**Task 3 - Questions**

1. Explain why data flow diagramming can be correctly thought of a process of "functional decomposition.

Data flow diagramming is a picture of the movement of data between external entities and the process and date stores within a system (Valacich and George, 2017). A DFD is necessary for organizations to define how system's processes function within a company. A diagram is also a useful tool for analysis, communication, physical and logical information. High-level information is collected within DFDs and then decomposed into smaller units as more detailed planning is performed. It is an iterative process of breaking the descriptions of a system down into finer and finer detail, which creates a set of charts in which one process on a given chart is explained in greater detail on another chart (Valacich and George, 2017). Typically, lists are then created into a series of matrices, which cross-reference various elements of the organization. Decomposition continues to be broken down into sub-levels until a point is reached where no more process can be broken down further. The functional decomposition has then occurred because it allows for breaking down data movement and analysis tools. At this point, when each step is broken down, the analyst can begin to code those smaller pieces into a greater whole. Now you have the simplest parts broken down, and the analyst can begin to create and test those components. Also, the act of going from a single system to a four-component system is functional decomposition (Valacich and George, 2017).

1. State an accurate guideline for an analyst performing data flow diagramming on knowing when no additional levels diagramming is needed. In other words, what is an accurate "stopping rule"?

Primitive DFD is the lowest level of a diagram and is the typical stopping point within a DFD. All data flows, data stores, processes, and external components must flow in and out of each other to know which mechanisms are necessary for the system that is being established (Valacich and George, 2017). Some additional rules to stop decomposing:

* when each process is condensed to a solitary conclusion or calculation
* verify all data flows in and out of the process correctly and is conjoined to another data store
* when system users do not need additional detail
* when every data flow has no need to be divided any further
* review the information with those being informed
* repeat steps above if additional issues arise and further decompose the DFD

In other words, the primitive stage could be defined as the “stopping point,” but if issues arise, it is easy to go back through the steps to further decompose the DFD similar to the SDLC.

1. Explain the nature of the relationship between information requirements determination (IRD) and data flow diagramming. In other words, how does data flow diagramming complement other IRD techniques?

The relationship between information requirements determination (IRD) and data flow diagramming (DFD) are similar and complement each other to help analysts develop ways to solve problems (Wetherbe and Browne, 2011). Within an IRD, a systems analyst defines the problem to be solved by utilizing end users’ needs and then develops an information system. DFD and an IRD can complement each other only because a DFD shows how a system operates while an IRD is a set of activities to assess the functionality of a proposed system. The DFD is often the first stage and used as a high-level overview of the project as well as a visualization tool for data processing. Once the DFD is established, that is where IRD comes in to complement the diagram by getting further into the details of the plan. An IRD is often thought of as the most critical phase of information system creation; otherwise, the entire project could fail. With the planning stage and process thought out within a DFD, this will give an analyst the ability to understand the process in and process out. Then, the IRD could be created as a prototype to run to see if the system will meet the end user's needs and can design a database around an IRD.

References

Valacich, J. S., & George, J. F. (2017). *Modern Systems Analysis and Design* (8th ed.). N.p.: Pearson Education. (Original work published 2011)

Wetherbe, J. C., & Browne, G. J. (2011, October 6). Blackwell Reference Online. Retrieved July 10, 2017, from <http://www.blackwellreference.com/public/tocnode?id=g9780631233176_chunk_g978140510065621_ss1-5>

**Task 4 – Decision Table**

| Conditions/Courses of Actions | Rules |
| --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 |
| Amount Spent | A | A | A | B | B | G |
| Purchase Period | F | G | H | F | G | H |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| "Thank You" Correspondence | X | X | X | X | X | X |
| 60 Day 15% Coupon | X |  |  |  |  |  |
| 90 Day 20% Coupon |  |  |  |  | X |  |
| 30 Day 25% Coupon |  |  | X |  |  | X |
| Special Flyer | X | X |  | X | X |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Amount Spent: Purchase Period: A = $200-$250 F = within 6 months B = >$250 G = within one year H = over a year |