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2. I have neither impersonated anyone, nor have I been impersonated by any person for the purpose of assessments.

Signature of the Student : R Pandey 18/05/21

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CSPE41 - SE

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18/05/21

END-SEMESTER

Rajneesh Pandey

Question (1):

Waterfall Models for a Car Insurance company

Steps in waterfall models
- Communication
- Planning
- Modelling
- construction
- Deployment

(i) Communication

First, the requirements of the users and communication between the staff for the car insurance. that makes the policy a better insurance so that users can take this policy

(ii) Planning:

After communication between users, and policy makers, now comes the crucial part. Estimation of time to build the car insurance policy.

(iii) Modelling

Now, after planning the model will make important make in software development, giveing/suggesting.

some features of the insurance and functionality that will make model reliable for the users and make it easy for users to use it.

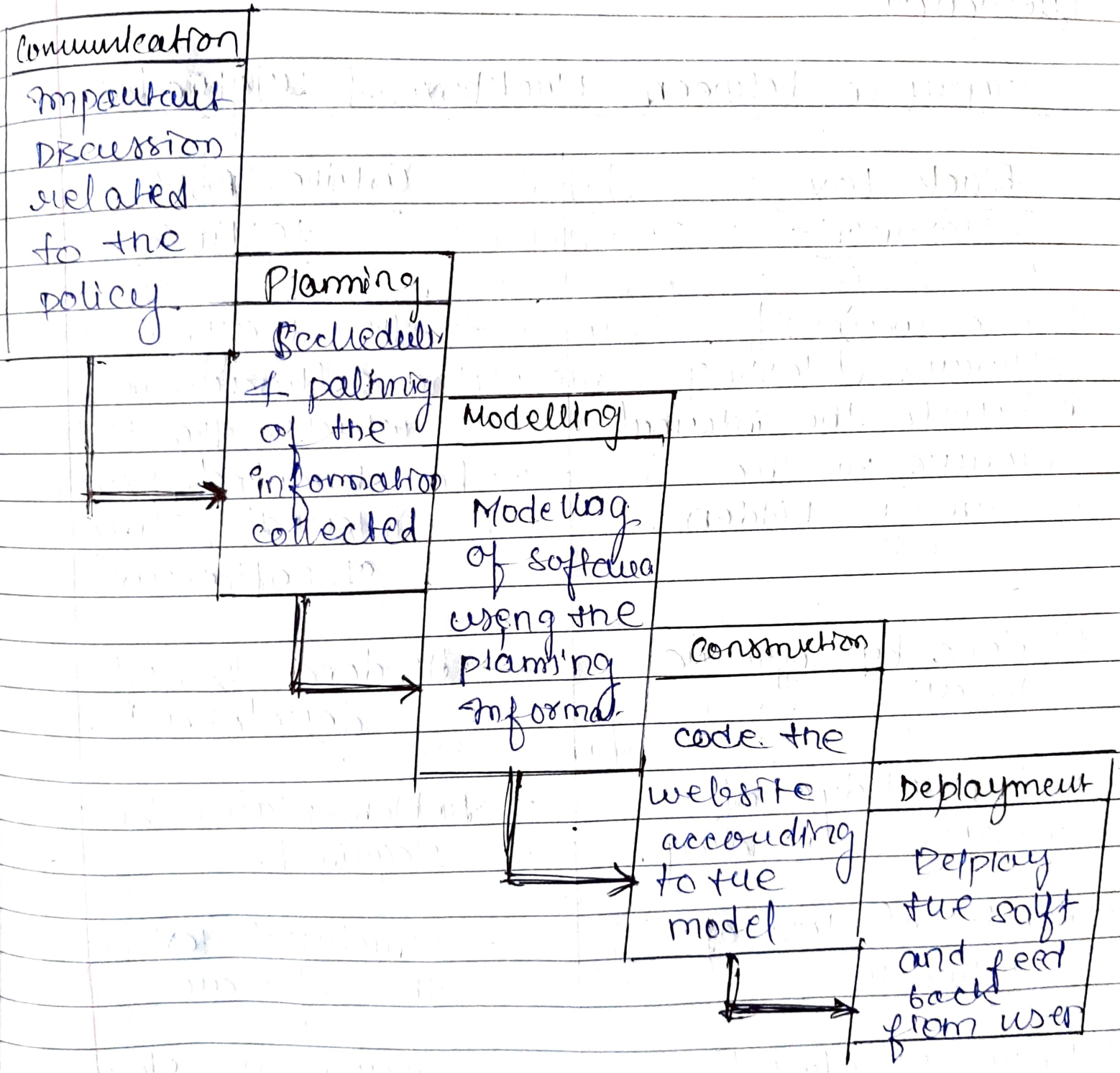
(iv) Construction

This step is involves the model to implement and make software adding all the features and functionality and components in the web/application for the user. The code should be written precisely so that in can be reliable. Also, the data & information regarding policy will also be uploaded on website

(v) Deployment

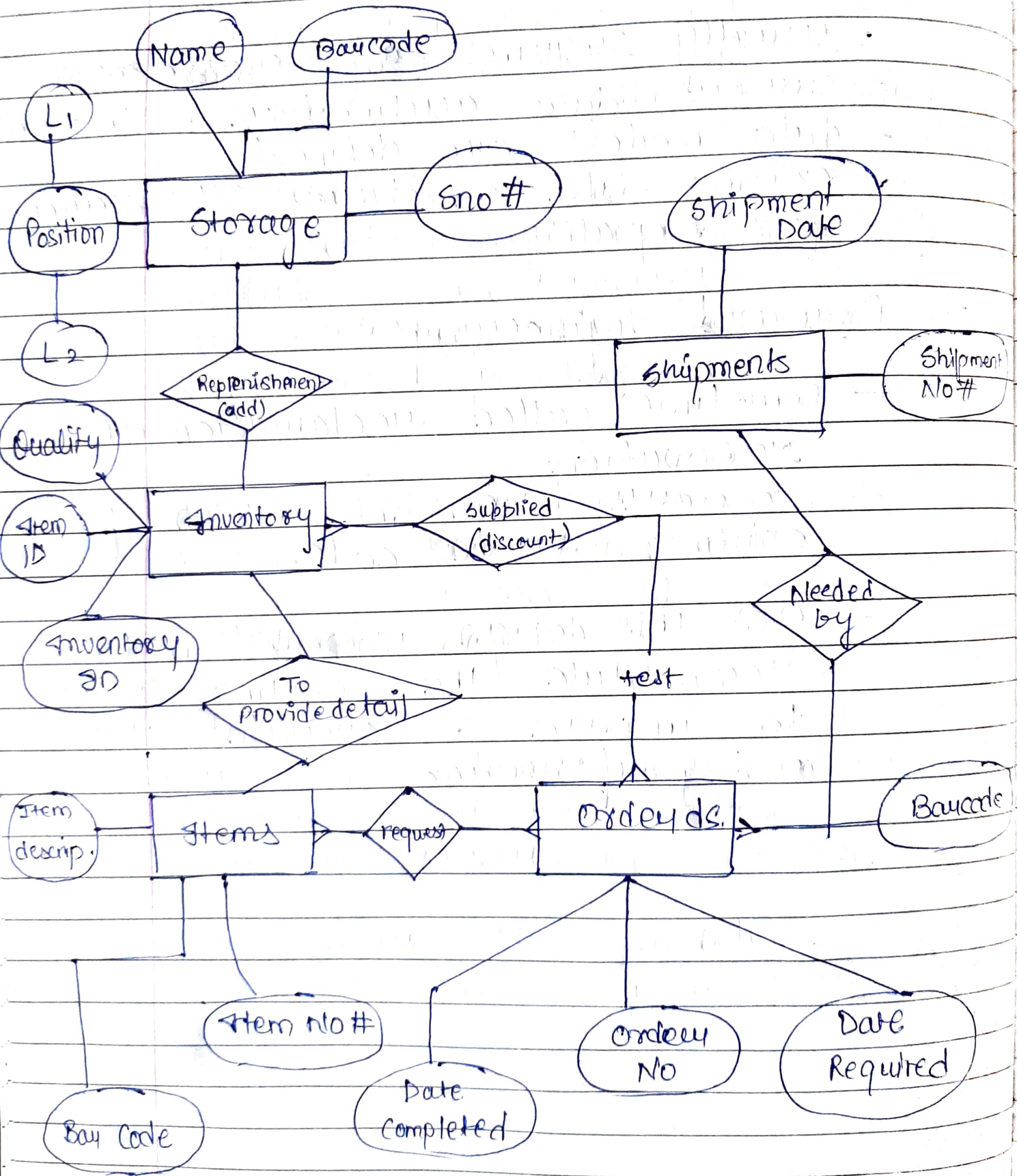
This step is the final step after website modelling is complete the software must be live for the use to use and check about the can insurance and do use them.
Also, after users uses the software the feedback is also important.

