Unit-1

System Analisis

Date
Page

* Hotel Managment system :
- Reservations and front desk support
- payment gateway
- Gift coupons / certificates :
- employee details
- Manager details
- salary / payroll
- Retail support
- Restaurant
- Accounts, invoices and reports
- Maintenace Management
- time keeping

* Movie ticket BOOking Managment :
- BOOking office
- online / offline
- Ticket generation
- Movies Manager
- Email & SMS confirmation (pay is cancellation)
- Unlimited usage
- Responsive & varied design
- payment options :

I MIS Lec

* **Data :**
  It is raw facts.

* **information :**
  collection of data.

* **system :**
  a set of elements and componet that interact accomplish goal.
  a combination of componenet working together.

* **information system :**
  a set of inter related element or componets that collect (input), manupulate (process) and dinsseminate (output) data and information and provide a feedback maccanizm to meed an objective.

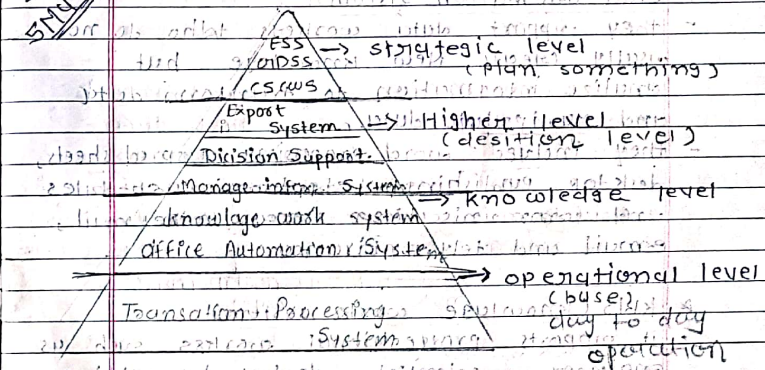
* **system elements :**

1. input
2. process maccanizam
3. output

system	system elements			Goal
	I/P	process	O/P	
Movie	Actor, director, screenplay staff.	Editing, special effects, distribution	Movie studio	Entertainment

(M.I.S.P)

* **types of system :**



1 Marks

* **Data :**
  It is raw facts.

* **information :**
  collection of data.

* **system :**
  a set of elements and componet that interact accomplish goal.
  a combination of componenet working together.

* **information system :**
  a set of inter related element or componets that collect (input), manupulate (process) and dinsseminate (output) data and information and provide a feedback mecanizm to need an objective.

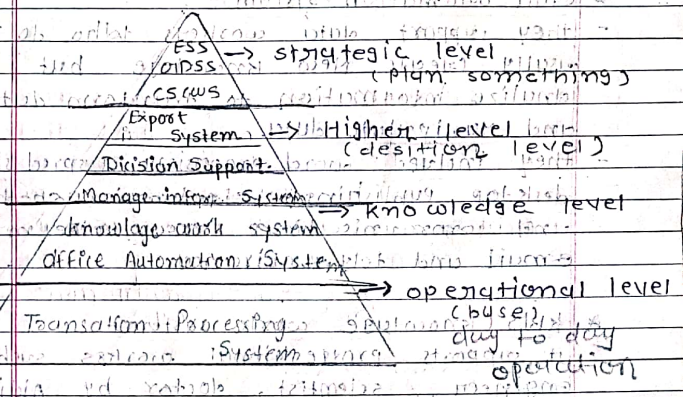
* **system elements :**

1. input
2. process mecanizam
3. output

system	system elements			Goal
	I/P	Process	O/P	
Movie	Actor, director, screept, staff.	Editing, special effect, distribution	Movie	Entertainment.

(M.I.M.P) SMART

types of system :



* TPS
- they computeriser IS that are developed process large amout of data for routine busness transaction such as pay role and inventory.
- the systems are boundry spanning system that permits orgnization to interact with external environment.
- they are day to day operation of business.

* Office automation system :
- they support data workers who do not usally create new knowlege but analize information to transform data and manipulate data.
- they inclued word processing, spred sheets, desktop publishing, electronic shedules and communication tree voice mail, e-mail and tely contirancy.

* KWS (knowlage work systems)
- it supports professional workss such as engineer, selentist, doctor by aiding them in the efforts to create new knowsledge.

ex computer added design system
virtual reality system.

* MIS (Management info
- MIS includes transaction prodessing system (TPS).
- they are computerized information system that work for the purpose of interaction between people and computer.
- it is broader spectrum organizational task them TPS which includes decision analis and decision making.
- they share common data base.

* DSS
- this system depends on a database as a resource of data.
- this system emphsizes the support of desicion making of analysis.
- finantional planning with what it analisis.

* expert system (artitisial system)
- this system capture and usage the knowlage of human experts or experts for solving particular problem in an organization.

outcome yearly.

1 Mark

* GDSS (Group decision support system):
- they are intented to bring a group to gether to solve the problem with the help of various supports such as polling, questionary, brings storming and scnario question.

* CSCWS (computer supported colobrative work system)
- it include software support called groupware for team colobrashion via network computer

* ESS (Executive support system)
- they help executives oraganize their interaction with external environment by providing graphics and communication technologis in exisible places such as board rooms or personal corparate office.

M.2.M.9

* System Anulisis:
- a system anulisis is an IT Prottesional who specialized in anulisis, designing and implimanting information system.

5 Mark

* three primary role of system Anulisis:
1. as a consultnt
2. as a sporting expert
3. as a Agent of chynge

(1) system analisis as a consultnt:
→ SA intirately add as a consuting to humyn and bumess does may be higen specitically to address information system cissue within a business.
* Its Advantuges becacuse outside pepole can bring with them a fresh perspective that other people in a organization do not posisiv.
* It is also disadvantage because the outsider can never know the true organizational culture.

