



ARQUITECTURAS DE SOFTWARE

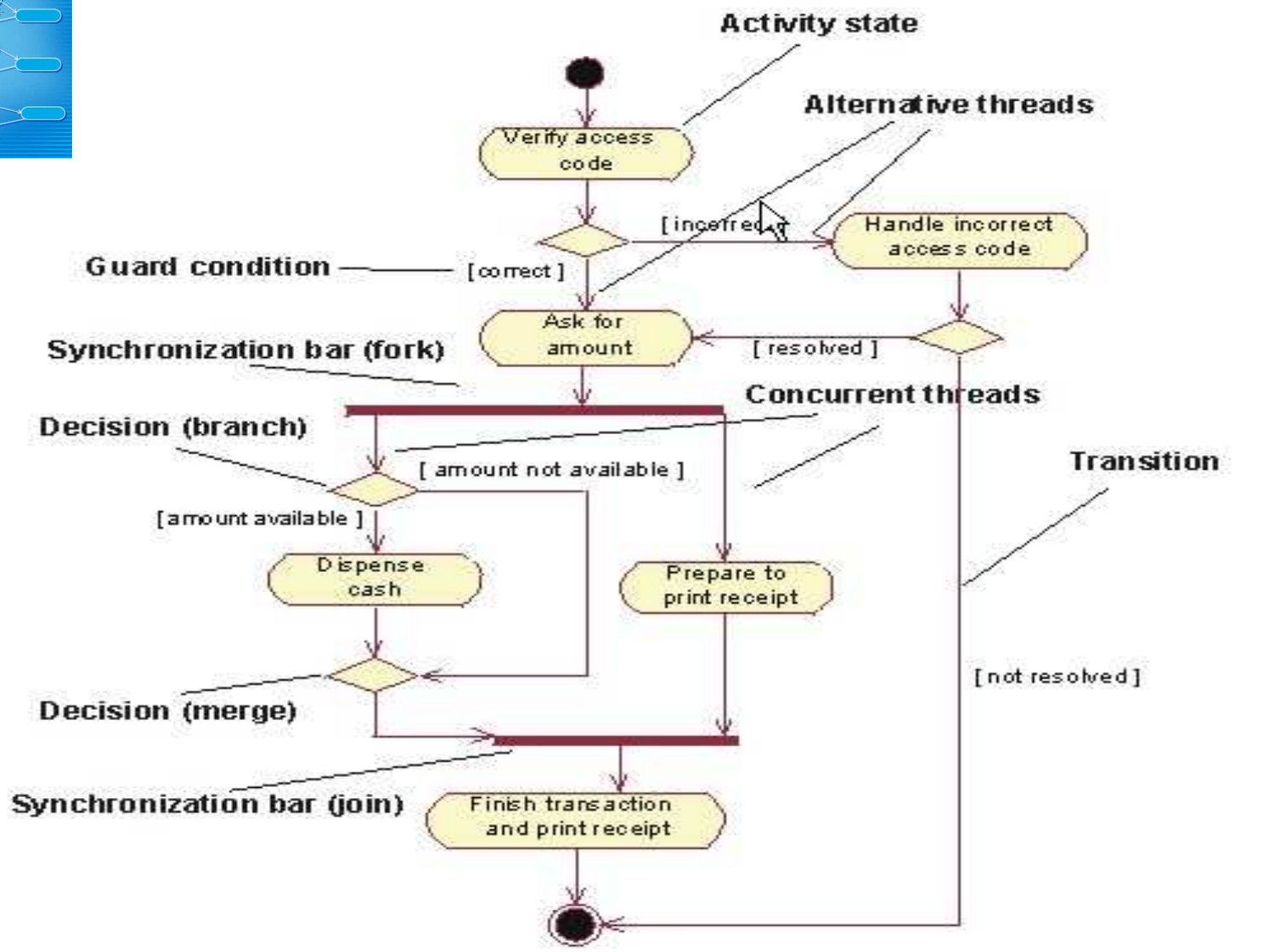
AULA N° 4

02/11/2007

F. Mário Martins



Activity Diagrams: conclusão.





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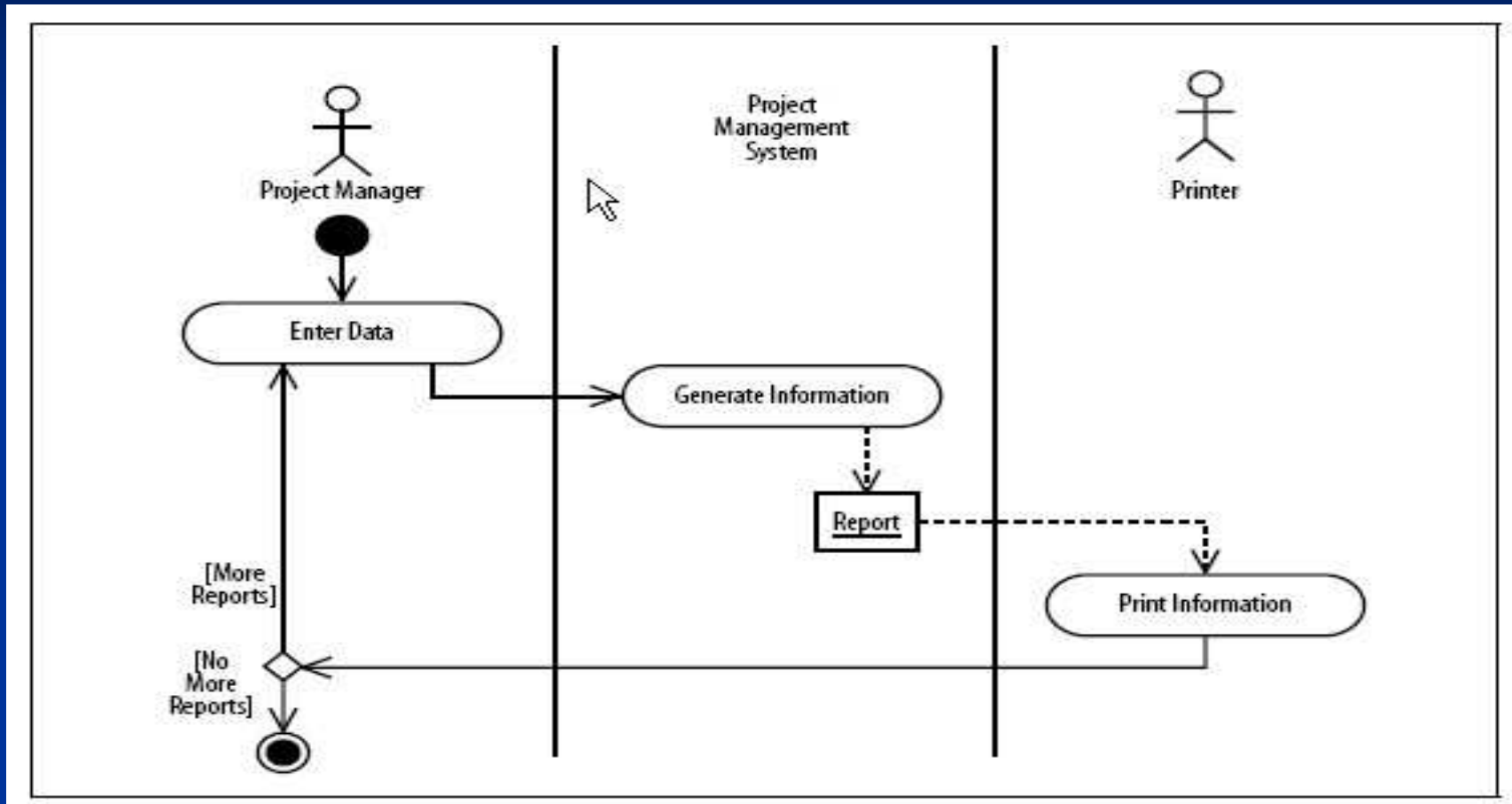


Nível de Abstracção pode ser ajustado aos objectivos ou fase

The purpose of the activity diagram is to model the procedural flow of actions that are part of a larger activity. In projects in which use cases are present, activity diagrams can model a specific use case at a more detailed level. However, activity diagrams can be used independently of use cases for modeling a business-level function, such as buying a concert ticket or registering for a college class. Activity diagrams can also be used to model system-level functions, such as how a ticket reservation data mart populates a corporate sales system's data warehouse.



