

Outline Stakeholders Context diagram and interfaces Types of requirements Numbering requirements Scenarios, sequence diagrams Glossary Class diagrams Use cases









Stakeholder

- Role or person with an interest (stake) in the system to be built
- User
 - Uses the system
 - Can include different user profiles
- Buyer
 - Pays for the system
- Administrator
- Analyst
 - Expert in requirement engineering, and or in domain
- Developer































Interface specification

- Three types of interface may have to be defined
 - User interfaces, GUIs
 - Procedural interfaces;
 - Data exchanged;
- Formal notations are an effective technique for interface specification.







Requirement types

- Functional
 - Description of services / behaviors provided by the system
 - Application vs. domain
- Non functional
 - Constraints on the services
 - Application vs. domain
 - (Domain
 - From the domain (= set of related applications, ex banking, telecom))

Requirement ID	Description	
F1	Handle sale transaction	
F2	Start sale transaction	
F3	End sale transaction	
F4	Log in	
F5	Log out	
F6	Read bar code	
	1	





Non-functional requirements







1	Description	
NF1(efficiency)	Function F1.1 less than 1msec	
NF2 (efficiency)	Each function less than ¹ / ₂ sec	
Domain1	Currency is Euro – VAT is computed as	





easures	s for NF reqs
Property	Measure
Speed	Processed transactions/second User/Event response time Screen refresh time
Size	M Bytes Number of ROM chips
Ease of use	Training time Number of help frames
Reliability	Mean time to failure Probability of unavailability Rate of failure occurrence Availability
Robustness	Time to restart after failure Percentage of events causing failure Probability of data corruption on failure
Portability	Percentage of target dependent statements Number of target systems



Domain requirements

- Derived from the application domain and describe system characteristics and features that reflect the domain.
- Domain requirements can be new functional requirements, constraints on existing requirements or define specific computations.
- If domain requirements are not satisfied, the system may be unworkable.













1Start sales transaction2Read bar code3Retrieve name and price given barcode3Repeat 2 and 3 for all products4Compute total5Manage payment cash6Deduce stock amount of product7Print receipt	Step	Description	
2Read bar code3Retrieve name and price given barcode3Repeat 2 and 3 for all products4Compute total5Manage payment cash6Deduce stock amount of product7Print receipt	1	Start sales transaction	
3Retrieve name and price given barcode3Repeat 2 and 3 for all products4Compute total5Manage payment cash6Deduce stock amount of product7Print receipt	2	Read bar code	
Repeat 2 and 3 for all products4Compute total5Manage payment cash6Deduce stock amount of product7Print receipt	3	Retrieve name and price given barcode	
 4 Compute total 5 Manage payment cash 6 Deduce stock amount of product 7 Print receipt 		Repeat 2 and 3 for all products	
5Manage payment cash6Deduce stock amount of product7Print receipt	4	Compute total	
6 Deduce stock amount of product7 Print receipt	5	Manage payment cash	
7 Print receipt	6	Deduce stock amount of product	
	7	Print receipt	





























Form-based specifications

- Definition of the function or entity.
- Description of inputs and where they come from.
- Description of outputs and where they go to.
- Indication of other entities required.
- Pre and post conditions (if appropriate).
- The side effects (if any) of the function.





Tabular specific	ation
Condition	Action
Sugar level falling $(r2 < r1)$	CompDose = 0
Sugar level stable $(r2 = r1)$	CompDose = 0
Sugar level increasing and rate of increase decreasing ((r2-r1)<(r1-r0))	CompDose = 0
Sugar level increasing and rate of increase stable or increasing. ((r2-r1) (r1-r0))	CompDose = round ((r2-r1)/4) If rounded result = 0 then CompDose = MinimumDose
http://softeng.polito.it	















Requirement ID	Description
F1	Start sale transaction
F2	End sale transaction
F3	Log in
F4	Log out
F5	Read bar code

4.2 Non functional requirements

Requirement ID	Description
NF1(efficiency)	Function F1.1 less than 1msec
NF2 (efficiency)	Each function less than 1/2 sec
Domain1	Currency is Euro – VAT is computed as



tep	Description	
1	Start sales transaction	
2	Read bar code	
3	Retrieve name and price given barcode	
	Repeat 2 and 3 for all products	
4	Compute total	
5	Manage payment cash	
6	Deduce stock amount of product	
7	Print receipt	
⁸ SOf	tEngd sales transaction	