Visula of Waterfall model →


Communication
important discussion related to the policy.
Planning
Scheduling & planning of the information collected
Modelling
Modelling of software using the planning informa.
Construction
code the website according to the model
Deployment
Deploy the soft and feed back from user

Question 2

E-R Diagram for Inventory Management



Question (3)

SQA plandh & flow diagrams for # ONLINE RESERVATION RAILWAY SYSTEM

Purpose:

Main purpose of the Software Quality Assurance plan is to ensure production of high quality end software product according to specific requirements.

The Software Quality Assurance plan of the Railway reservation system

Management

Organization:

The organization consits of the supervisory comittee, major professor and developer & two formal technical inspector.

Responsibilities:

All the members have their responsibility to perform task to complete the the software and service available

Tasks

All tasks performed during the Railway Reservation system project are documented in the project plan

Standards:

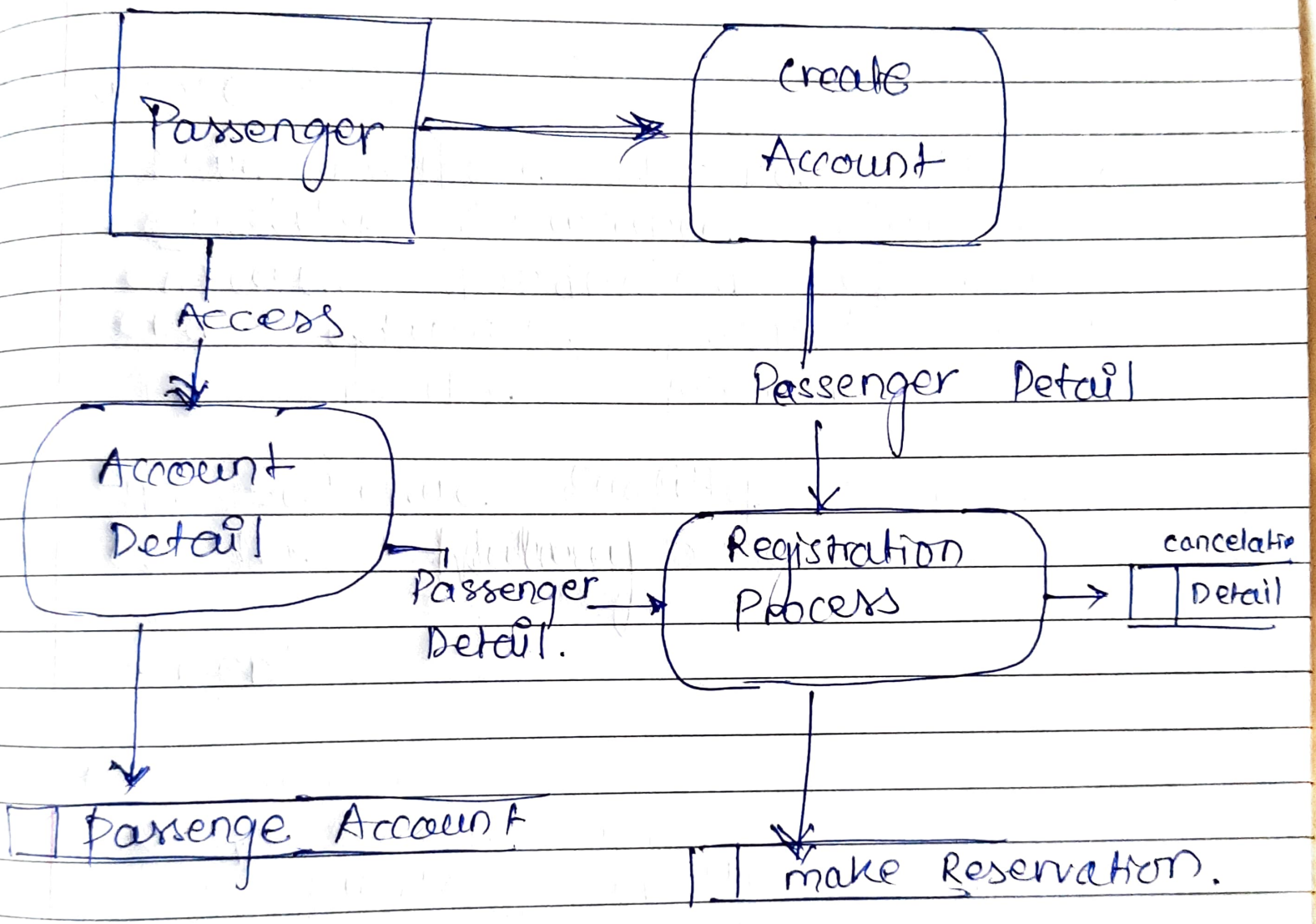
This includes software engineering process methods, activities and work items are monitored and comply against defined standard by the company procedure for error reporting and tracking are made. This can include some individual for testing and retesting after assigned period, including repeated tracking