Repartição de Responsabilidades



Responsabilidade => Actor ou Entidade do sistema



Swimlanes

In activity diagrams, it is often useful to model the activity's procedural flow of control between the objects (persons, organizations, or other responsible entities) that actually execute the action. To do this, you can add swimlanes to the activity diagram (swimlanes are named for their resemblance to the straight-line boundaries between two or more competitors at a swim meet).



Importância dos AD

Although UML sequence diagrams can portray the same information as activity diagrams, I personally find activity diagrams best for modeling business-level functions. This is because activity diagrams show all potential sequence flows in an activity, whereas a sequence diagram typically shows only one flow of an activity. In addition, business managers and business process personnel seem to prefer activity diagrams over sequence diagrams -- an activity diagram is less "techie" in appearance, and therefore less intimidating to business people. Besides, business managers are used to seeing flow diagrams, so the "look" of an activity diagram is familiar.

Donald Bell, IBM Global Services

Importante: É esta a nossa abordagem/perspectiva !!



Estruturação: Frames

Frames:
Elementos
estruturais
diversos

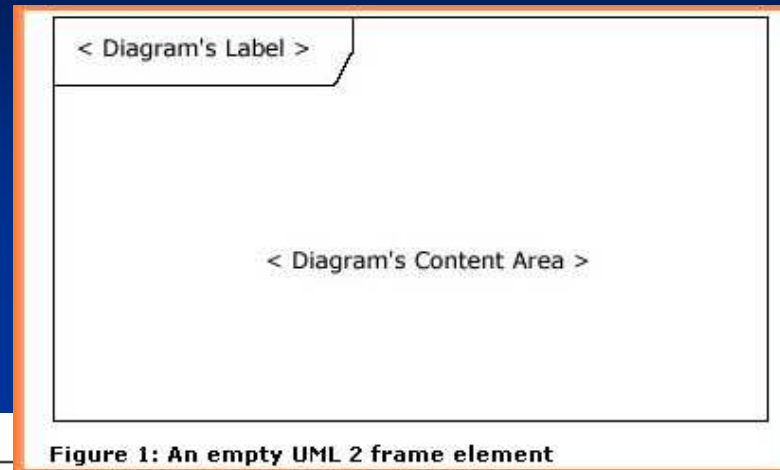
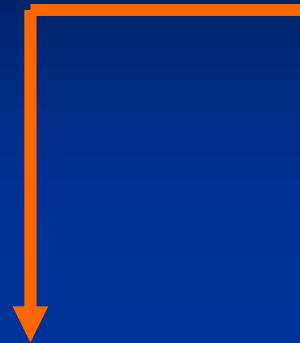


Figure 1: An empty UML 2 frame element

Table 1. Diagram frame labels.

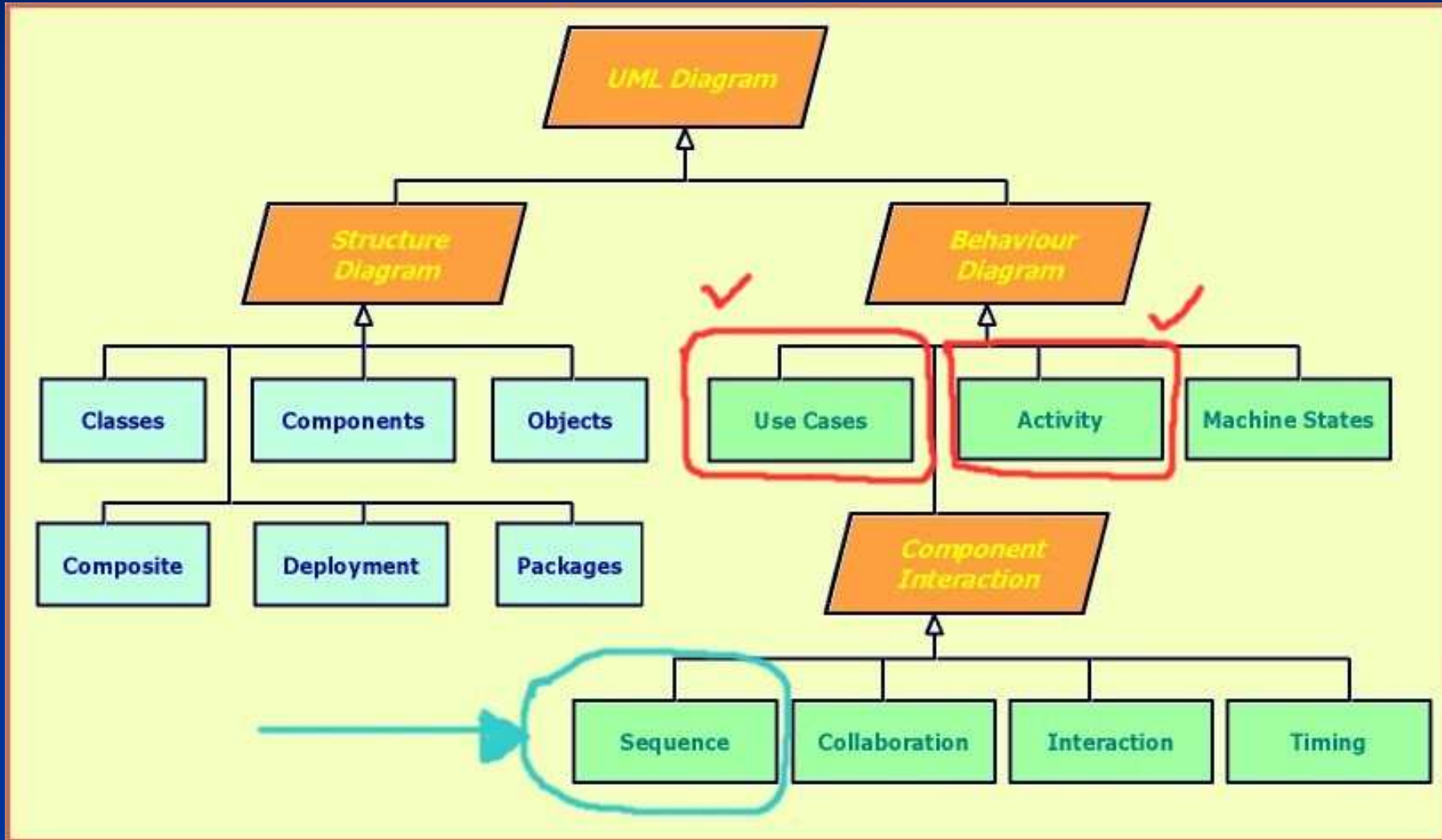
Label	Usage
Component	The frame depicts the internal design of a component.
Package	The frame depicts the internal organization of a package , often using a UML class diagram or a UML use case diagram .
sd	Indicates that the frame contains an interaction diagram, usually a UML sequence diagram although UML communication diagrams are also common options.
Use Case	The frame depicts the logic of a use case, often as a UML activity diagram or a UML interaction overview diagram .

Table 2. Combined fragment labels.

