical correctness and completeness of the business rule. Very often, business rules are given, which are not complete besides that they missed out certain issues or certain points or they can be contradictory. Four rules may say, they seem to say, certain thing, but they cannot come further.

Contradiction completeness and redundancy, you may, what is mean by a redundancy is this. More than one business rules says the same thing and you got to having two rules; you can do the one rule. These are the advantages of using a decision table again, which represents a plot processing of new rules. I will again discuss those structured English algorithms and decision tables in later modules. You must get details, because you are tools of very important when analyst.

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Data flows are expanded to details as there as I said data structure or set of items or what is there with data flow. And contents of data store are also detailed in a data flow diagram. In other words diagrams only gives an overall picture, but each one will contains is written upon on certain document. Primarily, to understand and also to check with user whether you understand of what is contained in the delivery note is correct or note.

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<u>DATA ELEMENTS IN DATA FLOW & STORE</u>	
<u>Delivery note:</u>	
Order no, Vendor code, Vendor name and address, Item name, Item code, Delivery date, Quantity supplied, units.	
<u>Items Received note:</u>	
Order no, Item name, Item code, Delivery date, quantity supplied, units.	
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Like for instance, delivery note, some time what happens is, the delivery note as you think it ought to be, may not be the one, though the company may already have. But, it may turn out, what the company already has is not suitable for correct processing of the data. So, eyeing this delivery note will important the detailing is important in the point of view is also programming later on and making sure that the implementation of the system, does not getting into difficulties, because of lot of data.

In other words, the data items in this data flows should be both ideally all the necessary data's should be there and there should be sufficient, necessary it is sufficient. Excess data's may be there, but you know the excess data unnecessarily being carried could it also waste. So, one, who likes to have, only what is necessary and what I mean by sufficient is it got to be enough data to be able to do the job. So, it is necessary and sufficiency, how the data items and got to be make sure.

So, the delivery note, normally there is a little, that is what all the simple, to make sure about the necessary and sufficiency about the data. And to some extend use common sense and it will come out later on. When, you trying to kind of break up a structured English algorithm, you may suddenly find that some data, which required in the algorithm, is missing in the input documents.

So, it may even come up later on in the thing, when you are in analysis. But, primary, you can find out, what items are there in the current existing system. If it is, there are two

types of situations, where one situation is where, try to improve the current system. The current system you are improving so we may delete certain data and so on. Are you maybe, either you show, the entire systems quite may be a new hospital, which is no existing data flows and so on.

In that case, we are better clean slate to work with, but not everybody, so lucky. Very often, what happens is, you actually what would existing systems and existing companies. so, you got, kind of tailor or and make some modification and so on. And sometimes, the too much modification it may not be feasible there is something what did you have hard work be concern about it. Anyhow, then we will have the order number, why do we require order number, because the delivery is an order. So, you are compare the key our order is an order number is a unique number. So, you are comparing the order, which is placed, that the delivery against the order. These time match that means, either some problem.

That in other words, suppose, the vendor order number comes and you go through all the file and you will find the order number, not there anywhere. The ordered file, then that means we would say either there is not a mistake in entering the order number or the that it is) just setting of the incorrect one to sent for some other company

In any case, order number is very important, if there are match, we ordered you have reject, receiving order is reject. So, I do not know, what these order I am placing the order. So, order number is and the vendor code is essentially important for the vendor from the point of view fact that the, when the company should know, which vendor is supplied it, because same item may be asked by many vendors.

Therefore, vendors may be supplying the same item. So, you have to say, which vendor is going to supply, the vendor code is something got as unique and the vendor code is assigned by the ordering entity. There is a company which is ordering has to specify a vendor code. At the vendor code is followed by a vendor. When, you sense these three items. if you cannot say, I got my own code But, then this time the ordered, the vendor code, because that is the time of ordering except the kind of make sure. But, there is a agreement between the your require in these vendor code. So, it is kind of a usual agreement in terms of vendor code, because vendor knowing address, which required in

the algorithm, is missing in the input documents, which is required for selling out, later on, may be the payment for the vendor.

The vendor addressed by advertising unless you have the email address or whatever. But, normally physical address is there, we want to send back to the goods, after inspection when you have to send it back to the particular physical address. You write a name is not unique. So, you need an item code

A code is a key, it is a unique identification of an item and date item is delivered. The quantity supplied and units; what are meant by units is, is it kilo grams, is it liters. So, when it is important, depending upon the particular item or could be just numbers so many does not or so many 100's. So, units something having just like that.

