Tutorial 4
Business Process Design and System Flowcharts

You will learn to:

- **Prepare systems flowcharts.**
- **Identify system flowcharts for typical information processing routines.**

Points to note when creating Systems Flowchart:

- Set up and label columns, one for each internal and one for each external entity.
- Use narratives, tables of entities and activities, and DFD physical and logical diagrams for source information for the flowchart.
- Show activities proceeding from top to bottom and left to right. Keep a flowchart as clear and simple as possible while representing activities fully. Keep the flowchart to a single page, using off-page connectors when necessary.
- Use appropriate flowcharting symbols to show all processing that occurs.
- Strike a balance between clarity and clutter by using annotation judiciously and by using on-page connectors whenever flow lines might create clutter.
- Avoid crossing lines wherever possible. If you must cross lines, use a "bridge".
- Flowchart normal routines and leave exception routines for another page of the flowchart.
- Compare the finished flowchart to narratives, activities and entities tables, and physical and logical DFDs to make sure all activities are accounted for fully.

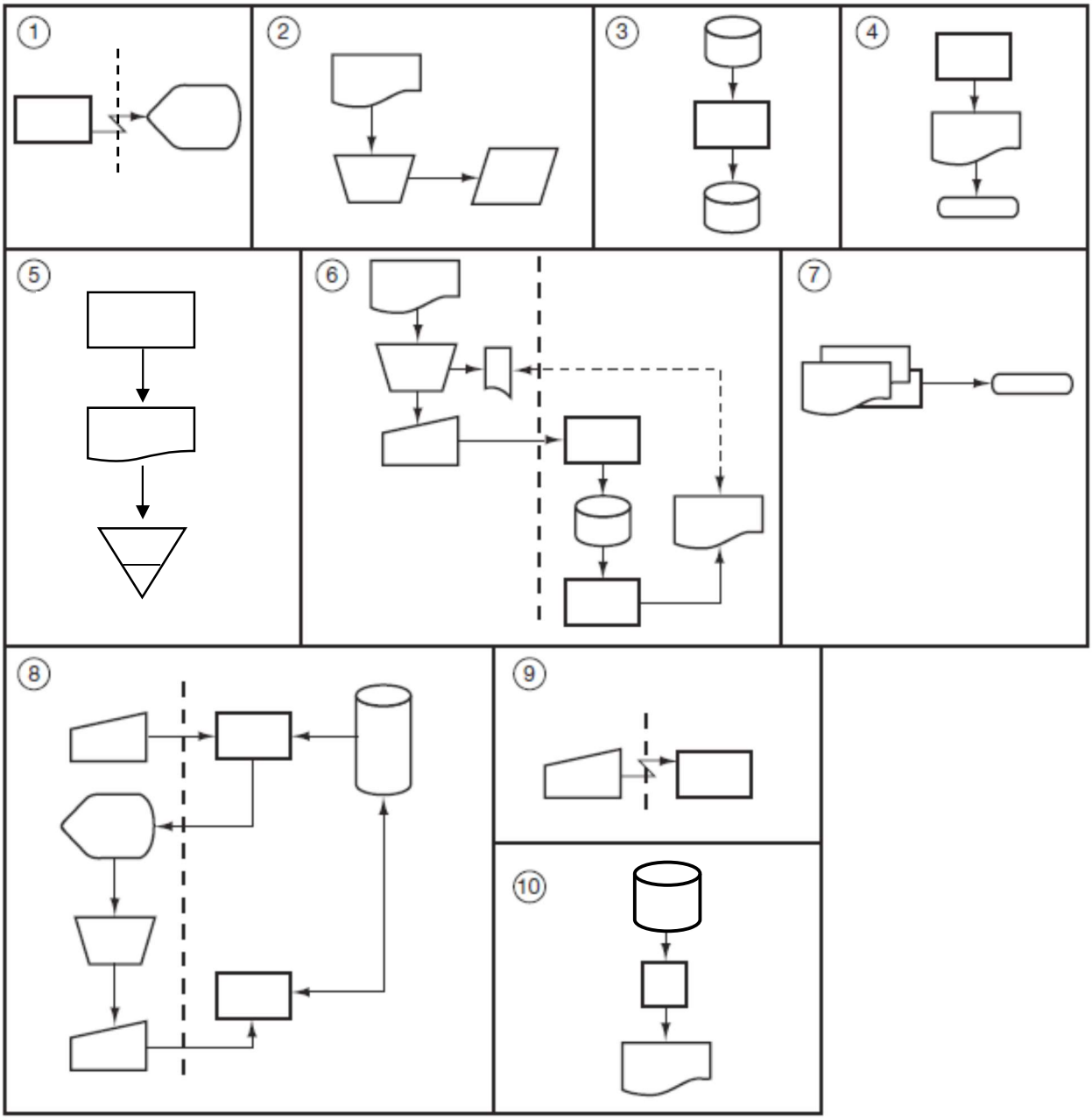
Exercise 1:

A description of fourteen typical information processing routines is given here:

a. Data stored on a disk is sorted and placed on another disk.
b. A report is printed from the contents of a disk.
c. Documents are manually posted to a paper ledger.
d. Magnetic tape input is used to update master data kept on a disk.
e. A printed output document is filed.
f. Multiple documents are sent to an external entity.
g. Data on source documents are keyed to an offline disk.
h. Programmed edits are performed on key input, the data entry clerk investigates exceptions and keys in corrections, and then data on the disk are updated.
i. Input stored on two magnetic disks is merged.
j. The computer prepares a report that is sent to an external entity.
k. Output is provided to a display at a remote location.
l. A batch total of input documents is compared to the total reflected on an error and summary report produced after the documents were recorded.
m. Data are keyed from a remote location.
n. Data on a magnetic tape are printed during an offline operation.

Match the flowcharting segments (in Page 2) with the above descriptions to which they correspond. (Four descriptions will be left blank.)

Flowchart segments:



ANSWER:

a.	h.
b.	i.
c.	j.
d.	k.
e.	l.
f.	m.
g.	n.

Exercise 2:

This exercise is a continuation from last week's problem on the order entry system for the OfficeSupply Company. A copy of the narrative is reproduced here:

OfficeSupply is a wholesale distributor of office supplies, such as disks, stationery, file cabinets, and relate items. Customers receive an updated catalogue annually and place orders over the phone.

When a customer calls in with an order, a clerk asks for the customer ID and name. The clerk keys in the customer number, and the computer retrieves the customer record from the customer database and displays it on the clerk's screen. The clerk compares the customer name to the data on the screen to ensure that the customer is legitimate. If everything checks out, the clerk enters the customer's order. After the order is entered, the computer compares the amount of the order to the available credit to ensure that the purchase does not exceed the credit amount limit.

This results in the creation of an entry in the sales event data store and an allocation of inventory. At the end of the day, the sales event data is processed against the customer data and the inventory data, and the sales order is recorded in the sales order master data store. At the same time a customer acknowledgement is printed in the mailroom and is mailed to the customer. Also, a picking ticket is printed in the warehouse and will be used to assemble the customer's order.

a) Construct a system flowchart based on the narrative and the output from Parts (a) through (e) of Tutorial 3 practical exercises.