DFD

*) A Graphical tool, useful for communicat with users, Managers & other personnel
*) Useful for analyzing existing as well as proposed system.
*) Focus on the movement of data between external entities & processes, & between processes & data stores.
*) A Relatively simple technique to learn & use.

Why DFD ?

*) Provides an overview of
  - what data a system processes
  - " transformations are performed
  - " data are stored.
  - " Results are produced
  - Graphical Nature makes it a good communication tool between
    - User and analyst
    - Analysts & system designers.

DFD elements

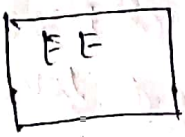
- Source/Sinks (External Entities)
- Data flows
- Processes
- Data stores

External Entities (EE)

*) A Rectangle Represents an EE
*) They either supply or Receive data
*) They don't process data

Source :- Entity that supplies data to the system.

Sink :- Entity that receives data from the system.



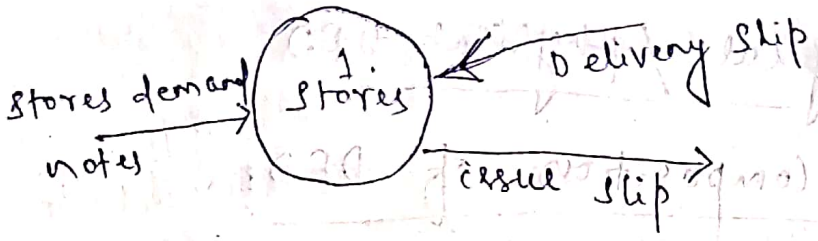
Data flows

*) Makes movement of data through the system - a pipeline to carry data
*) Connects the processes, external entities & data stores
*) Generally unidirectional ; If same data flows in both directions, double headed arrow can be used.

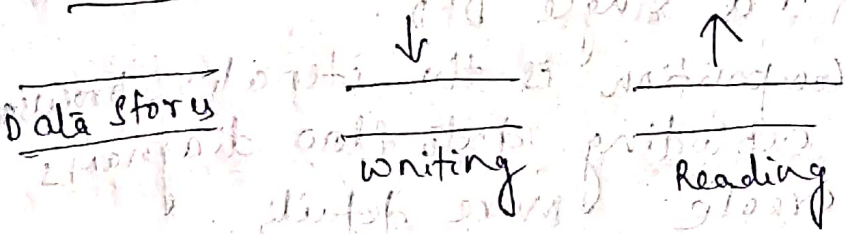
Data flow →

Processes

*) A circle Represents a process
*) Straight line with incoming arrows are input data flows
*) Straight line with outgoing arrows are o/p data flows.
*) labels are assigned to Data flow.



Data Stores



*) A Data Store is a Repository of Data
*) Data can be written into the Data Store depicted by incoming arrow.
*) Data can be Read from a data store depicted by an outgoing arrow
*) External entity cannot read/write to the data store.

Rules

Data can flow from	Data can't flow from
- External entity to process	- External Entity to External "
- process to External entity	- External Entity to store
- process to store & back	- Store to External Entity
- Process to process	- Store to Stores

Logical / physical DFD

Decomposition of DFDs

*) A system is too complex to be shown on a single DFD.

*) Decomposition is the iterative process of exploding data flow diagrams to create more details.

*) Level 0 DFD may be exploded into successive low levels of details. The next level of detail would be level 1 DFD.

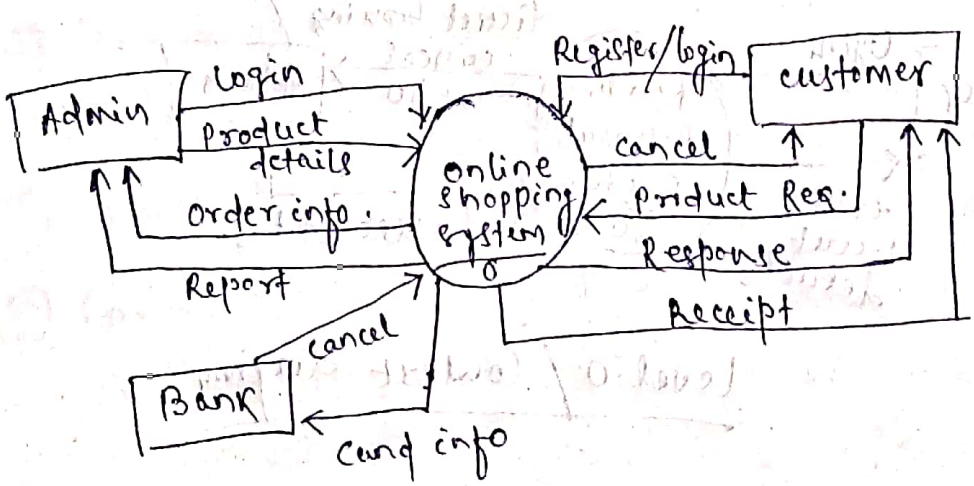
*) The DFD become linked together in a hierarchy, which would fully document the system.