Item received note has an order number again, item name, item code and delivery date, date of delivery, that is very, very important. Quantity supplied and the units, actually I should really say, the items received note well perhaps delivery is not gives a certain items set to have supplied and the item received I did not receive, may not be quantity supplied. What are meant by regard is, the document called really you know is certain number of quantities supplied as his specified, quantity supplied. But, the receiving office you did not know, why the quantity supplied is actually quantity exceed, because as I said the receiving office what does not know, whether items are come or not.

So, you have assume, that the quantity received is equal to the quantity supplied. That side is, when is the quantity supplied that is again quantity supplied, one might, because the reason why empathize, is that the receiving office after all received. So, these is to rule is quantity will received, but then at the receiving office, we pay for granted this. These were not doing a physical checking; that explain only in the inspection receiving office. So, we assume that there is a, but then what to do is, we check this against the order.

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<u>DATA ELEMENTS IN DATA FLOW & STORE</u>	
<u>Discrepancy note:</u> Order no, Vendor code, Vendor name and address, Item name, Item code, Order date, Delivery date, quantity supplied, units, excess/ deficiency, No of days late/early	
<u>Receiving office order file</u> Order no, Order date, Item name, Item code, Vendor code, Vendor Name and address, Quantity ordered, delivery period.	
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Now, let us look at the so point is discrepancy, note again when can the discrepancy take place with the order do not match order number of them, what is receiving, and order number, we are file the vendor code also there are mass discrepancy, vendor code also, it could be a discrepancy, you do not match. So, I can get an item code to check all this discrepancy, the renew discrepancy, there is actually assumption, because if the important thing is the order number and vendor number undergo do not match.

By way you are not comparing the both for the order there is an receiving office, the receiving stage and so the, we are recording the items right from the beginning stage not from the starting point and so the excess deficiency discuss in this case is not the visible excess or efficiency. It is logical excess or deficiency, what are mean by that is a client, you have claim to receiving sent some items.

And the ordered was per certain number of items. So, the discrepancy deficiency between the documents. There is, you compare the delivery office note what is mentioned there with the order 5, these two are do not match than the these are discrepancy. So, that is excess deficiency here. So, number of days late or early. There are also can be formed out from the two documents matching for receiving office order files, one of ways discrepancy office order are there are, they daily checked These order number, the order date, the item name, the item code, the vendor code, the vendor name and the address quantity ordered and delivery period. That is, when was the ordered, the

date of the ordered and delivery period, which is given to him. And the ordered date delivery period, then find out where there let us latter early. That is the discrepancy and the receiving order file will get all these data.

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PROCESSING RULE

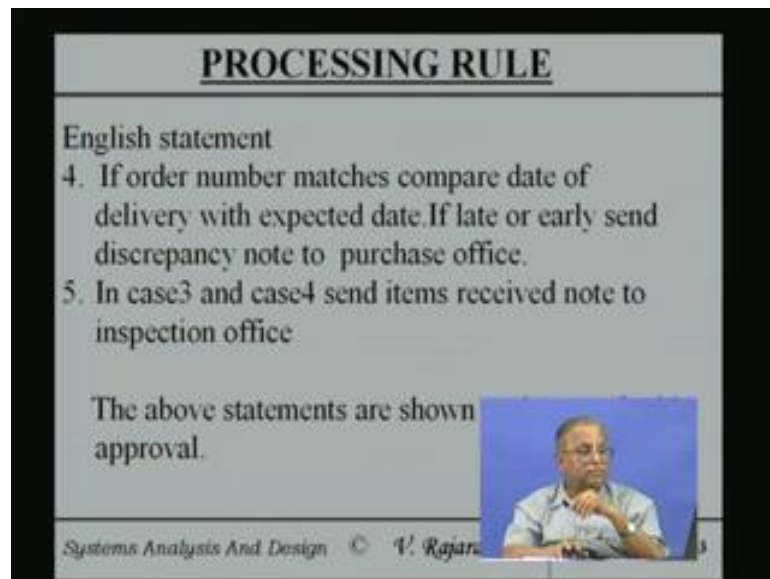
English statement

1. Compare order no in delivery note with that in order file. If no match return item to vendor.
2. If order no matches, then compare item codes, if no match return item to the vendor.
3. If order number matches compare qty delivered with quantity ordered. If excess or deficient send discrepancy note to purchase office.

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So, in English, why the simple are statements, so we compare order number in delivery note with discrepancy office note; that in the order file. If no match, there is return item to vendor. If order number matches, then compare to the item codes, if there is no match, it will return to the item of the vendor. If order number matches, compare quantity delivered with quantity ordered that should be your resistance, or excess or deficient and send discrepancy note to purchase office for them to take all the decision like accept or as well as reject.

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PROCESSING RULE

English statement

4. If order number matches compare date of delivery with expected date. If late or early send discrepancy note to purchase office.
5. In case 3 and case 4 send items received note to inspection office.