Document that are needed to be made by SQA team are:
- purpose section
- reference section

Thus SQA activities listed above are performed at each stage of Railway Reservation system.

This ensure the quality of software is maintained.

Flow chart for Online Railway Ticketck Reservation system.



Question (4)

Compaiison between Blackbox & wi ite box test

Black box Testing	White Box testing
- Its the way of Software testing in which the internal structure or the programe is hidden code	- Its way of testing the software in which the testen - has knowledg about internal structure of software.
- Its done by software testers	- Its done by software developers.
- No knowledge of implement is req.	- Implementation knowled required.
- functional test of software	- Structural test of the software
- Know as closed testing	- Known as clear box testing
Types - Functional - non-functional - Regression	Types - Path - loop - condition.
Example seach something on google using keyword	Example by input check & verify boo

Designing Test Case for Merge Sort

Test case #	Ip-test	Expected (found, L)
(1) Empty list	—	— Error/false.
(2) Already sorted positive no. 2.	2, 5, 6, 7, 10	2 5 6 7, 10.
negative no. 2.	-2, -1, 0, 1, 3, 5	-2, -1, 0, 1, 3, 5
(3) Reverse sorted		
1. +ve no.	5, 3, 2, 1	1, 2, 3, 4
2. -ve no.	4, 1, 0, -3	-3, 0, 1, 4
(4) unique elements		
1.	1, 3, 2, 8, 5, 6	1, 2, 3, 5, 6, 8
(5) containing Duplicates		
	1, 2, 2, 8, 5, 3, 2	1, 2, 2, 2, 3, 5, 8