Label	Usage
alt	Indicates several alternatives, only one of which will be taken, separated by dashed lines. Used to model <i>if</i> and <i>switch</i> statements. See the example in Figure 2 .
assert	Indicates that the fragment models an assertion.
criticalRegion	Indicates that the fragment must be treated as atomic and cannot be interleaved with other event occurrences. Often used within a <i>par</i> frame (Douglass 2004).
loop	Models logic which will be potentially repeated several times.
opt	Models optional logic depending on the run-time evaluation of a guard.
par	Indicates several fragments of logic, separated by dashed lines, all of which will run in parallel.
ref	References another diagram or a method definition.

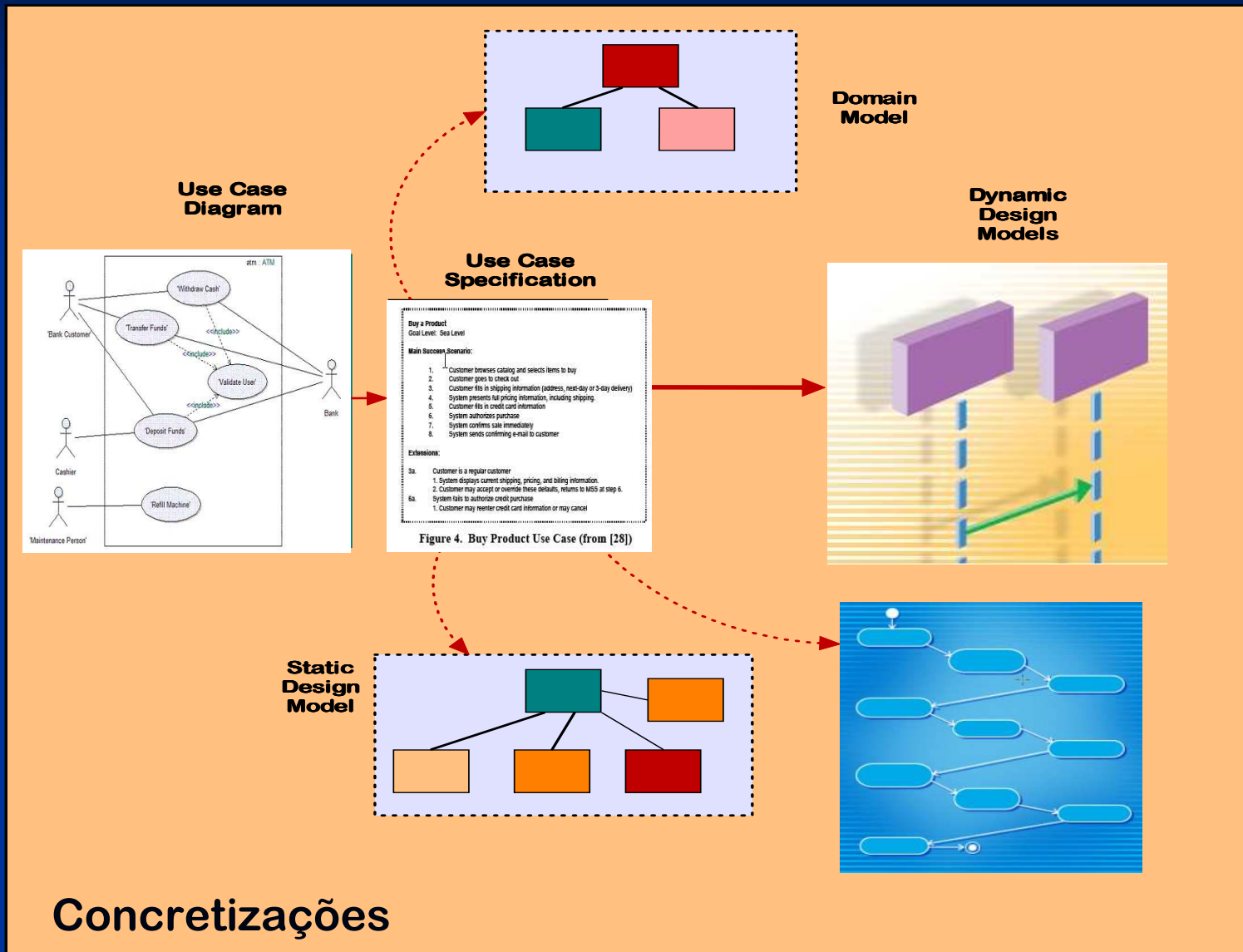


Diagramas de Sequência





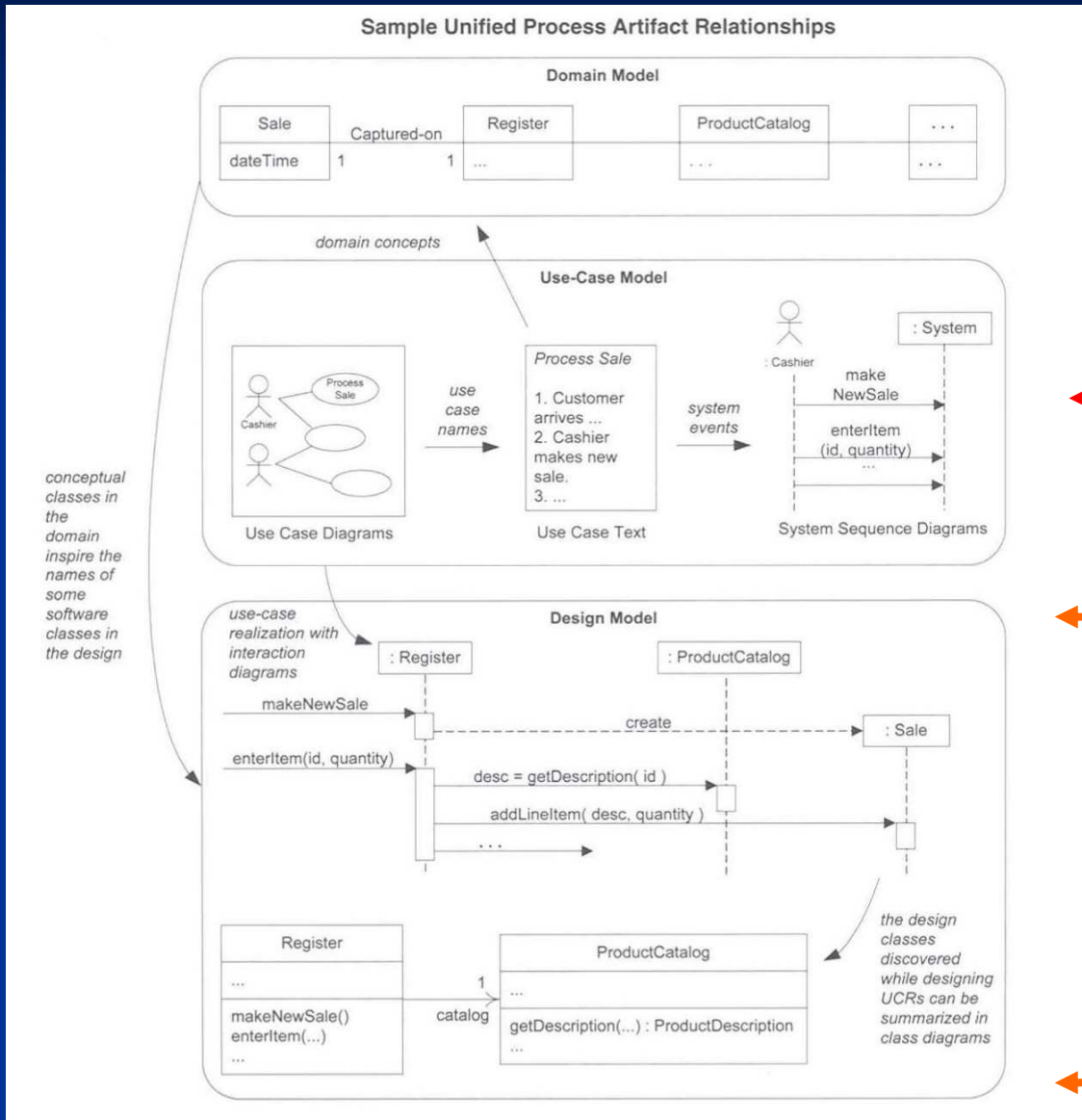
Use Case Driven Approach II



←
Diagramas
de
Sequência
(de
Sistema)



