

HW3 - Structured Methodologies

Questions and exercises

1. Give an example of a nonautomated system that, in your opinion, *should* be automated. Why do you think it should be automated? What would the benefits be? What would the costs be? How confident are you of the benefits and costs?
2. Why would it be useful to have more than one model for a system?
3. What is wrong with the following DFDs?



Fig. 1

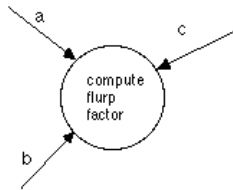


Fig. 2

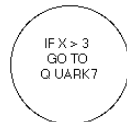


Fig. 3

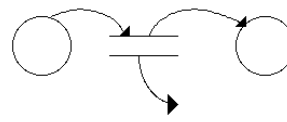


Fig. 4

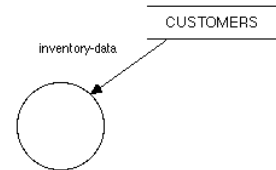


Fig. 5

4. How should the systems analyst identify the terminators?
5. Why should a process not show the name of the person currently performing that function?
6. What is a good guideline for naming the processes in a DFD? Give five examples of process names that you would not like to see in a DFD.
7. What is a control flow? Why is it different from a dataflow?
8. Draw a DFD for the following business process:

A customer can register to a TV cable company by filling in a subscription request. When a new service subscription request arrives in company it is registered in a unique location and automatically assigned to a worker in Subscriptions Division for data verification. The worker selects the subscription request, checks it and cancels or accepts it.

When the subscription request is accepted, it makes the transition to the subscriptions manager. The document waits until the manager selects it from other documents that wait for tariff assignment. When the subscriptions manager inputs the subscription tariff, the system checks to see if technical conditions exist to deliver the service at the subscriber address. If some technical conditions are not verified, the request is notified and made available to the Installation Division where it will wait until all technical conditions are fulfilled. Otherwise, the system automatically routes the request to Accounting Division for service activation. When the services were activated, an e-mail notification is sent to the customer.

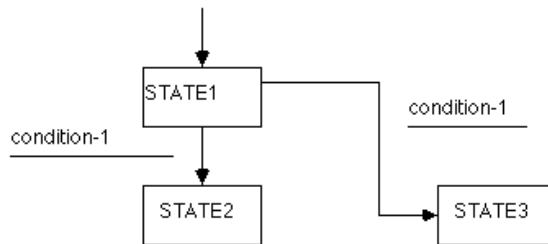
9. Write a data dictionary definition of the information contained on a typical bank credit card (e.g., MasterCard or Visa).
10. Give a data dictionary definition of customer-name based on the following verbal specification from a user: "When we record a customer's name, we're very careful to include a courtesy title. This can be either "Mr.," "Miss," "Ms.," "Mrs.," or "Dr." (There are lots of other titles like "Professor," "Sir," etc., but we don't bother with them.) Every one of our customers has a first name, but we allow a single initial if they prefer. Middle names are optional. And of course, the last name is required; we allow a pretty broad range of last names, including names that have hyphens ("Smith-Frisby," for example) and apostrophes ("D'Arcy") and so forth. We even allow an optional suffix, to allow for things like "Tom Smith, Jr." or "Harvey Shmrldu 3rd."

11. Which of the following are likely to be ...

... reasonable object types in a typical business system? For those that you do not think are reasonable object types, indicate why.	... relationships in an ERD and which are not? Why or why not?
a) "customer" (b) "compute sales tax" (c) "height" (d) "product" (e) "tomato" (f) "religion" (g) "temperature" (h) "edit transaction" (i) "manufactured part" (j) "map" (k) "ASCII character"	(a) "purchases" (b) "customer" (c) "belongs to" (d) "weight" (e) "produces" (f) "sales tax computation"

12. Draw an ERD for the following situation for a management consulting organization:
 "Each sales representative works with several different clients and has access to several different consultants in the organization. A consulting engagement with a client may involve several different consultants. During the engagement, the salesperson is uninvolved and the consultants report directly to the client."

13. What is wrong with the following STDs?



14. Point out three balancing errors in the following system model.