(2) SA sporting expert
→ In this role an analis draws on protesional expenties consuling computen hardware and software and their usage in the business. It involes a small modification or desision affecting a single depart- ment

- you are not managing project here, but you are serving as a resorsis for those who are

1 Mark

(3) SA as Agent of change:

→ Most comprehansive and responsible role that SA take is the agent of change whether internal or external.

- it define as a person who serves as a catalyst (medium) for change, developed a plan for change and coorks with athors in facilituting that change.

★ Qulities of system Analis:

1. problem solver:
- key person who viewss the analisis for the person as a challange and solve the problem.
- when must chessarray Analisied must be able to systematically the system through tools, techniques and experience

Imp.

2. communication: (communicater)
- capable of ralative meaningfully to other people over exted period of time.

3. strong person and profesional ethics:

4. self deciplin and self motivate:
- who is able to manage and cordinate other people as well as boundless projects resorses.

5 Mark Answer

(software development approch)

SDLC (software development life cycle)

1. Identify problems, aporthunitys, objectives.
2. determining humun information requirment.
3. Analizing system needs.
4. designing the recommended system.
5. developing and documenting software.
6. testing and mainteining the system.
7. implementing and evaluting the system.

→ (1) identify problems, aporthunitys, objective:
- Analisis as consultsting identify the problem, aporthunites and objective.
- this stage is critical to the sucess of the project because one points to

waste subsequite time addressing the wrong problem.

→ people involved

co-ordinate the problem
- user
- Analyst [pin-point the problem]
- system manager.

- opportunity :
  are seducation belive that it can be improve with computerized informatio system.

- Identity objective :
  [an important component first phase
- Analis first descover what the busness to trigg to do.

→ Activity :
- interviewing user managment.
- summarizing knowledge obtain.
- estimanting the scope of the project.
- documenting the result.

→ output :
- viability report containg problem.

Physibility

detination and obj. summerice from which managment can make desion on whether to proslve with the prophose the problem.

→ (2) determining humun information requiremon
- determining humun needs of the users involed, using verity of tools to understand how users interact in the work context with the currunt information system.

→ pepole involed :
1. user
2. Analyst, tepically operational manager and operactional

→ Activity :
- interview
- sampling and investingeting hard data,
- questionnaires
- Observe the desicion maker behaviour and environment.
- prototyping (small modules)
- learn the who, what, where, when, how and why of the current system.

→ Output :

1. Analsty understand how user acomplished their work when intracting with computer and within to know how to make new system more usable and more system.
2. Analyst should know business function and how the complete information people i goal information and procedure involve.

→(3) Analizing system needs :

- Activity involved :
  - create data flow diagram - to chart input process and output of the business function or activity diagram or sequence diagram to show the sequence or other diagram.
  - complete the data dictionary.
  - Analized the structral desiion for which condition condition alternative, action and uction attern rules can be determine.

1. Prepare and present the system proposal.

- Output :
  - system Analist prepare a system proposal that summarise what has been found out about the users, usablity and usefullness of current system
  - recommendation what should be done.
  - if one of the recommendation is acceptation to menagment the Analist proceed a long that course.

→(4) designing the recommended syst:

- system analisty design procedure for user to help them accurattly enter data so that data going into the system are correct
- analist provied for users to complit effective input to the system by using a teqniq of good form design, web, screen design

- Phical user interface includes a key bord, on screem Menu and verity of graphical user interface that wes a mouse or touch screem.
- the design face also include desining data base that will store much of the data needed for desicm making any organization.

* Activity:

- designing the ui procedure
- HCI design (Humun computer intraction)
- design control system
- design file or database

* Output:

- model of the acutal system

→(5) developing and documenting software

Activity:

- system analist works with programmer to developed any original software.
- work with users to developed effective documetation.
- programmers design, code and remove systentical error from program
- document software with help file, procedure menual and website with FAQ (Frequently ask question).

Output:

- computer programm or software
- documentyion (system)

(6) testing and Maintaing the system:

- Before the system can be use it must be testting
- A series of test to pin point problem is run first suith sample data and eventuly with acrual data from the current system.

Activity

- test the IS cintor
- maintance system.
- maintance documetation

Output :

- problem it any (solve problem)
- update your programme.
- documentation.

(7) Implementing and evaluting system:

Activity :

- train the user to handle system
- analist plans smooth conversion with old or system to new sytem (includes file from old format to new format. Building a database, installing equipment and brining the new systems into production.)
- review and evalute the system.

Output :

- installed the system

UMLAT SAP

* integrating new technages into traditional system.

1. e-commers and web system
2. ERP (enterprise resorce planning) system
3. wireless system
4. open source software

- An alternative of traditional software development where proprietary code is hidden from the user is called open sourse software.
- this software is free to distribute, share and modify.

exc = LINUT OS, web server, Mozila firefox.

* case tool
(Computer aided software engineire)

- case tools are productivity tool for system Analist that have been creative explicitly to improve the routine world threw the use of atomated support.

2 Mark

* Resone for using case tool.
1. increse analist productivity
2. improve analist communication.
3. integreting life cycle activity.
4. accurately excesing maintence changes.

CAD - computer added design

example

1. visible analist : system analist to graphical planning, analisis and design to buid complex application.
2. Microsoft visio allow user to draw and modify the diagram.

case tool classification :

1) upper CASE tool
   - Analysis & design
2) lower CASE tool
   - generate program from case design.
3) integreated CASE tool
   - Both upper and lower case function.