Levels of DFD

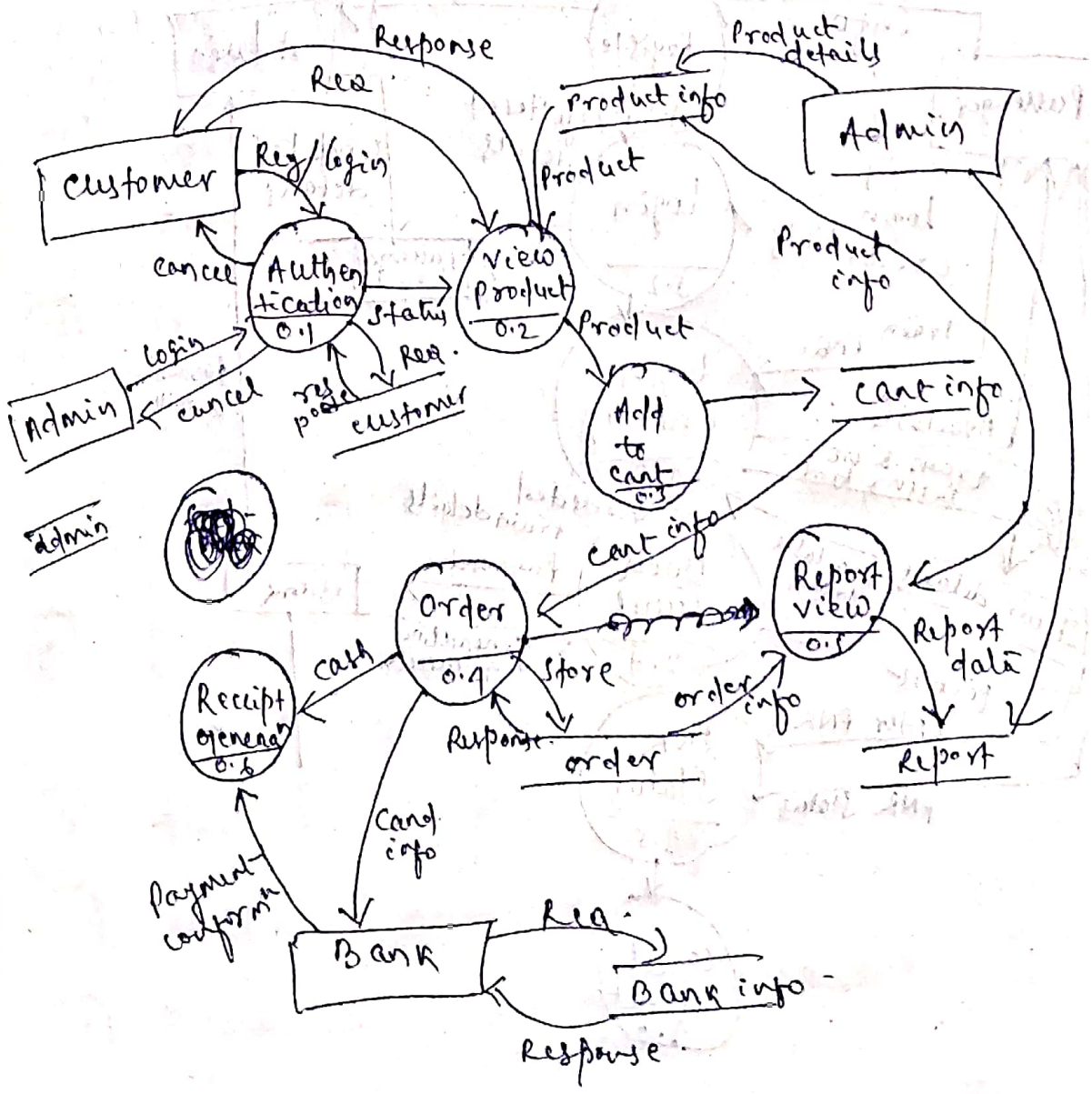
- Context diagram } only one process
- level 0 diagram }
- level 1 "
- level n "

Online Shopping ~~diagram~~:

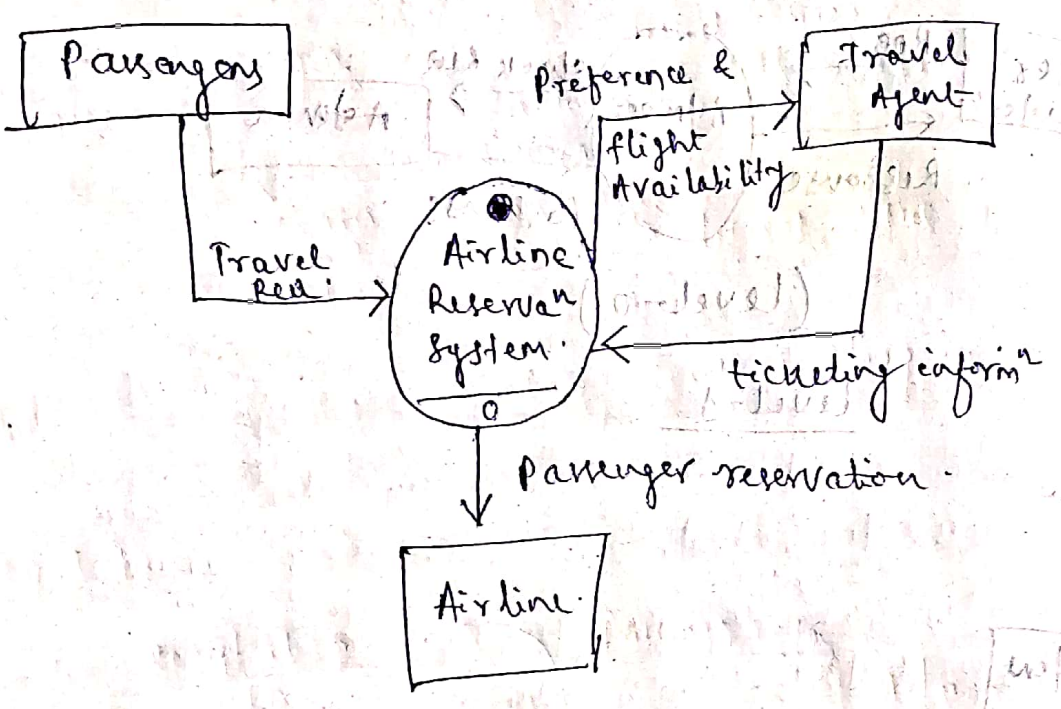
Level-0 / Context diagram:



Level-1

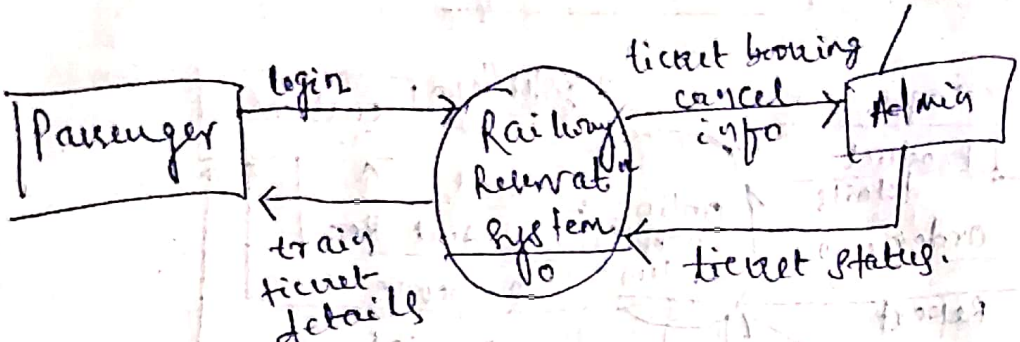


Air line Reservation System.