Diagramas de Sequência



Estes diagramas
são usados em
várias fases

Análise de
Requisitos
(agora)

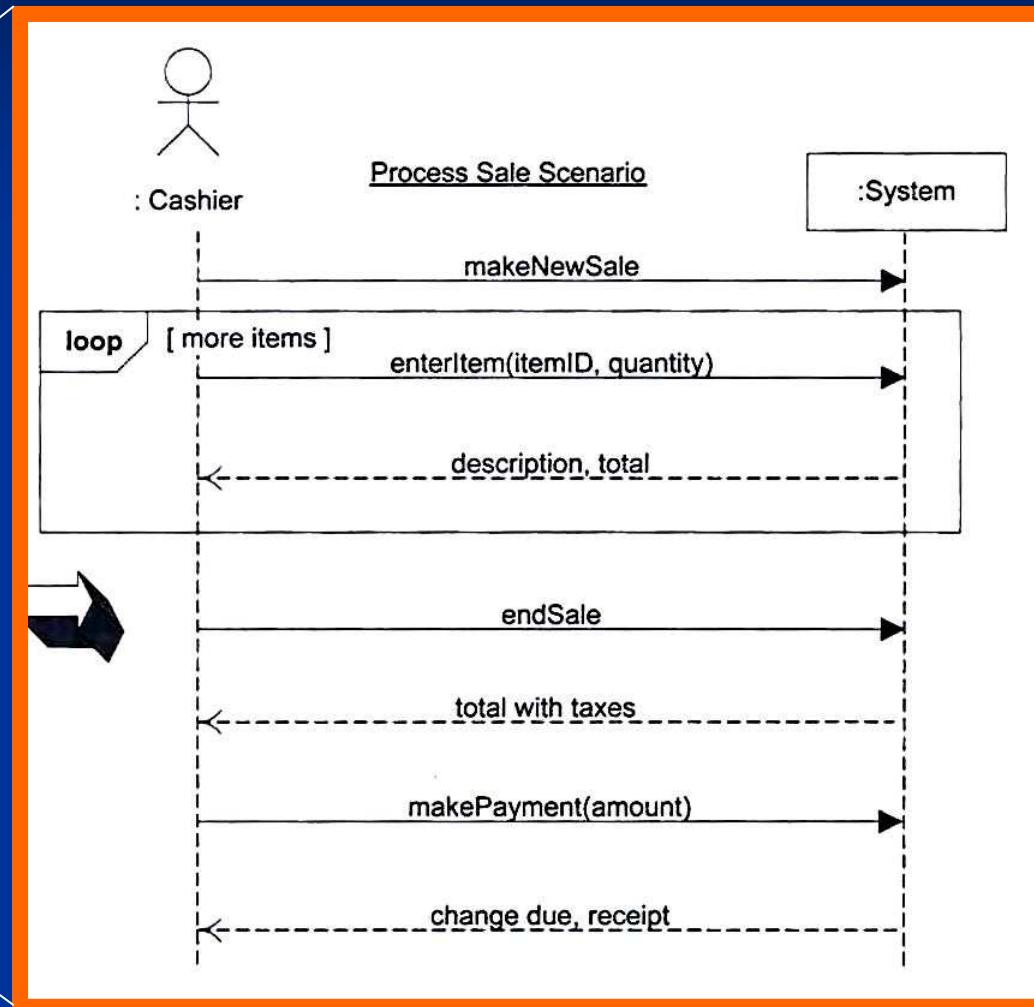
Concepção
(mais tarde)



Relação Cenário – Diagrama

Simple cash-only Process Sale scenario:

1. Customer arrives at a POS checkout with goods and/or services to purchase.
 2. Cashier starts a new sale.
 3. Cashier enters item identifier.
 4. System records sale line item and presents item description, price, and running total.
Cashier repeats steps 3-4 until indicates done.
 5. System presents total with taxes calculated.
 6. Cashier tells Customer the total, and asks for payment.
 7. Customer pays and System handles payment.
- ...



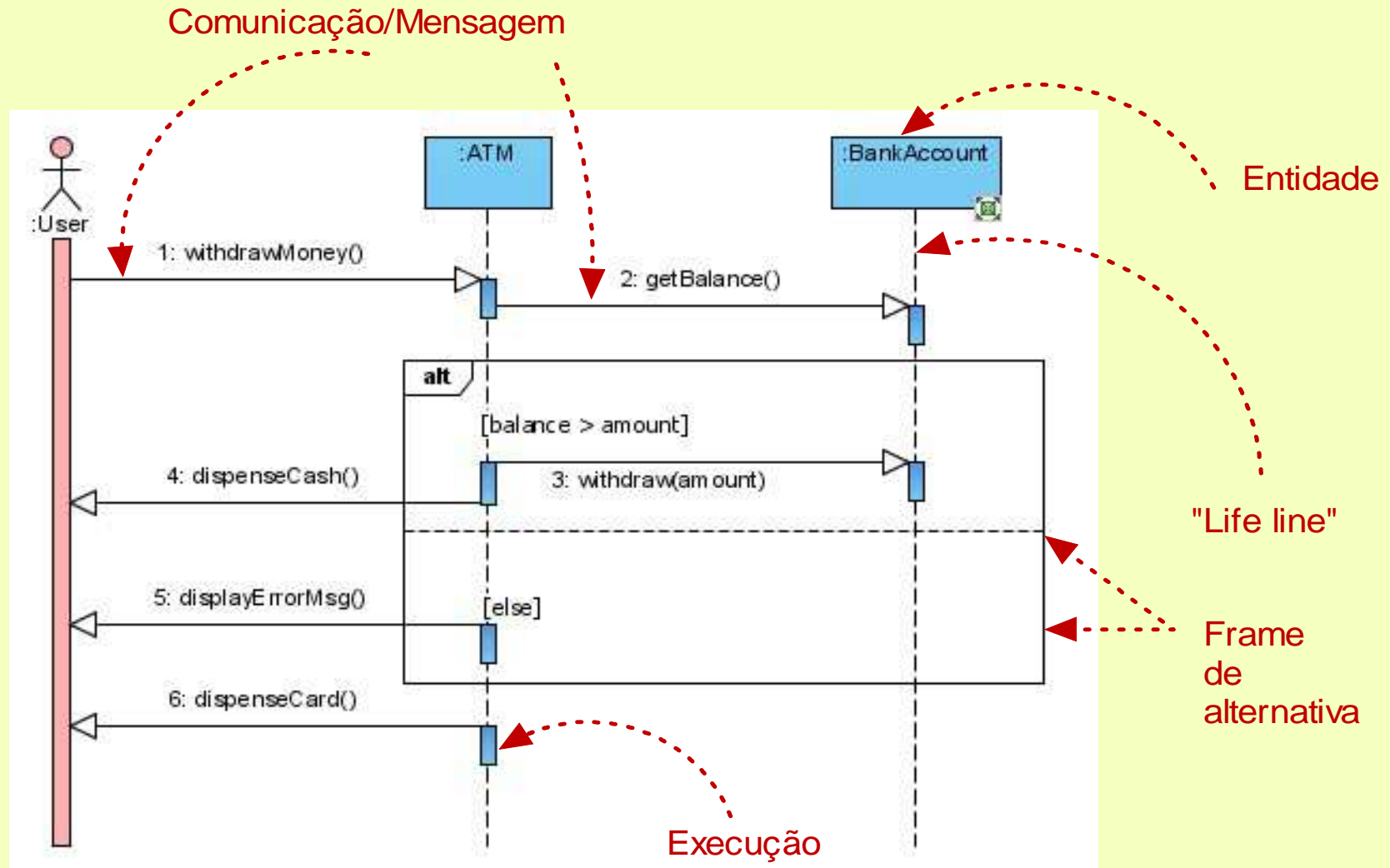


O sistema global é usualmente formado por subsistemas onde actores desempenham papéis com objectivos que devem ser bem definidos. Subsistemas possuem “limites”.