- integreated CASE
  - upper case
    - planning
    - Analysis
    - Design
  - lower case
    - Implemetation
    - testing
    - maintanace

(1) Upper CASE Tool.
- allow analist to create and modify system design
- all the information about the project is stored in Encyclopedia, call the CASE repository, is large collection of records, elements, diagram, screen, reports and other information, Multi
- Analisis report may be produce useing the repository information to show wether the design is incomplete or contentserror.

(2) LOWER CASE tool
- is is use to cremerate computer source code.
- source code is usually cemerated in several language.

Advantage:
1. quicker than writing computer progr
2. time spent on maintance decreases.
3. code can be cemerated in more than one computer language.
4. cost effetive for system purchase from third party vender.

5. Generated code is free from computer program error.
quickly doing work

* AgilP Approach:

- It is software development approach based on value, principle, and core practices.
- The be four values are:
  1. communication
  2. simplicity
  3. Feedback
  4. courage

- Agile method can an sure successfull complishion of project by adjusting the important resouse of time, cost, quility and scop.
- When this four control variable are properly included in plan, there is a state of balance between the resources and the activity needed to complete the project.

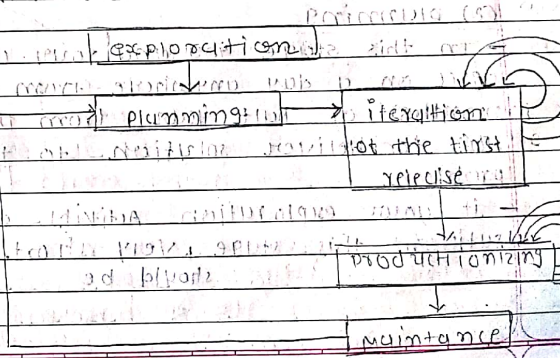
2 Mark

FOUR principle:

1. short release
2. The 40-hour week cycle
3. hosting on onside customer.
4. using pair programming (driver and observer)

* development process for an agile project:

1. Stages:
   1. exploration.
   2. planning
   3. iteration to the first relies.
   4. productionizing
   5. Maintance.



(1) exp
- an exp
experimentry
- the point is
retine a stories
completing Astimate the amount of
time it will tuck to build a
solution into the system you are
plan.
- This stage is all about adopting a
playful and quries attitude to word the
world environment, it's problem,
technologies and people.
- with this approch you have assemble
team and Assess team membes skill.

(2) planning
- In this stage you and your customer
agree on a day anywhere from two
months. or half year from the current
day to deliver solution to the business
problem.
- It your exploration Activity whole
satisfiant this stage very short.
should be

(3) iteration to the first release:
- tipically this are iteration (cycle of
testing, feedback and change) at about
three week in duration.
- you will be pushing your self to setch
out the Antire Architecture of the
system (outline).
- whole: written
(4) function test at end the iteration.

(5) productionizing:
- the product is release in this phase,
but may be improve by
ediing other features.
- getting a system into production
is the exiting filling.
- one

(6) maintince:
- onces the system may be release it takes
needs to be runnig smothly.
- New features may be added, customer
suggetions may be consider and the
team members may be rated.
- you are now in "keeper of the flame"
over the gather them playfull one
experience during exploration.

(2) exploration & writing user stories)

- on exploration customer also are expemetry with writing user stories
- the point is to get to customer to retine a stories so that you can completing Astimat the amount of time it will tuck to build a solution into the system you are plun.
- This stage is all about adopting a playful and quries atitude toword the world environment, it's problem, technologies and people.
- with this approch you have assemble team and Assess team membes skill.

(2) planning

- In this stage you and your customer agree on a day anywhere from two months, or half year from the current dait to deliver solution to the business problem.
- it your exploration Activity whole sutillant this stage, very short. should be

(3) iertion to the first release:

- tipically this are iteration (cycle of testing, feedback and change) of about three week in duration.
- you will be pushing your self to setch out the Antire Architecture of the system (outline).
- whole: enter to run customer written return
- (4) function test at end the iteration.

(5) productionizing:

- the product is release in this phase, but may be include improve by eding other features.
- getting a system into production is the exiting filling.
- ons

(6) maintunce:

- onces the system may be release it takes to needs to be runnig smothly.
- New features may be added, customer suggetions may be consider and the team members may be rated.
- you are now in "keeper of the flame" over the gather them playfull one experience during exploration.

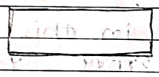
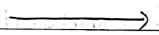
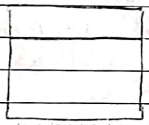
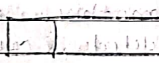
Unit-3

Using Data flow diagram (DFD)

* It is graphically characterise data processes and flows in business system.

⇝ It depicts 1. input
depict 2. process
3. output

⇝ The four basic symbols in DFD are as follows :

symbol	Meaning	Example
	Entity	student
	Data Flow	student info
	process	1.0 student Record
	Data store	D1 student master

* 1. external entity :
it represents a human system or sub-system.

- It may also represent other department or a business or a machine.
- It should be name with noune.

* 2. process :
A process is a business Activity or function where the manipulation and transformation data take place.
- represents work begin perform in the system.

* 3. Data store :
It represent the storage of persistant data require produce by the process.
- they are usully given a unique number such as D1, D2, D3 ....

* 4. Data flow :
It represents the flow of information with its direction represented by an arrow have that shows at the end of flow connecter.