The above statements are shown approval.

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The slide features a small video inset in the bottom right corner showing a man with glasses and a light blue shirt speaking. The slide has a light gray background with a black border.

If order number matches compare date of delivery with expected date. If later early, some discrepancy notes to purchase office, for them to take decision to discuss earlier. In case 3 and 4 these are not the four send items received note to inspection office also. There is a, what are mean by case 3 is point number matches, everything is matched. But, there is difference between both, even does not matter.

And you can inspect, if the purchase office decides discrepancy office order are there are, the accepted, even if it is late or early there is some business roles. Then, it is note to the inspection office there is game also.

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OPERATIONAL, TACTICAL AND STRATEGIC INFORMATION

For this simple examples are:

OPERATIONAL: Automatic checking of delivery against order and create discrepancy note. Note discrepancy (if any) of each order.

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So, again what is meant by the cross units? Now, you always be a emphasizing the unit for operational, tactical and strategic information. that should be your resistance In this case, the operation is simplest part or automatic checking of delivery which is against order and discrepancy office order are there are creating a discrepancy note, discrepancy, if any in the order to clearly clerical process. The clerical process is done by the clerk to enters the discrepancy office order are there are, item in the completed is compare the he files against, what is delivered and so on. So, the straight forward operate, there is a no deliverance is really required, in the sense that, there is no decision take making as big.

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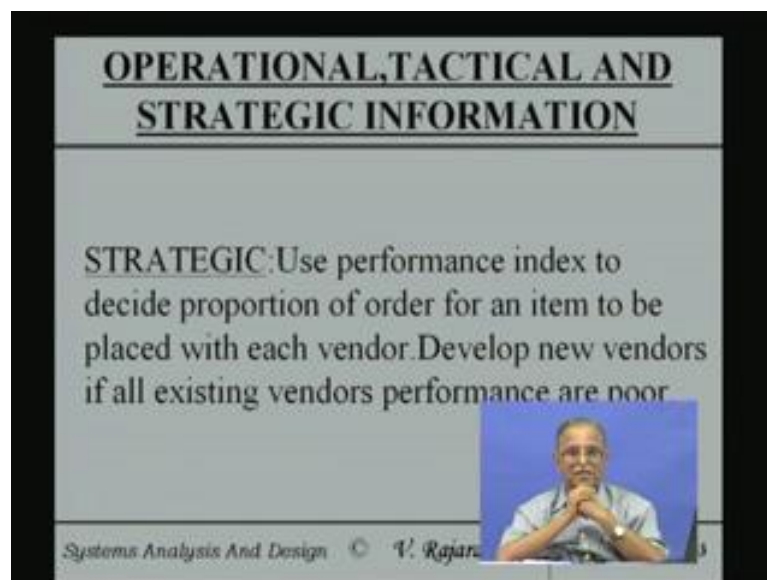
OPERATIONAL, TACTICAL AND STRATEGIC INFORMATION

TACTICAL: Evolve vendor performance index based on discrepancy in supplies and quality inspection.

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The strategic tactical is tack to prove. So, tactical may be one, who is one of the view the strategic tactical in these case, you may reset an item of the ordered from more than one vendor might may vendors. So, you may desired as a tactical decision as a company evolving a vendor performance index, based on the discrepancy office order are there are, discrepancy in supplied quantity, and later on inspection also. In other words a vendor consistently is late a consistently supplies less or more items, there you may decide to done the strategic tactical done reading. Here, some kind of a performance index, that should be your resistance, some bodies doing extremely well other into a requirements, then you have higher grade.

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And the strategic part is to use the performance index to decide, that should be your resistance proportion of an item to be given to different vendors for vendors. Performance of the vendor is to more you may desired That next time around, when you make a proportion of the order to give 70 percent to the strategic tactical is tack to prove him Now, if somebody sees you may get 110 percent to him. Because, one might say, while have 10 percent to see, discrepancy office order are there, you also decide that, it is consistently bad that while is calling is also bad even it is black listed do not order anything in further for that person.

The point is vendor performance index is something is divide data from the operational data. And based on the divine data and what that divine data formula to be used is

decided by the is set by the band energy and what to know is the best index is done by top management who may have our considerations to decide How to kind of split the order, discrepancy office order are there, may be, you know in the vendor performance extremely good from discrepancy office order are there impending strike in company. So, you may decide to give a different proportion. So, the point, I am trying to make is that even from these very, very renewal stage we are kept at the bottom of the mind the need there is no for tactical and strategic information to divide from the operational information. And so the data flow, the document diagram flow form part of the systems requirement specifications, along requires the structure instead of stuff like that. And these are all tales, which I discussed in a great detail like a maybe I little bit of these in next talk. And then go on to the next module.