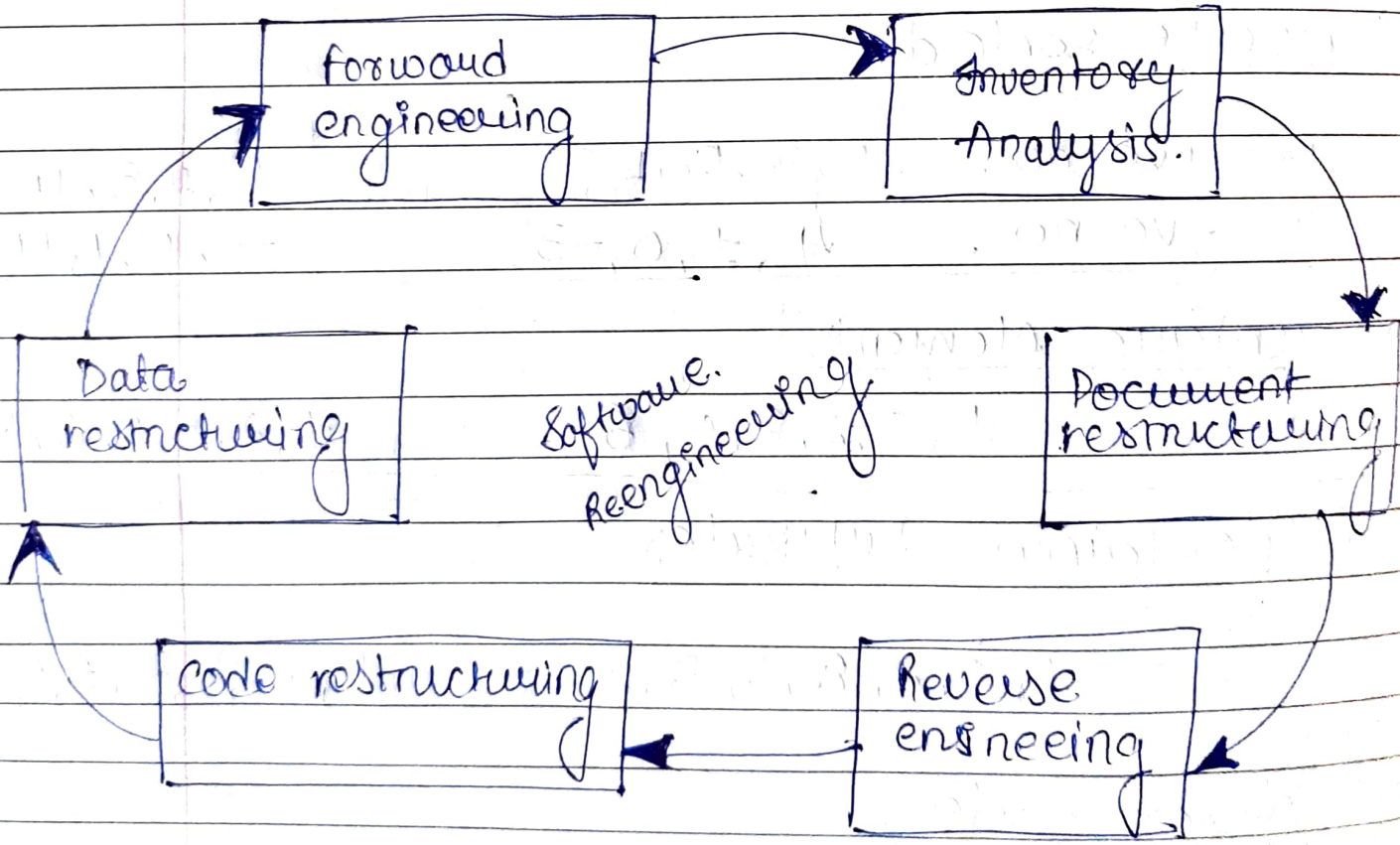
Error code

Error #	Error descript	Name
1.	Empty list	Cannot be sorted
2.	Given size is not equal to array	Missing Valeels.

Question (5)

Steps involves in Software Reengineering Process:

(i) Inventory Analysis
(ii) Document Reconstruction
(iii) Reverse Engineering
(iv) Code Reconstruction.
(v) Data Reconstruction
(vi) forward Engineering



Detail Explaination:

① Inventory Analysis.

(i) Build a table that contains all applications.

(ii) Sorting active software applications by business criticality, longevity, current maintainability, and other local criteria

(iii) helps to identify reengineering candidates

Establishes a list of criteria eg.

for example
- name of the application
- year it was originally created
- number of substantive changes made to it
- total effort applied to make these changes
- date of last substantive change
- effort applied to make the last change
- systems(s) in which interfaces

② Document Reconstruction

- live with weak documentation
- update poor documents if they are used
- fully require the documentation for critical system focusing on the "essential minimum".

example :

- creating documentation if fau too time consuming.
- Documentation must be updated, but we have limited resources.
- The system is business critical and must be fully re documented. Even in this case, an intelligent approach is to pare documentation.

(3) Reverse Engineering

- Process of design recovery
- analyzing a program in an effort to create a representation of the program at some abstraction level higher than source code

example

- Extract data, architectural, and procedural design information from an existing program.

(4) Code Restructuring

- Source code is analyzed and violations of structured programming practice are noted and repaired

- revised code needs to be reviewed and tested

(5) Data Restructuring

- usually requires full reverse engineering
- current data architecture is dissected
- data models are defined
- existing data structures are reviewed for quality

(6) Forward Engineering

- Sometimes called reclamation or renovation.
- Recovers design information from existing source code.
- uses this design information to reconstitute the existing system to improve its overall quality and performance.