Unit-3

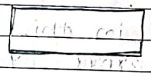
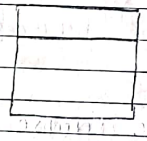
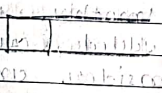
Using Data flow diagram (DFD)

Date
Page

* It is graphically characterise data processes and flows in business system.

⇝ It depicts 1. input
2. process
3. output

⇝ The four basic symbols in DFD are as follows:

symbol	Meaning	Example
	Entity	student
	Data Flow	student info (mutton)
	process	1.1 student Record
	Data store	D1 student master

* 1. external entity:
- it represents a human system or sub system.
- it may also represent other department or a business or a machine.
- It should be name with noune.

* 2. process :
A process is a business Activity or function where the manipulation and transformation data take place.
- represents work begin perform in the system.

* 3. Data store :
It represent the storage of persistant data require produce by the process.
- they are usully given a unique Number such as D1, D2, D3 ....

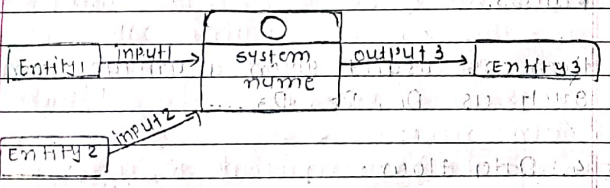
* 4. Data flow :
It represents the flow of information with its direction's represented by an arrow have that shows at the and of flow connecter.

DFD level :

(1) context level DFD
(2) 0 (zero) level DFD
(3) 1st level DFD.

imp 5 Mark → Creating context level DFD:

(1) The highest level in DFD.
(2) contains only one process representing the entire system.
(3) the process is given the Number zero.
(4) All external entites as well as major data Flow are shown.

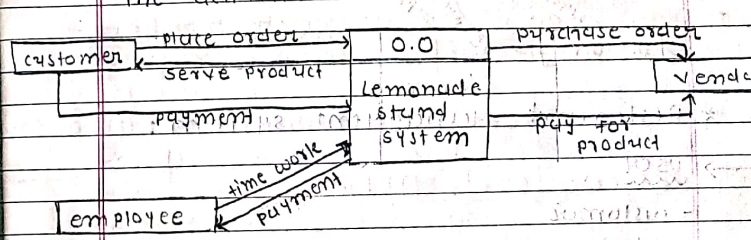


ex * lemonade stand system :

→ Create a list of activites.

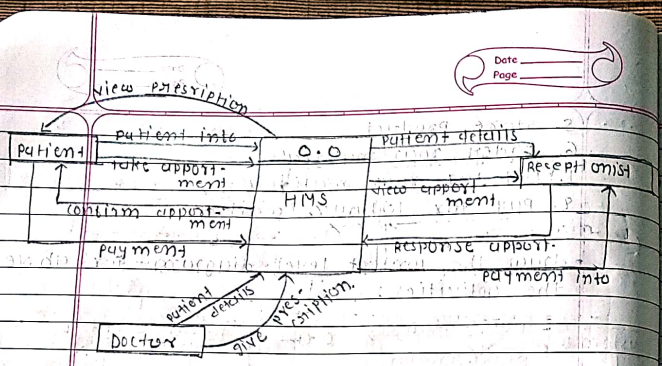
1. customer order.
2. serving the order
3. payment
4. produce product
5. store product
6. order raw matireals
7. pay for raw matireals
8. pay for labour. (waiter)

- draw the context level diagram for abo the activities :



* Hospital Management system :

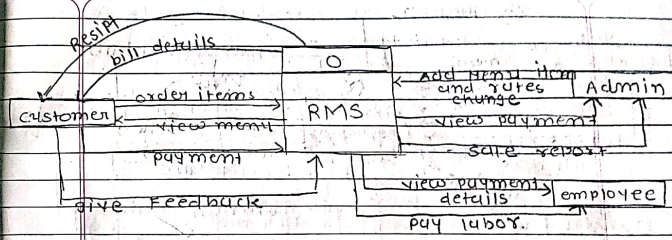
1. give patitem details
2. take the appoiment of patient.
3. pay the bill
4. give priciption information.
5. confirm appoiment.
6. prieco appoiment
7. Response appoinment
8. payment info.



* Restorant Managment system :

→ user
- customer
- Admin
- Employee

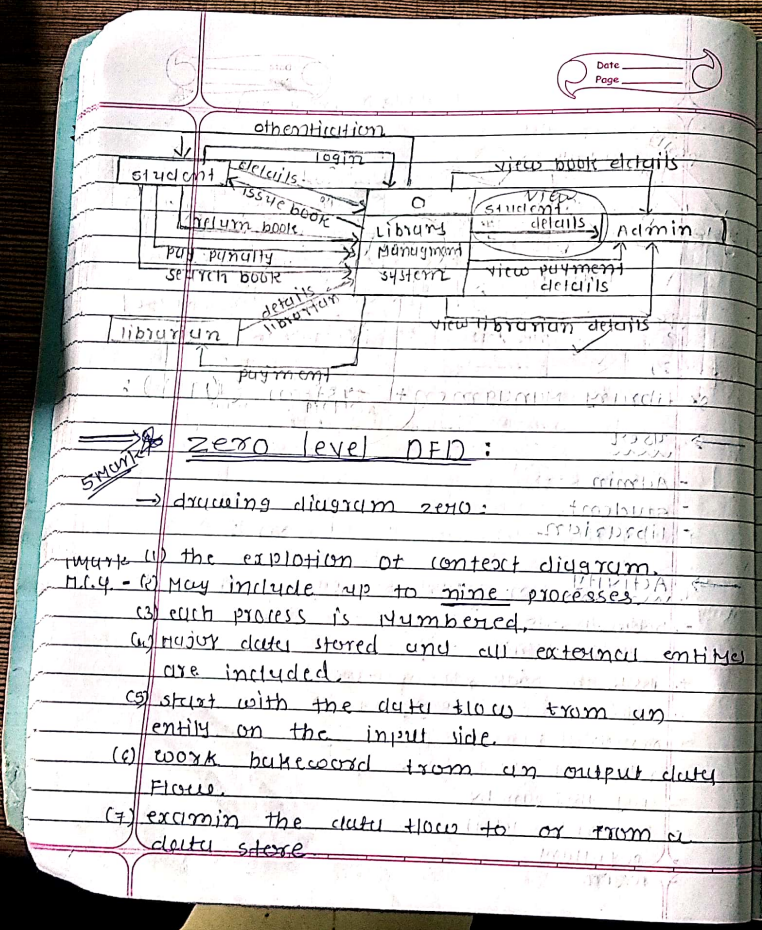
→ Activity
- order
- payment
- Feedback
- Menu detail
- payment details (sales details)
- Report
- updating menu details
- order details
- pay labour.