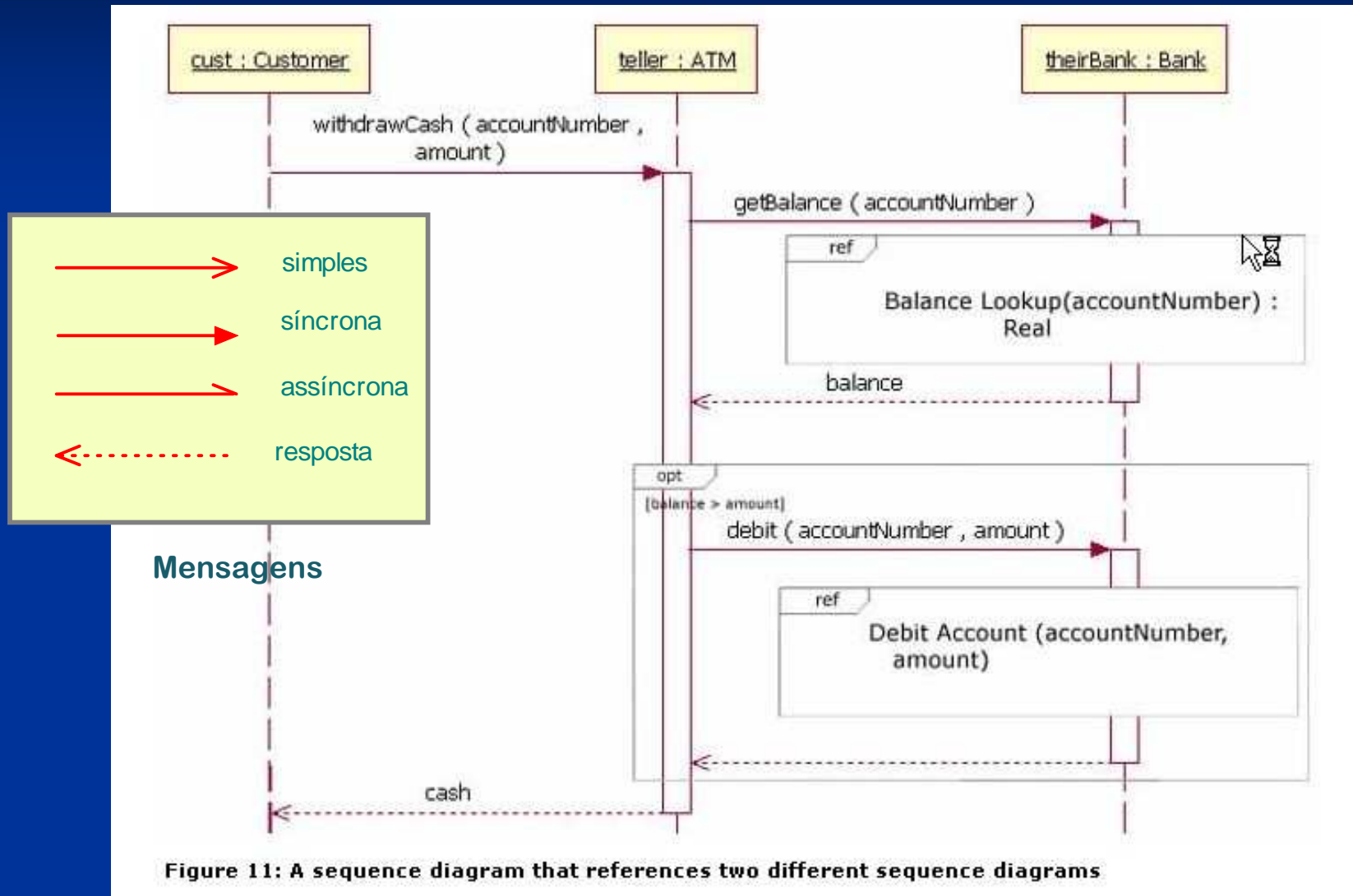


Diagramas de Seq. : Notação



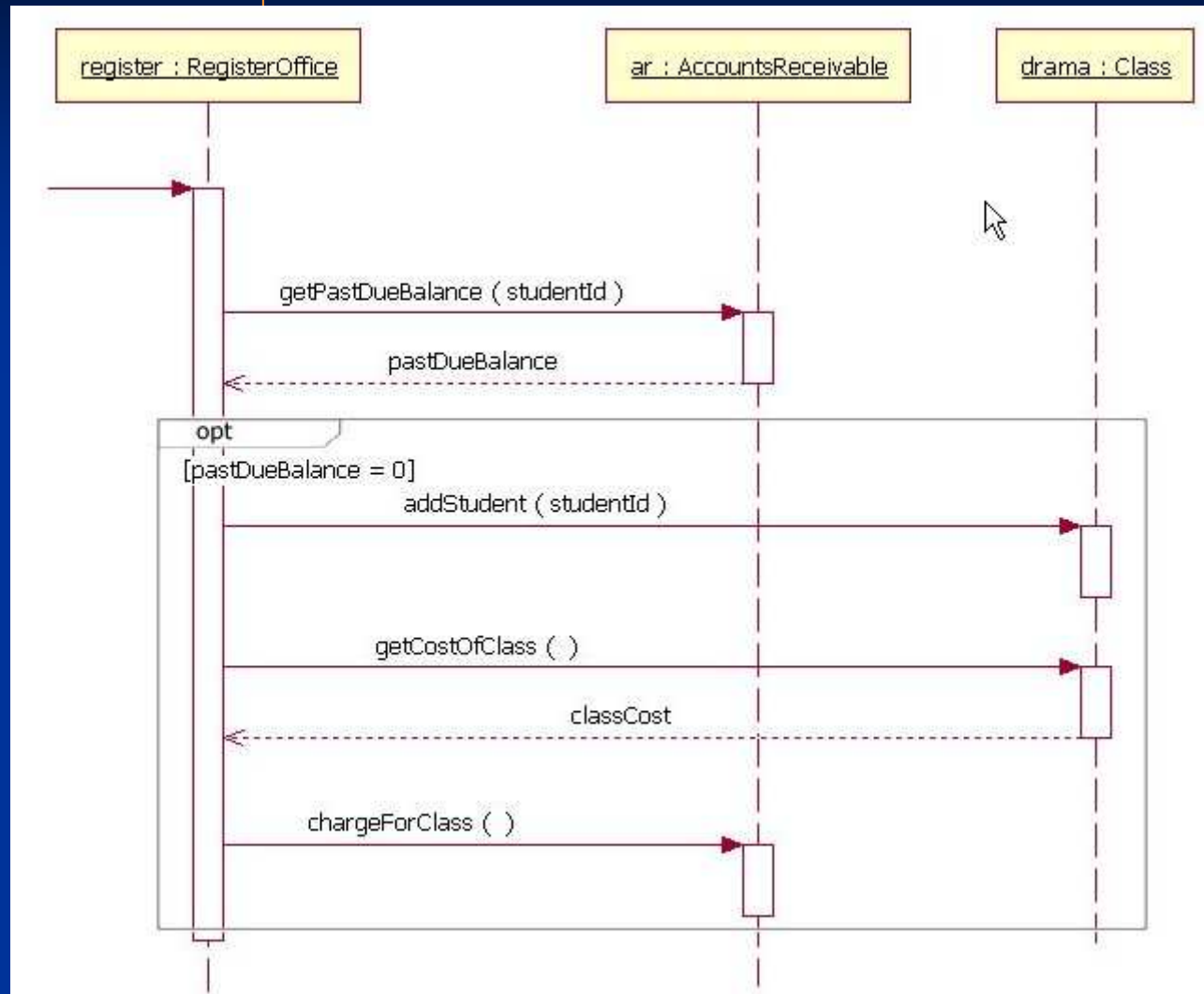


Diagramas de Seq. : Notação



