

Transaction Processing System (TPS)

An Information system that processes data arising from the occurrence of business transactions.

- Transaction processing systems (TPS) are aimed at improving the routine business activities on which all organizations depend.
- A transaction is any event or activity that affects the organization which occur as part of doing business, such as sales, purchases, deposit, withdrawals, refunds and payments.
- Common transactions include placing orders, billing customers, hiring employees, and depositing cheques.
- The types of transactions that occur vary from organization to organization.
- Transaction processing, the set of procedures for handling the transactions, often includes the activities like calculation, storage and retrieval, classification, summarization, sorting.
- Transaction processing procedures are often called standard operating procedures.

Example:

The routines associated with general banking transactions typify the use of standard operating procedures for the handling of deposits and withdraws, cashing of cheques, and other processes.

Customer Activity	MIS System Activity
Enter A/C Number	Verify the a/c no is acceptable or not.
Enter password (****)	Verify that password is valid for the a/c.
Enter withdrawal amount	Verify that amount is within limits set by the bank.
Ledger.	Record transaction in
	Dispense money.
	Issue receipt for transaction.
Remove receipt & money	Ready for next transaction

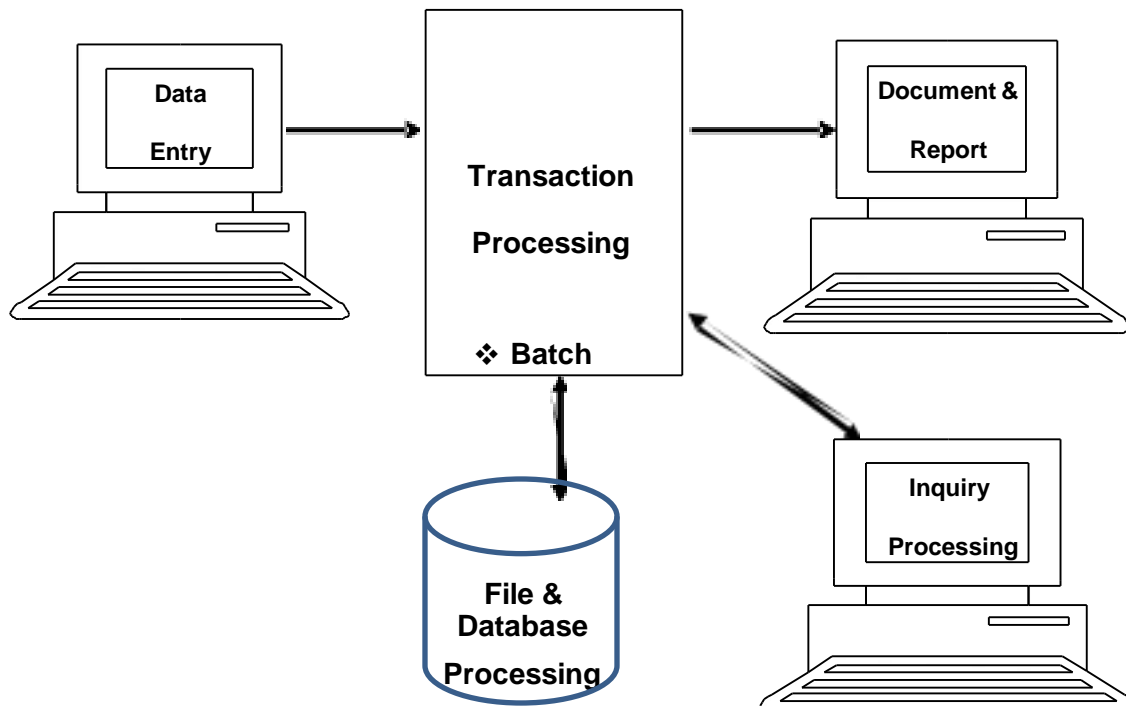
Transaction Processing cycle:-

Transaction processing systems capture and process data describing business transactions. Then they update organizational files and databases and produce a variety of information products for internal and external use.

Transaction processing systems generally go through a five-stage cycle of

- 1) Data entry activities
- 2) Transaction processing activities
- 3) File and database processing
- 4) Document and report generation
- 5) Inquiry processing activities.

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1. Data Entry:-

The input activity in transaction processing systems involves a data entry process. In this process, data is captured, or collected by recording, coding, and editing activities. Then the data may be converted to a form that can be entered into a computer system. Data entry activities have always been a bottleneck in the use of computers for transaction processing.