* library Mynygment system (UTU) :

→ user
- Admin
- student
- librarian

→ Activity
- book details
- student details
- issue the book, serch book
- authentication (Registrations)
- renew the book
- return the book
- pay the panulty
- librarian details
- pay salary
- login

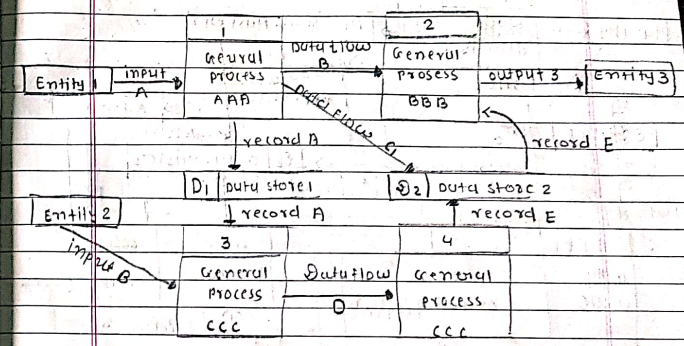


Zero level DFD :

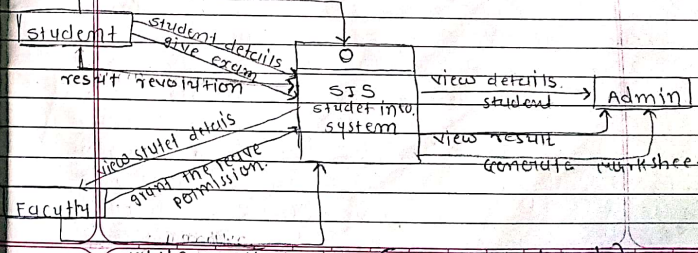
→ drawing diagram zero :

(1) the explotion of context diagram.
(2) May include up to nine processes.
(3) each process is numbered.
(4) major data stored and all external entities are included.
(5) start with the data flow from an entity on the input side.
(6) work backward from an output data flow.
(7) examin the data flow to or from a data store.