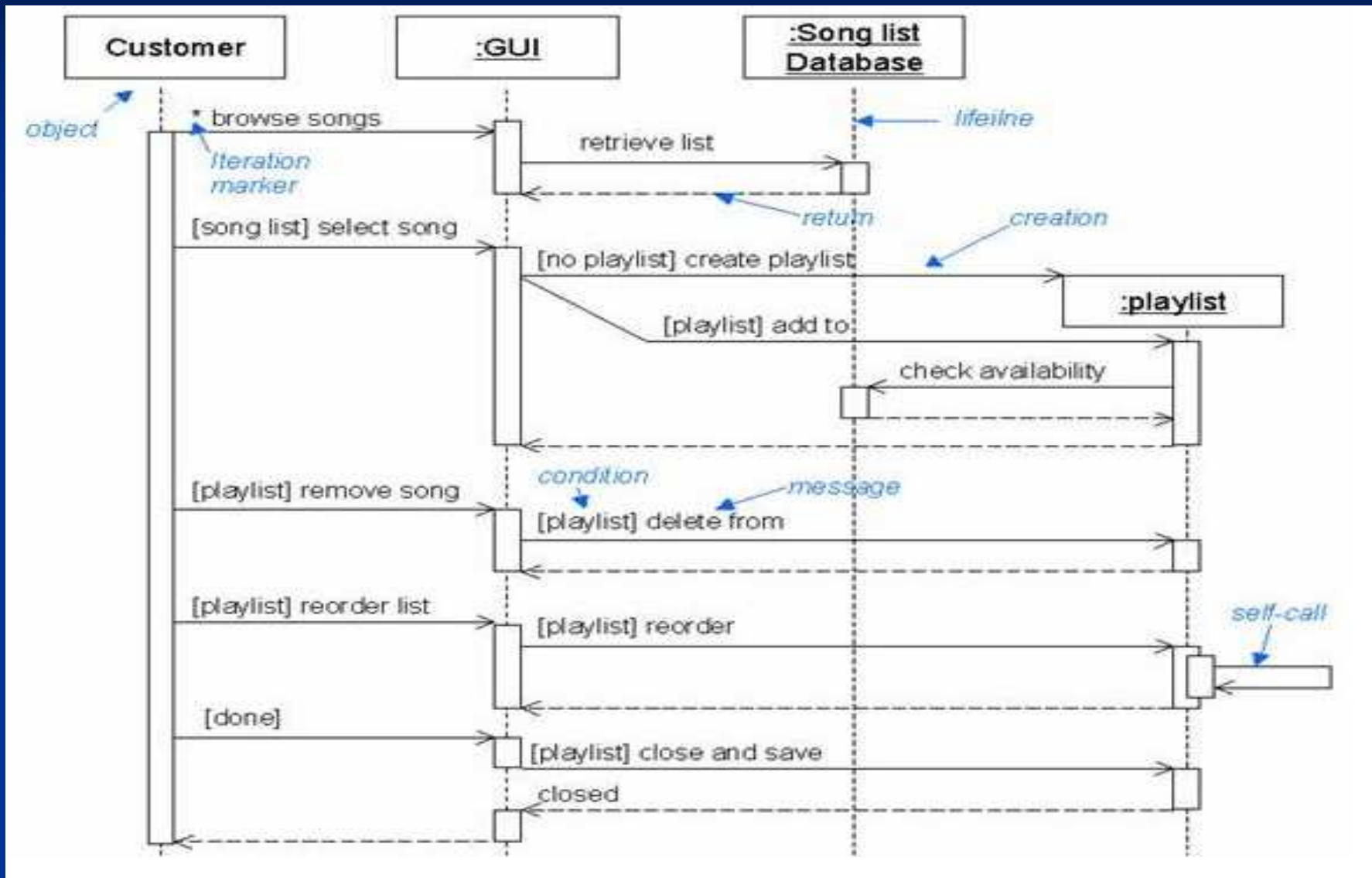


Diagramas de Seq. : Exemplos



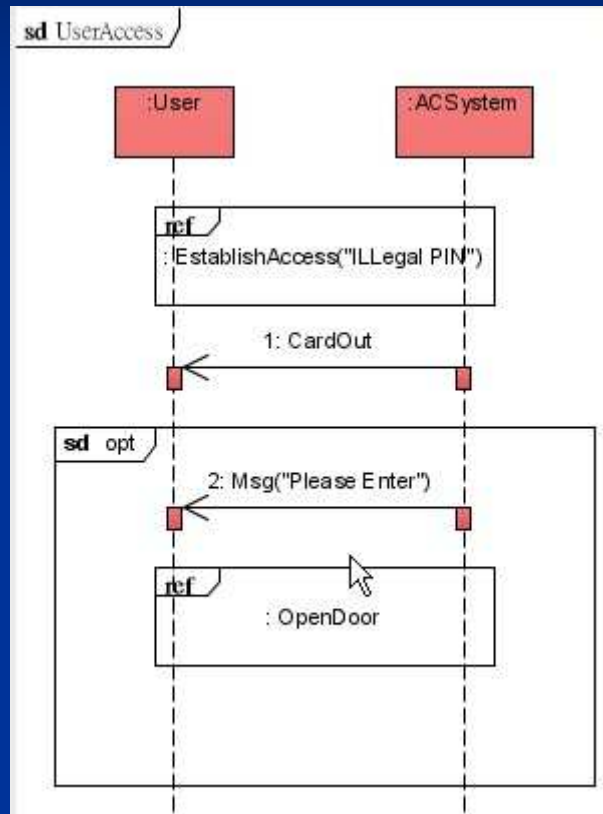


Diagramas de Seq. : Exemplos

