

Name: Danyl Fernandes

Roll: 72

ID: 2020012004

Sub: SE

Date: - 18-Aug-2021

(Q2)

A) Spiral model

1) Spiral model is totally focused on risk handling

2) This model deals with various kinds of unanticipated risks with little to know no interaction with customers

3) This model is more suitable when the project is prone to risks that are difficult to plan at the beginning of the project

4) This model needs great deal of documentation

Agile model

1) Agile model focuses on achieving agility by removing tasks that are inefficient

2) The agile model focused on delivering some part of an increment after each block of time (time box)

3) Agile model is suitable for large projects where increment progress can be shipped in fine form of iterations / features

4) This model does not need to depend on many sort of documentation

(1)

(2)

Mobile Applications

- Developing mobile applications is a task with negligible risk involved.
- Agile model is suitable for such project since a mobile application can be huge in size.
- Also, features of the application must be delivered incrementally to increase user interaction & screen-on time.
- Since, Agile gives the manager & developer the agility, the Agile model is most suitable for a mobile application development.

B) Umbrella Activities

i) Software Project Tracking

- This allows the software team to assess progress against the project plan & take the necessary action to maintain schedule.

ii) Risk management:

- This includes a series of steps that help a software team to understand & manage uncertainty.
- It helps to estimate its impact.

- It helps in identification & predicting its occurrences
- It helps devise plans to mitigate or prevent risks in future.

iii) Measurement & Metrics:

- This will include all the measurement of all the aspects of the project.

iv) Reusability management:

- Helps with software project backups for corrections, or any kind of support that can be provided later on-demand of the user.

v) Document preparation & production:

- All the project planning & other activities should be well-documented & should not go ahead without this.

vi) Software Configuration Management:

- SCM is a set of activities designed to control change by identifying the work products that are likely to change & defining mechanisms for managing revisions.

vii) Formal Technical reviews:

- This includes all the techniques that

have been made use of in the project.

viii) Software Quality assurance:

- This measures each part/module of the project to measure, control & ensure quality in all aspects.
- This is an important step to ensure production quality.

(Q3)

A) Requirement Elicitation:

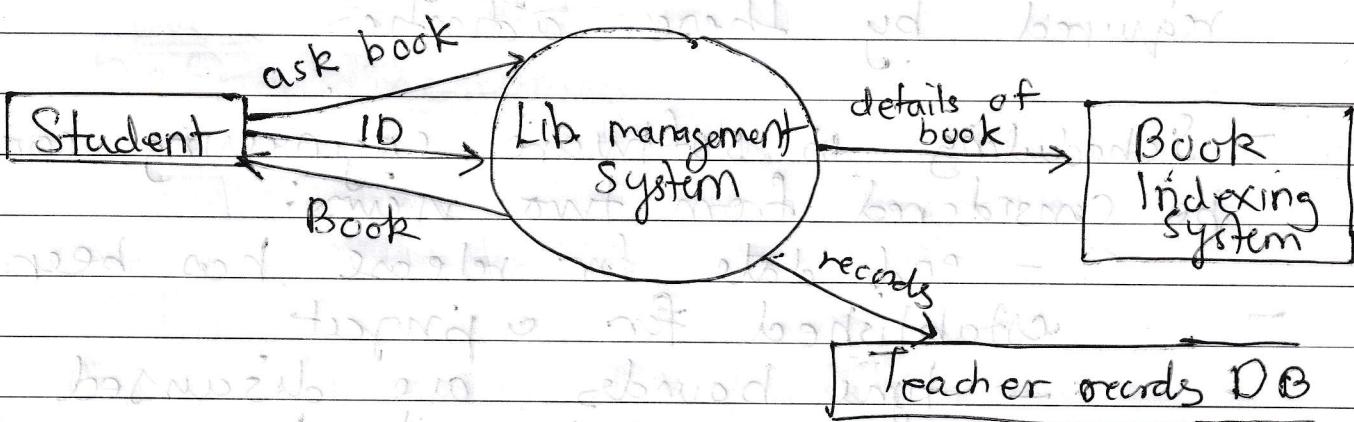
- In Requirement Engineering, requirement elicitation is the practice of researching & discovering requirements from the customers / end users and/or stakeholders.
- This process is also termed as "requirement gathering".
- Requirements elicitation includes interviews, questionnaires, observations & brain storming to gather requirements, since we cannot be sure about all requirements from the customer / user.
- This process of elicitation usually happens before requirements are analysed.

modeled or specified.