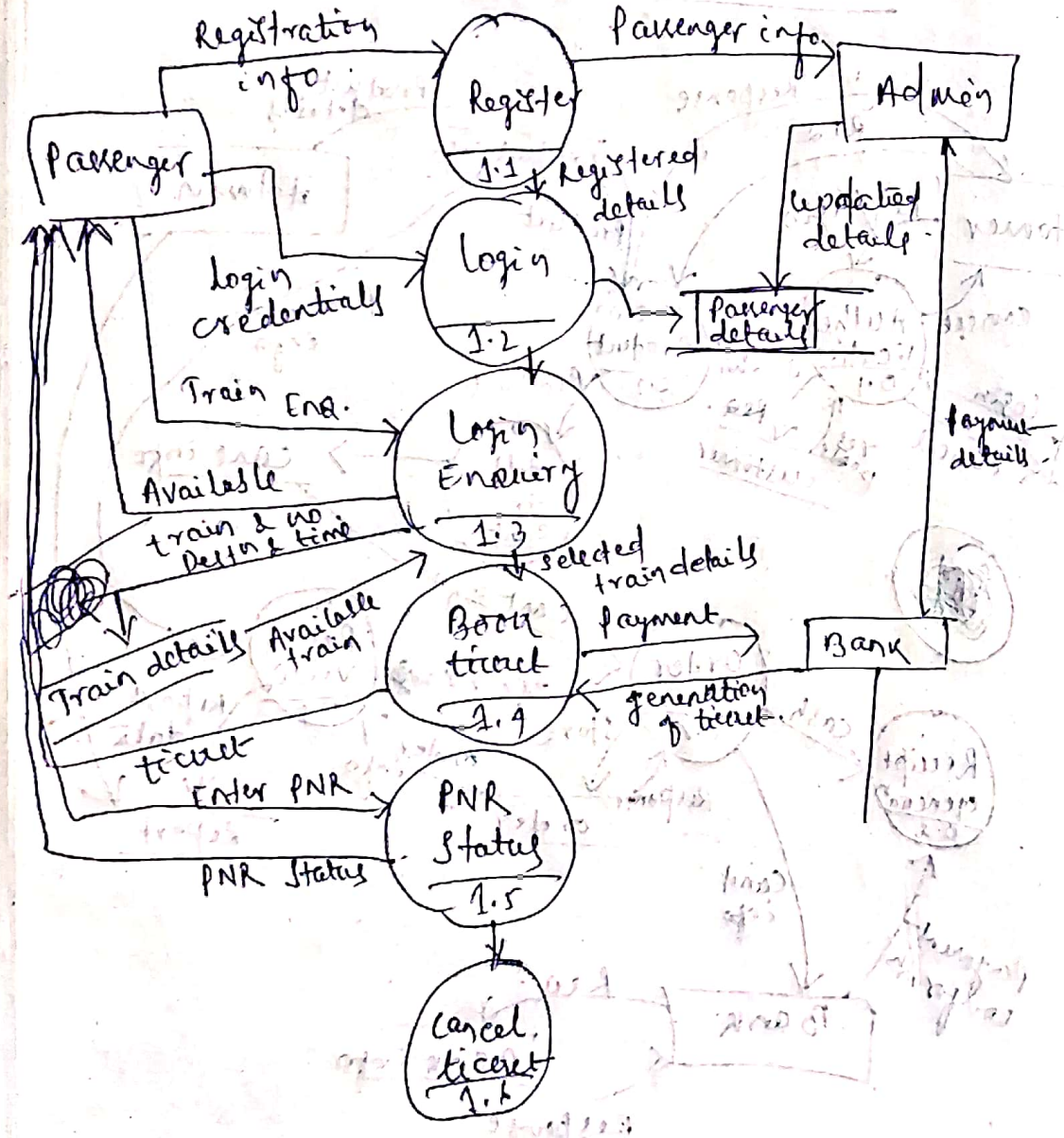
Context diagram.

online Railway Reservation

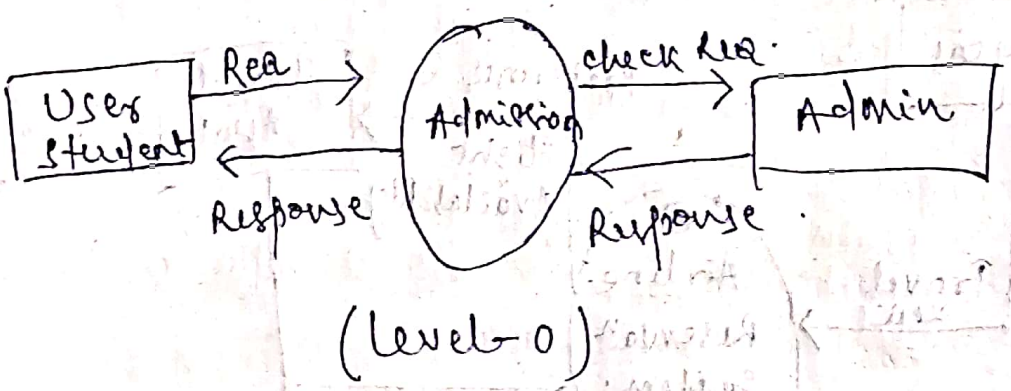


Level 0 / Context diagram

Level 1



DFD for University Admission System.



(Level-0)

Level-1

Student