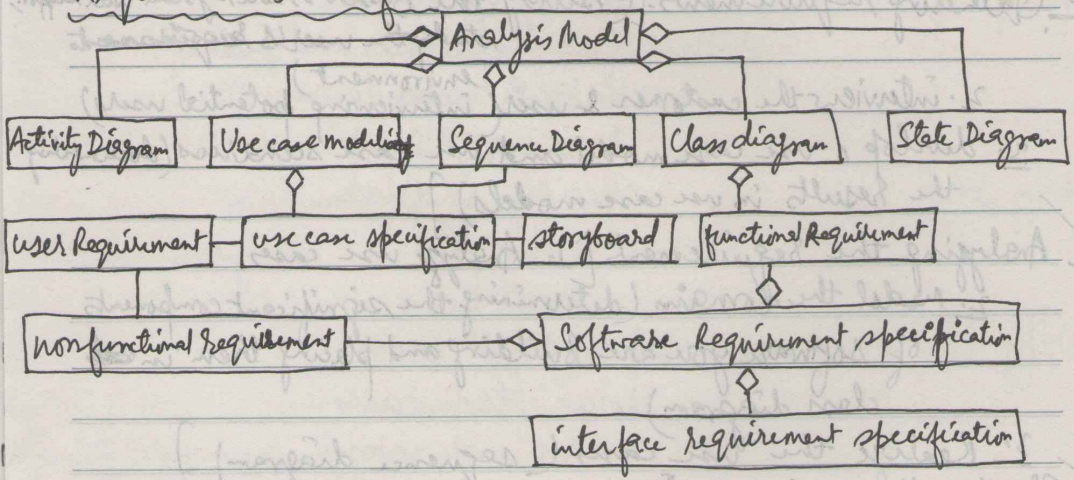
Software Requirements (using the unified process

Date

* characteristics of good requirements =

- unambiguous (no uncertainty)
- verifiable (testable)
- deterministic (what the system should do in all possible cases)
- traceable (to design, to implement, to test, to maintain)
- correct (actual statement of functionalities that the system must provide)
- communicable
- complete, consistent, modifiable

* Requirements artifacts =



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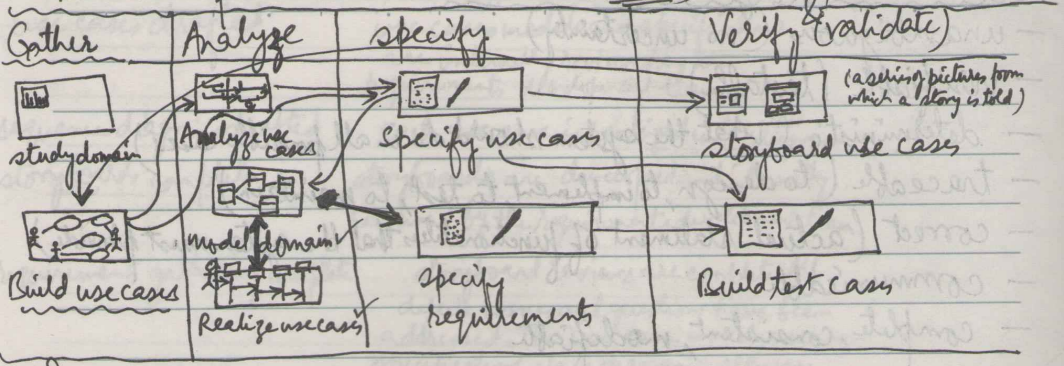
= iterative process overview =



= Process flow =

* Gathering requirements: [1. study the business the system will support, study the user's environment
2. interview the customer & user (interviewing potential users)
3. develop a use case model and use case scenarios (documenting the results in use case models)]

* Analyzing the requirement [1. Analyze use cases
2. model the domain (determining the significant components of software you are building and placing them in class diagram)
3. Realize the use cases (sequence diagram)]

* Specifying the requirements [1. specify the requirements (detailing the attributes, methods, and relationships of all the classes)
2. specify the interface requirements [specify the interface between your system and each of the other systems]]

* Verifying and validating the requirement: [1. present storyboards of the requirements to the user (taking steps to ensure that you have the right requirements).
2. develop test cases from the SRS (software requirement specification): [steps to ensure that you have the requirements right.]]

No.

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Users and software requirements

45% effort

User Requirements → Use Cases

36% effort

Software requirements → Software Requirements Specifications

12% effort for verification activities with SW requirements

6% effort to independent evaluations of the artifacts and the process (quality assurance)

...etc.

* Planning modules for requirements development —

* Model Work Breakdown Structure (WBS):

Gather ~~Action~~ Phase	Task
Gather requirements	Study domain
	identify use cases
Analyze requirements	Build initial class diagram
	build sequence diagrams
	build storyboards
	externally review storyboards
	Rework
specify requirements	specify use cases
	specify attributes and methods
	establish dependencies
	review SRS
~~verify SRS~~	specify interfaces
	review IRS
	Rework
verify SRS	specify test cases
	review test cases
	assess use cases
	assess class diagrams
	assess SRS
	assess IRS

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± task network that integrates the user requirements workflow & S/w requirements workflow. in WBS

	Activity	Task	Predecessor/dependency
1.	user requirements	study domain	
2.		identify use cases	1
3.		build class diagram	1,2
4.		specify use cases	3
5.		build sequence diagrams	4
6.		build storyboards	4
7.		externally review storyboards	6
8.		rework	7
9.	software requirements	specify attributes and methods	5,8
10.		establish dependencies	9
11.		specify interfaces	5,8,9
12.		~~review~~ rework	15,16
13.	Requirements verification	specify test cases	12
14.		review test cases	13
15.		review SRS	14
16.		review IRS	11
17.	quality Assurance	assess use cases	8
18.		assess class diagrams	8
19.		assess SRS	12
20.		assess IRS	12

= standard major Milestones =

Milestone	definition	predecessors / dependencies
use cases drafted	use case models and specifications are internally reviewed by the requirements development team.	4
sequence diagrams drafted	each use case is realized in the class diagram.	5
storyboards complete	storyboards are developed and internally reviewed by the requirements development team.	6
requirements gathering complete	storyboard reviews are complete. All defects, issues, and questions have been addressed. The use case model, use case specifications, class diagrams, sequence diagrams, and storyboards have been updated to reflect corrections.	8
SRS drafted	the SRS has been specified and internally reviewed by the requirements development team.	10
IRS drafted	the IRS has been specified and reviewed.	11
SRS complete	the SRS has been peer-reviewed, and includes review of the analysts verification results.	12
QA complete	an independent verification has been conducted of the use cases, the analysis model, and the SRS	17, 18, 19, 20
baseline established	the use case specifications, the analysis model, and the SRS have been safely stored, uniquely identified, and released for general use.	17, 18, 19, 20