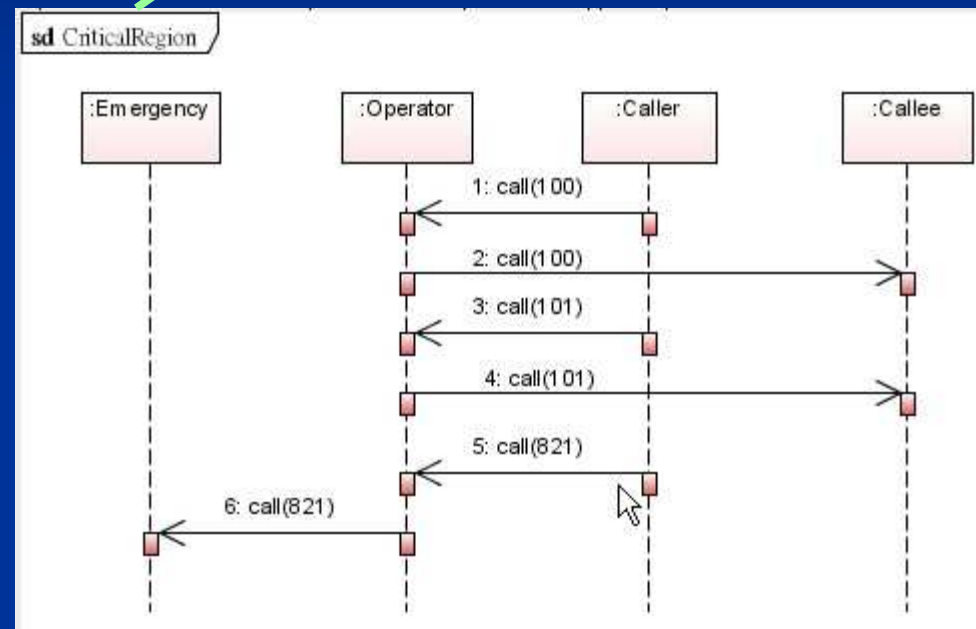




Diagramas de Seq. : Exemplos



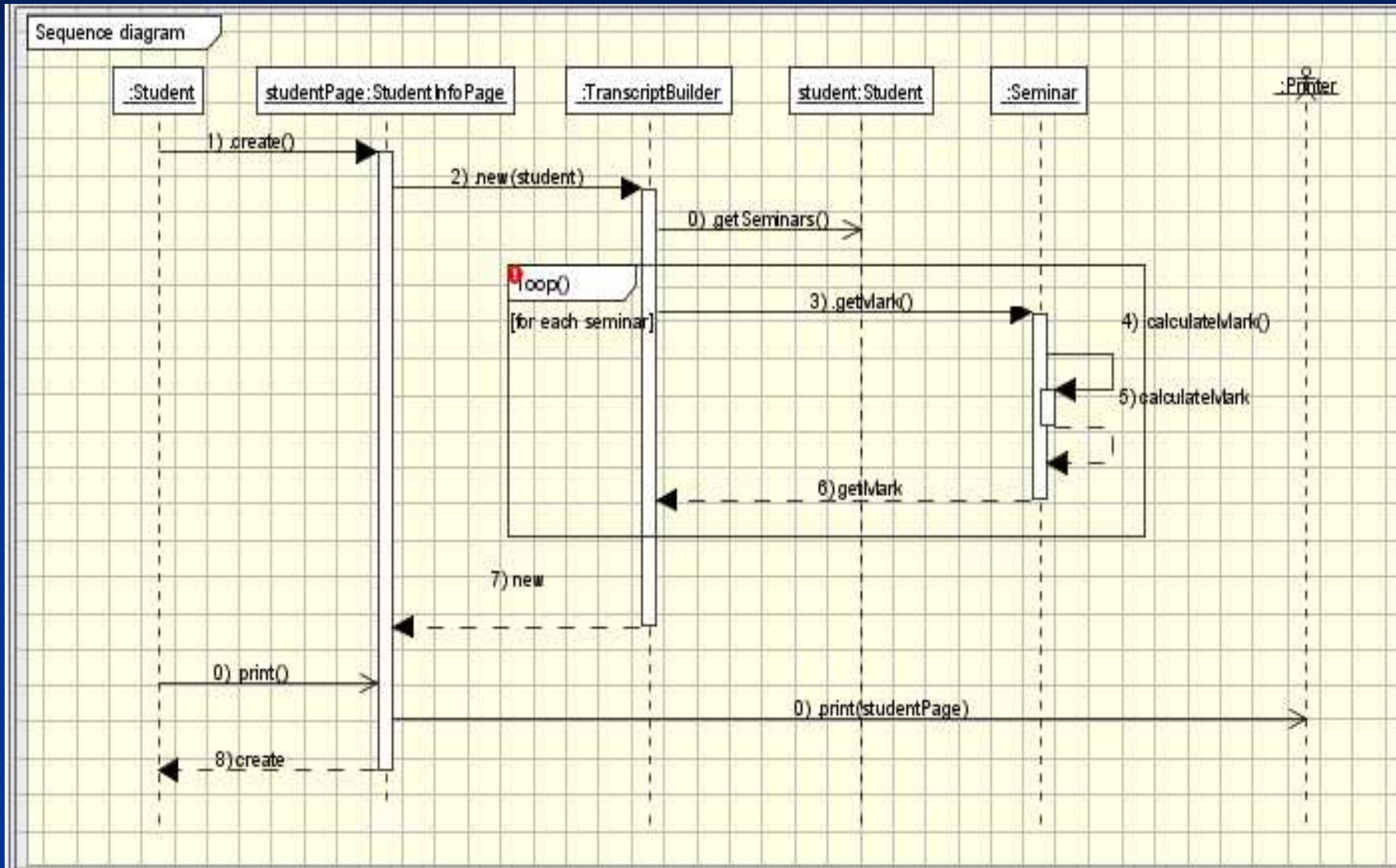
Região Crítica



Execução atômica
("locked")