2. Transaction Processing:-

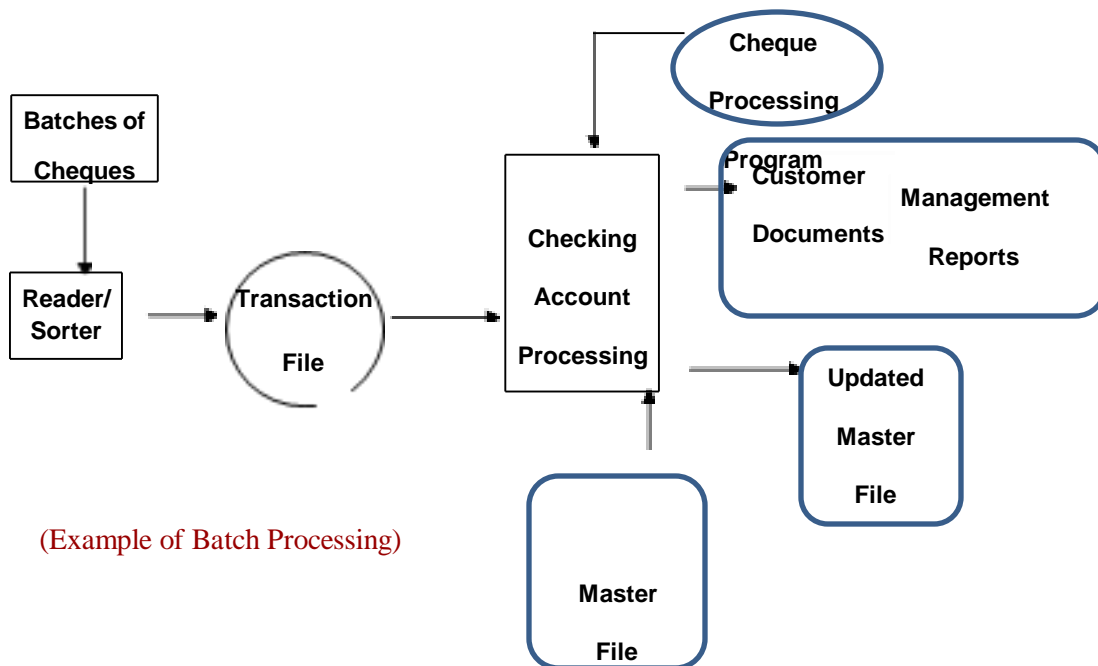
Transaction processing systems process data in two ways.

- a) Batch processing
- b) Real-time processing

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a) Batch Processing:

In a batch processing system, transaction data is accumulated over a period of time and processed periodically.



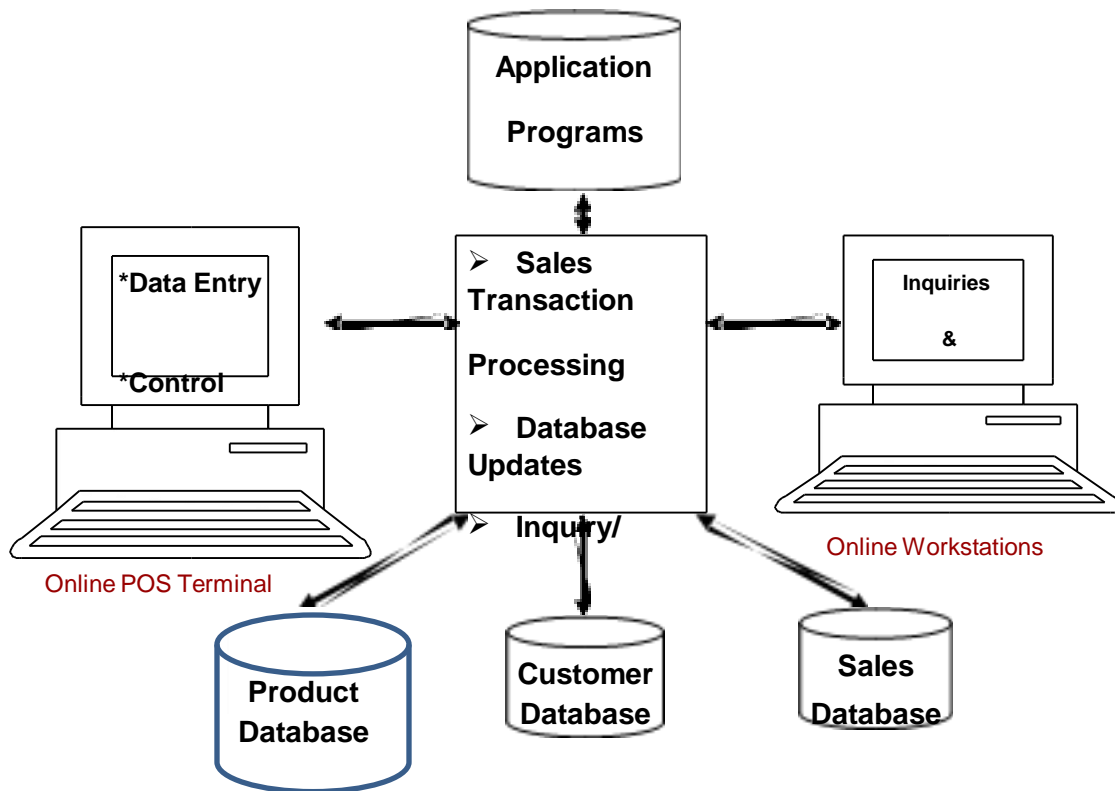
It usually involves the following activities.