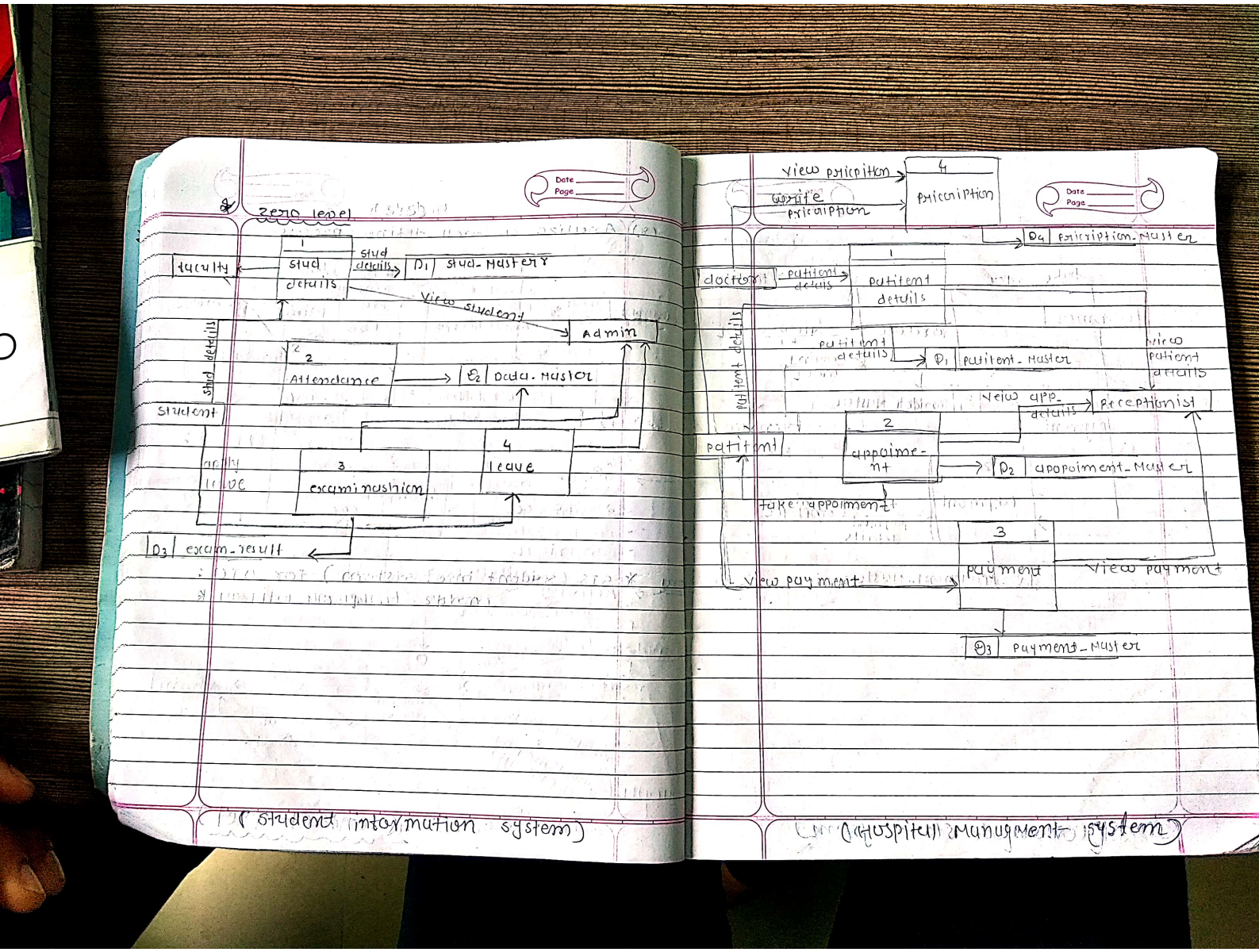
(8) Analize a well define process

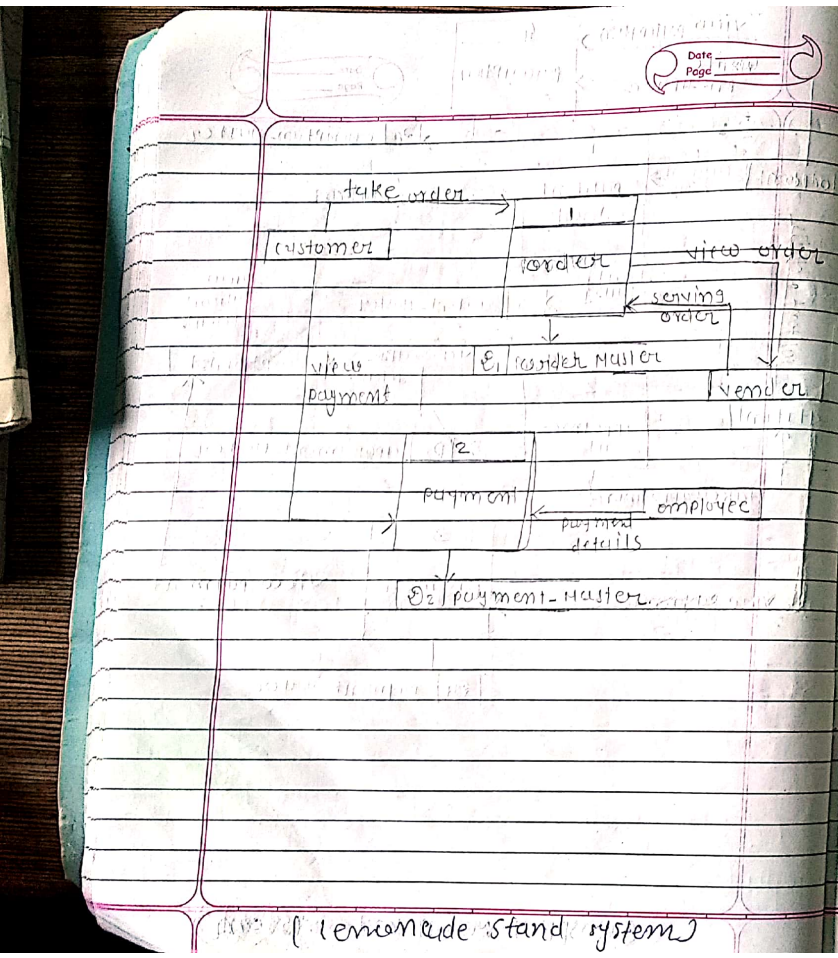


* SIS (student into system) for UTO :