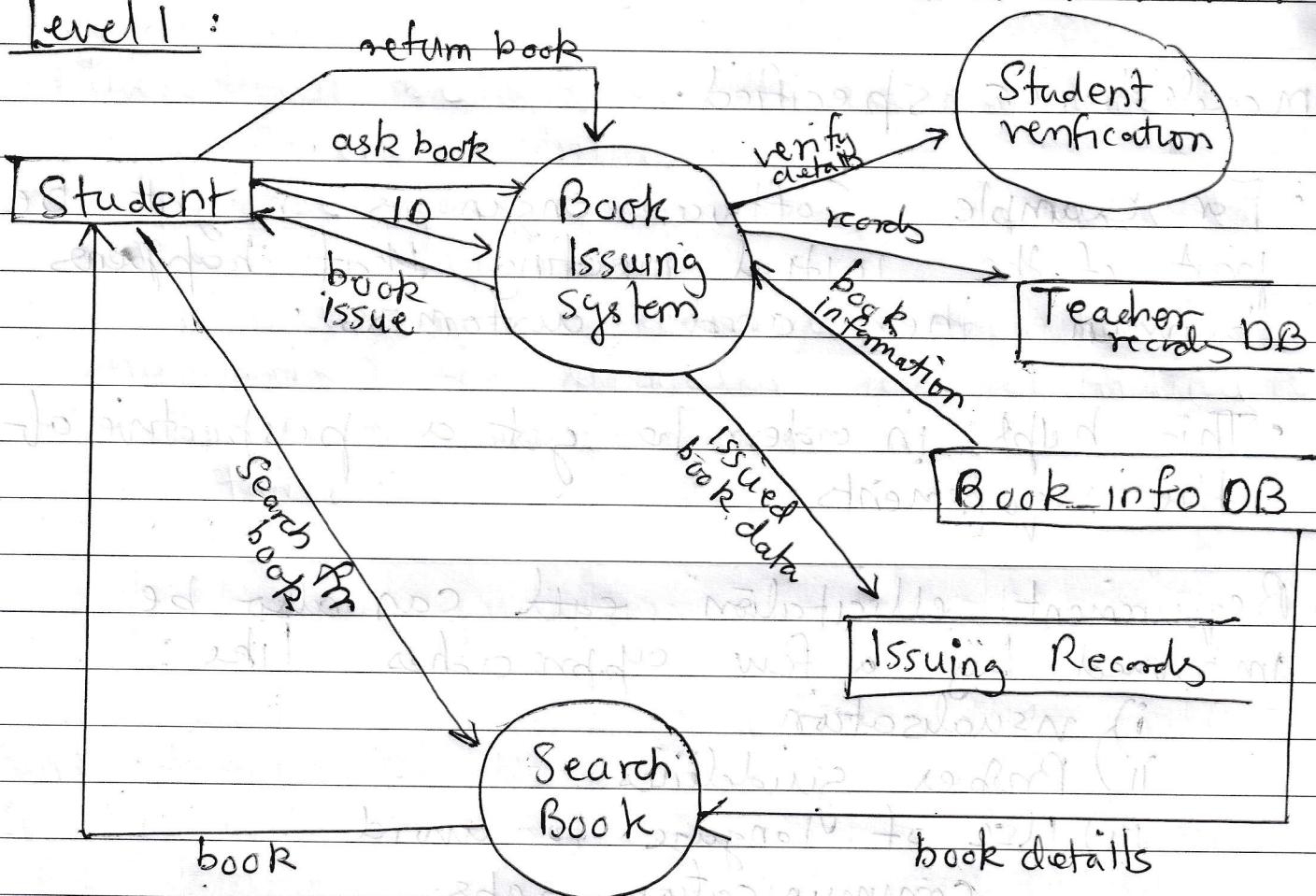
- For example, Software engineers might be part of the initial meeting that happens between them and customers.
- This helps in order to get a perspective of the requirements.
- Requirement elicitation can also be informed by a few approaches like:
 - i) visualisation
 - ii) Proper guidelines
 - iii) Use of language to avoid communication gaps
 - iv) Proper analysis of changes
 - v) Dependency documentation.

B) DFD for Library Management System:

Level 0 : (Context diagram)



Level 1 :



C) Scheduling

- Project scheduling techniques involves operating total work involved in a project into separate activities & judging at the time required by these activities
- Scheduling in software engineering can be considered from two views:
 - end date for release has been established for a project
 - time bounds are discussed & end date set by organisation

- Scheduling is an activity that distributes estimated effort across the planned project.

- Scheduling Techniques involve:

i) Compartmentalisation:

- Project is divided or compartmentalized into number of manageable activities, actions & tasks

ii) Interdependency:

- Dependencies between compartmentalized activities must be determined.

iii) Defined Responsibilities

Scheduled responsibilities tasks to all team members

iv) Effort Validation

v) Time allocation

vi) Defined outcomes

v) Reasonable milestones.

Scheduling Techniques

- PERT (Program Evaluation & Review Technique)

- CPM (Critical Path method.)

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- Scheduling Techniques

- PERT (Program Evaluation & Review Technique)

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- These can be applied to all software development processes.
- Both use the data & info received from earlier developments
- Both allow to determine the paths, durations, & estimates for individual activity, efforts & personal work durations.