- Gathering source documents originated by business transactions, such as sales orders and invoices, into group called batches.
- Recording transaction data on an input medium , such as magnetic disks or magnetic tapes.
- Sorting the transactions in a transaction file in the same sequence as records in *a sequential master file*.
- Processing transaction data and creating an updated master file and a variety of documents (such as customer invoices or paycheques) and reports)

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- ❑ Capturing and storing batches of transactions data at remote sites, and then transmitting it periodically to central computers for processing. This is called remote job entry or RJE.

b) Real-time Processing:



Real-time Processing involves the following.

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- Real-time processing systems process transaction data immediately after they are generated and can provide immediate output to end users.
- In full-fledged real-time processing systems, data is processed as soon as it is originated or recorded, without waiting to accumulate batches of data.
- Data is fed directly into the computer system from online terminals, without being sorted, and it is always stored online in direct access files.
- Files and databases are always up to date since they are updated as and whenever data is originated, regardless of its frequency.
- Responses to end users' inquiries are immediate, since information stored on direct access devices can be retrieved almost instantaneously.
- Real-time processing depends on telecommunication networks of online terminals and computers.

3. File and Database Processing:-

File and database processing are the basic activities of transaction processing systems. These are also known as file and database maintenance.

This term emphasizes that an organization's files and databases must be maintained by its transaction processing systems so that they are always correct and up to date.

Transaction processing systems update and make changes to corporate databases, which are then used to

- a) Provide data needed to produce proper information products, and
- b) Provide data needed for further processing by management information systems.

4. Document & Report generation:-

The final stage in the transaction processing cycle is the generation of information products such as documents and reports.

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Documents produced by transaction processing systems are called transaction documents. There are various types of documents such as

- Action documents that initiate actions or transactions on the part of their recipient. For e.g., a paycheque authorizes a bank to pay the customer.
- Information documents relate, confirm or prove to their recipients that transactions have occurred. For e.g., sales receipts, customer statements etc.
- Turnaround documents say that some types of transaction documents are designed to be read by magnetic or optical scanning equipment. Forms produced in this manner designed to be returned to the sender. For e.g., many computer-printed invoices consist of a turnaround portion, which is returned to the customer along with his/her payment.

Transaction processing systems also produce several types of reports and are used by managers. Such reports provide an audit trail for transaction control purposes. For example,

- Control listings, are detailed reports that describe each transaction occurring during a period. They are also called logs. For example, a payroll register lists every paycheque printed on a specified payday by a payroll system.
- Edit reports, describe errors detecting during processing. For e.g., invalid Account Number, missing data etc would be presented in edit reports.
- Accounting statements are such reports that legally document the financial performance or status of a business. For e.g., statements of cash flow, income statements etc.

5. Inquiry Processing:-

Many transaction processing allows us to use Internet and Web browsers or database management query languages to make inquiries and receive responses concerning the results of transaction processing activity. Typically responses are displayed in a variety of pre specified formats or screens. For e.g., checking balance in A/C and receive immediate response on PC.