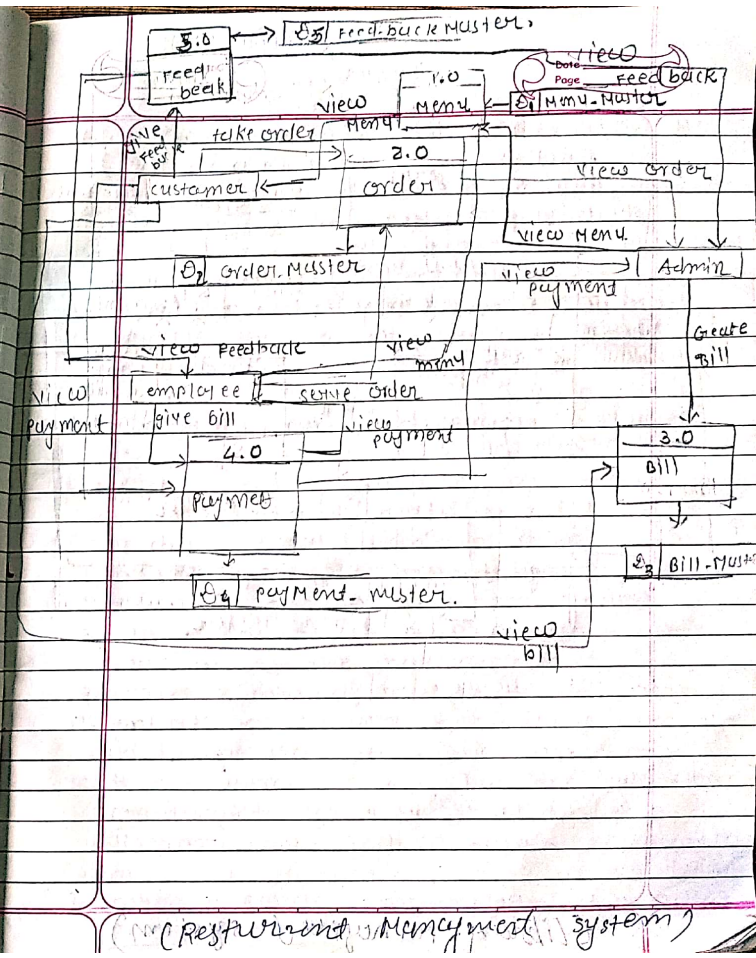


(context level)

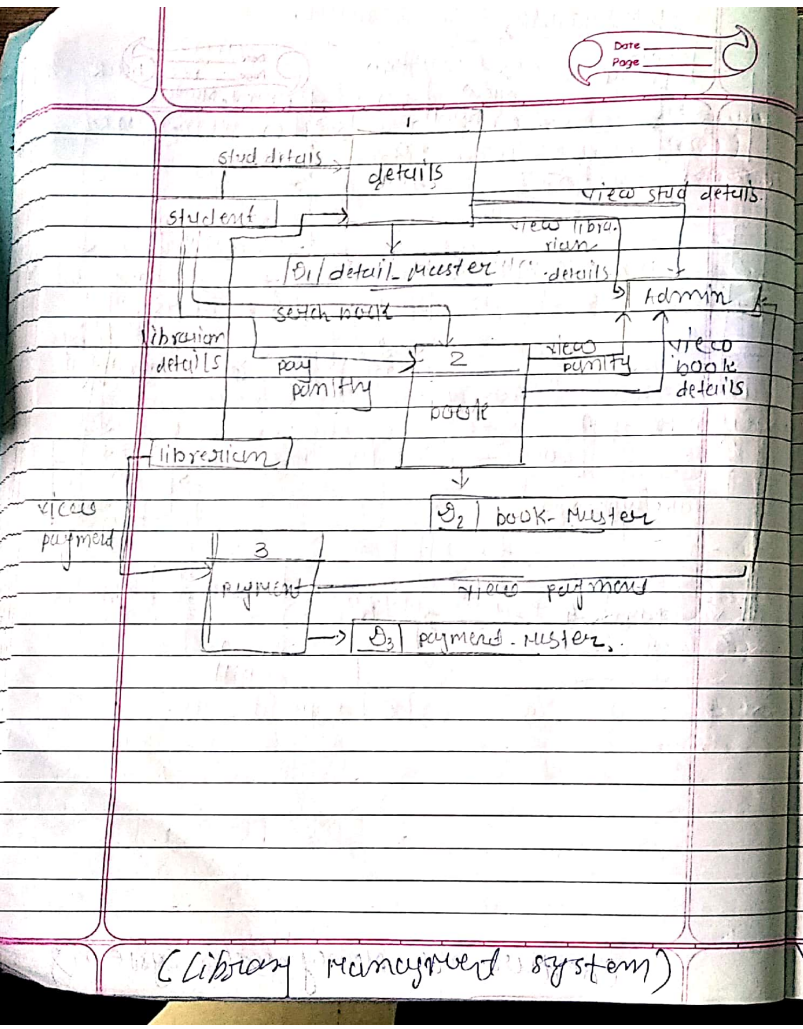




(Lemonade stand system)



(Restaurant Management system)



(Library management system)

* Data flow diagrams level :

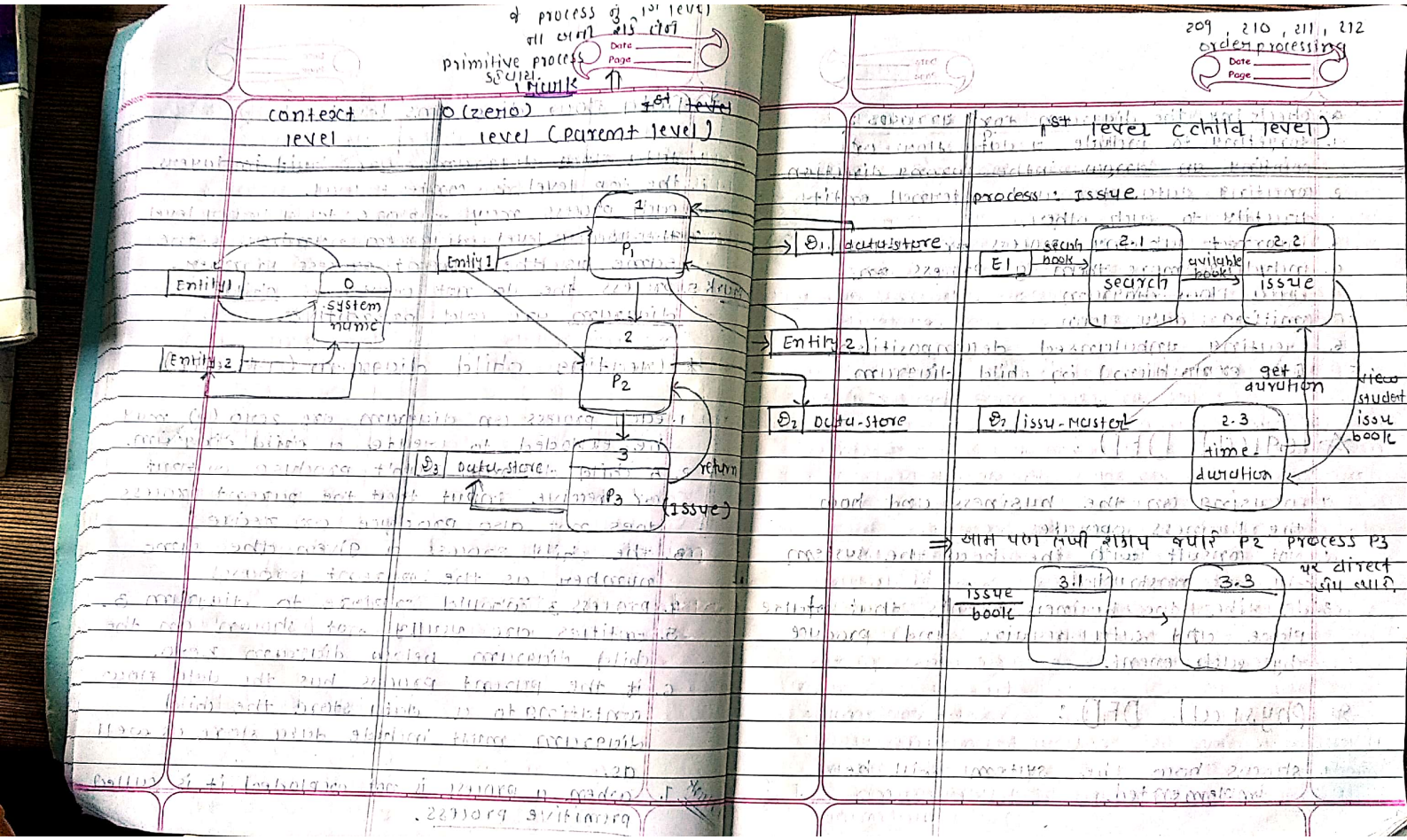
1. data flow diagrams are buid in layers.
2. the top level is context level.
3. each process may explore to a lower level
4. the lower level diagram number is the same as the parent process number.
5. process the do not create a child diagram are cold premitive.

1 Mark

* Creating child diagram (1st level)

1. each process on diagram are zero (0) may be exploded to create a child diagram.
2. A child diagram can't produse output or receive input that the parent process does not also produce or recive.
3. the child process a given the same number as the parent process.
4. process 3 should explore to diagram 3.
5. entities are usully not shown on the child diagram below diagram zero.
6. if the parent process has the data flow containing to a data store the child diagram must include data store as well as.
7. when a process is not exploded it is called premitive process.

1 Mark



Checking the diagram for errors:

1. forgetting to include a data flow or pointing an arrow in the wrong direction.
2. connecting data stor and external entity directly to each other.
3. incorrect labeling process or data flow.
4. including more than 9 process on data flow diagram.
5. omiting data flow
6. creating unbalansed decomposition (or explosion) in child diagram.

Logical DFD:

1. Focusing on the business and how the business operates.
2. Not consult with the how the system will be constructed.
3. describes the business events that ~~m~~take place and data require and produce by each event.

physical DFD:

1. shows how the system will be implemented.
4. depicts the system

partitioning DFD:

It is the process of examining a DFD and determine how it should be devided into collection of Menual procedure and computer programs.

It Analis each process to determine wether it is Atomated or Menual procedure.

⟹ Reason for partioning:

1. dittirent user group:
   They are the process performed by several dittirent user group ottem and dittirent physical location in the company.
2. Timing
   Process that execute at dittirent time must be in sapret Program.
3. similar task
   IF two processes perform similar task they may be group in to one computer program.

4. efficiency :
several batch processes may be included in the same program for efficiency.
eg: If a series of reports need to use the same large input file, producing them together may save considerable computer run time.

5. consistency of data
several processes may be included in the same program or job stream for consistency of data.

6. Security :
Process may be partition into different program for security reason.

page no = 206 → table

Event response table :

when creating a DFD, input data flows from external entity this called a trigger because it start a activity of a process and output data flows to an external entity is called as response because it is sent as a result of some activity.

determine which data filed or elements need to be keyed.

page no = 220

IMP ✱✱ Scenario

perfect pizza wants to install a system to record orders for pizza and chicken wings. when regular customer call perfect pizza on the phone they are asked their phone number. when a number is type in to the computer the name, Address and last order date is automatically brought (recall) on the screen. once the order is taken the total including tax and delivery is calculated. then the order is given to the cook. A receipt is printed.

occasionally, special offers (coupons) are printed so the customer can get a discount drivers who make diliveries give customer a copy of the receipt and a coupons. weekly totals are kept for comparion with last years' performance. write

1. functional requirement
2. context level DFD
3. zero level DFD
4. 1st level DFD for order and diliverd
5. event respone table (customer side)

electronic device repare management system an operator receives a request from a customer for repairing of electronic device to telephone or e-mail. the device is recive in the office for repairing by the customer after fixing the date and time through telephone or email. a repair Analis recoies the request and deter mines the types of repair needed by accesing a repaire code tiles. the Analist makes an entry of the request in the costomer repair order file and forcoord a copy to a technishian.

The technishian comple te the repaire and forcoord the order to the quility control depart ment. A quity control Analis test the customer device to verity that the problem has been resolved. the quity control Analist update the customer repair order file, and send one copy of the invoice bill to the customer and second copy to the head of the quity control depart-ment the customer makes payment by cash or cheque when he is deliver repair device by a dliverry man.