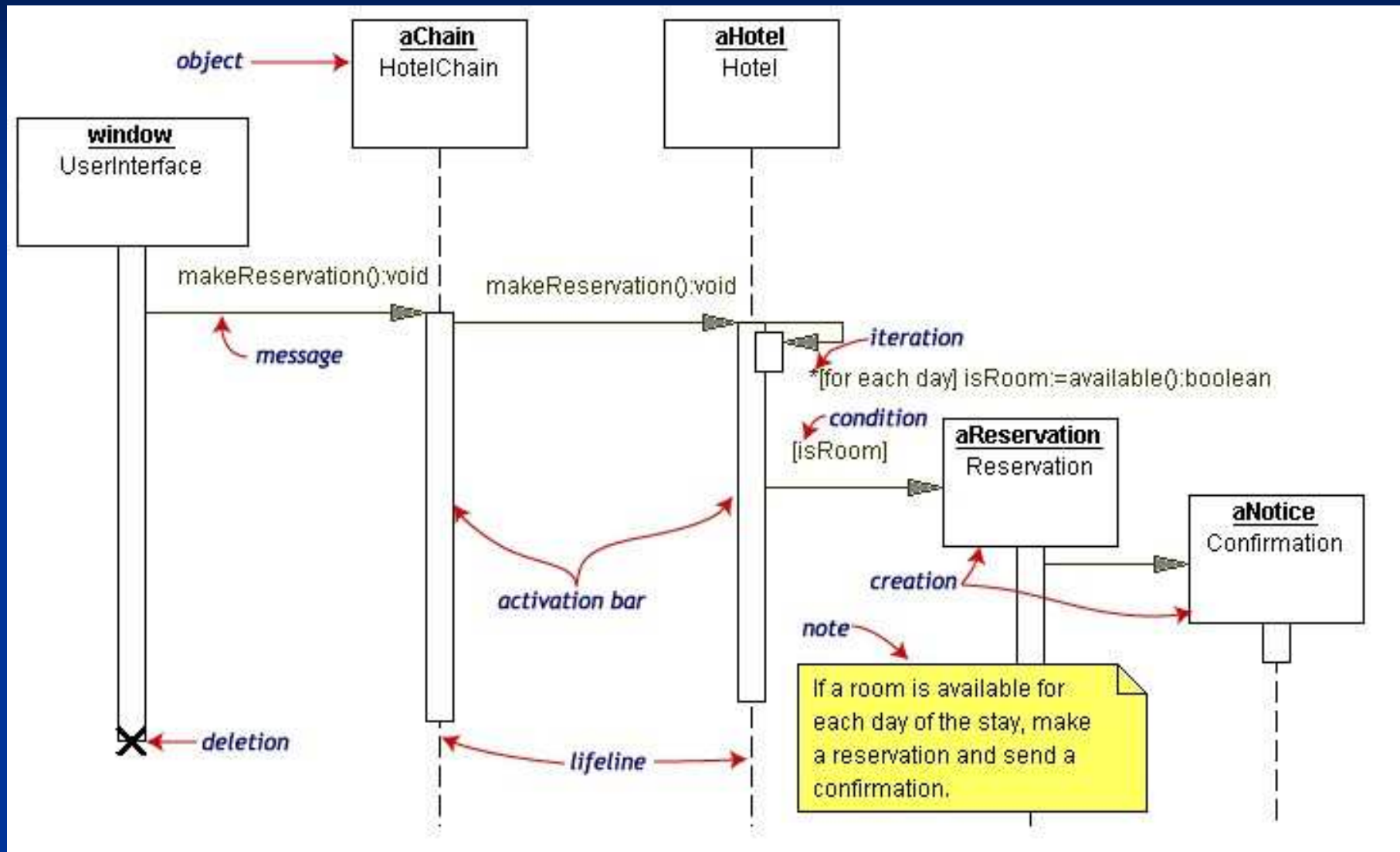


Diagramas de Seq. : Exemplos





Diagramas de Seq. : Exemplos

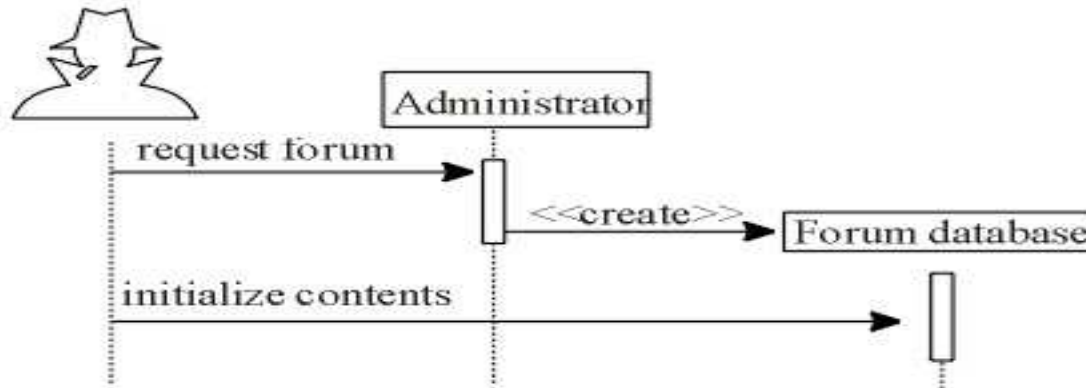




Diagramas de Seq. : Exemplos

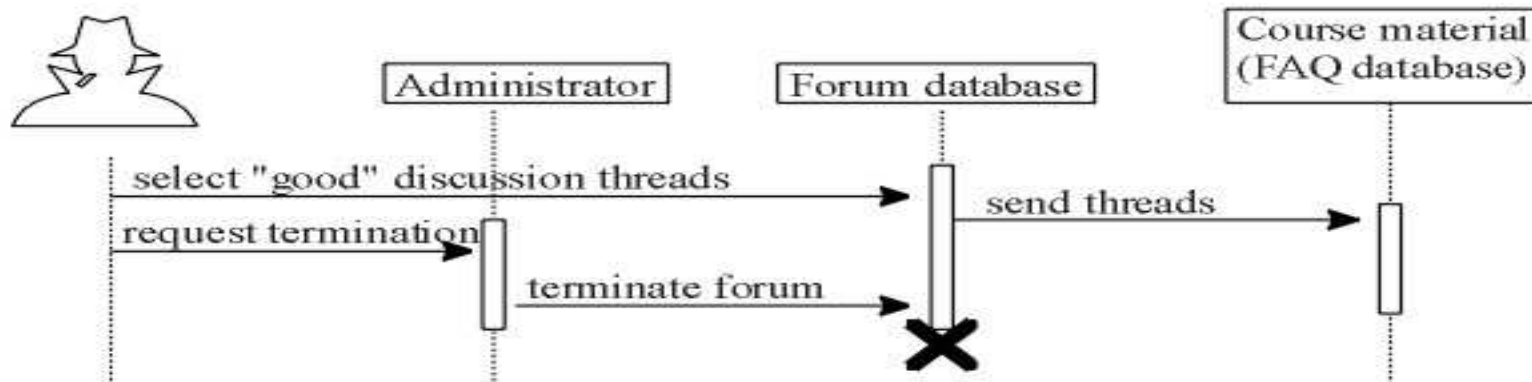
THE INITIALIZATION OF FORUM

Actor: teacher



THE TERMINATION OF FORUM

Actor: teacher

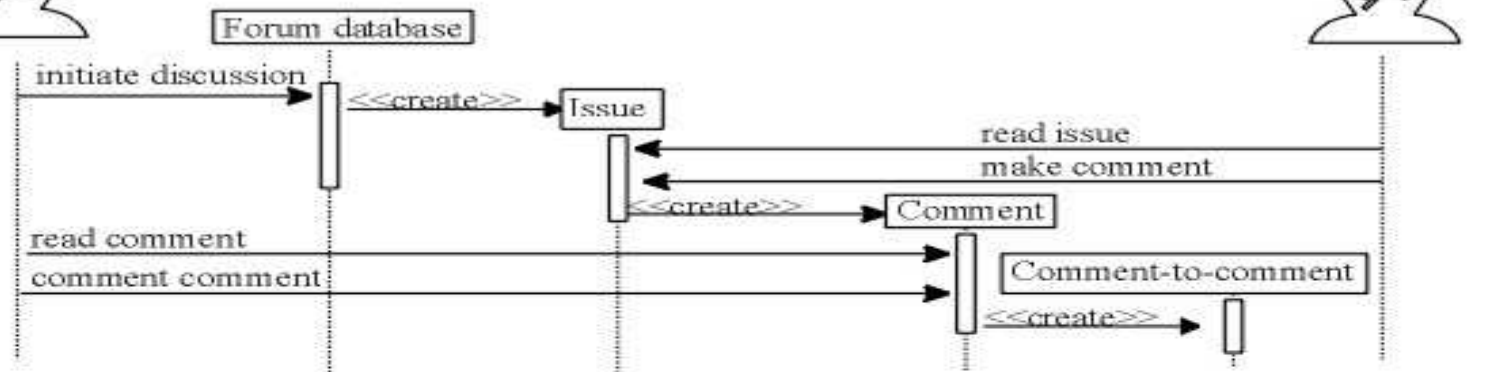
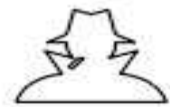




Diagramas de Seq. : Exemplos

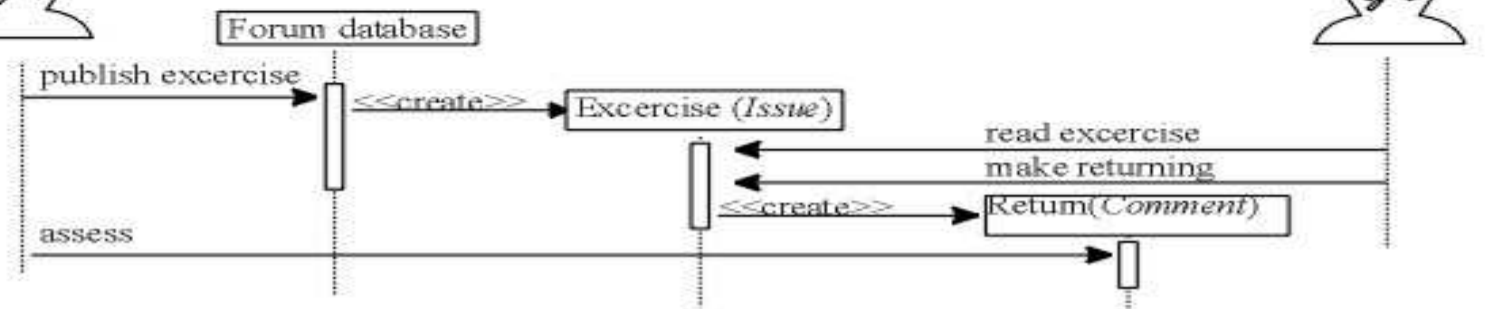
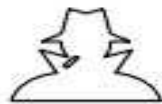
DISCUSSIONS

Actor: person



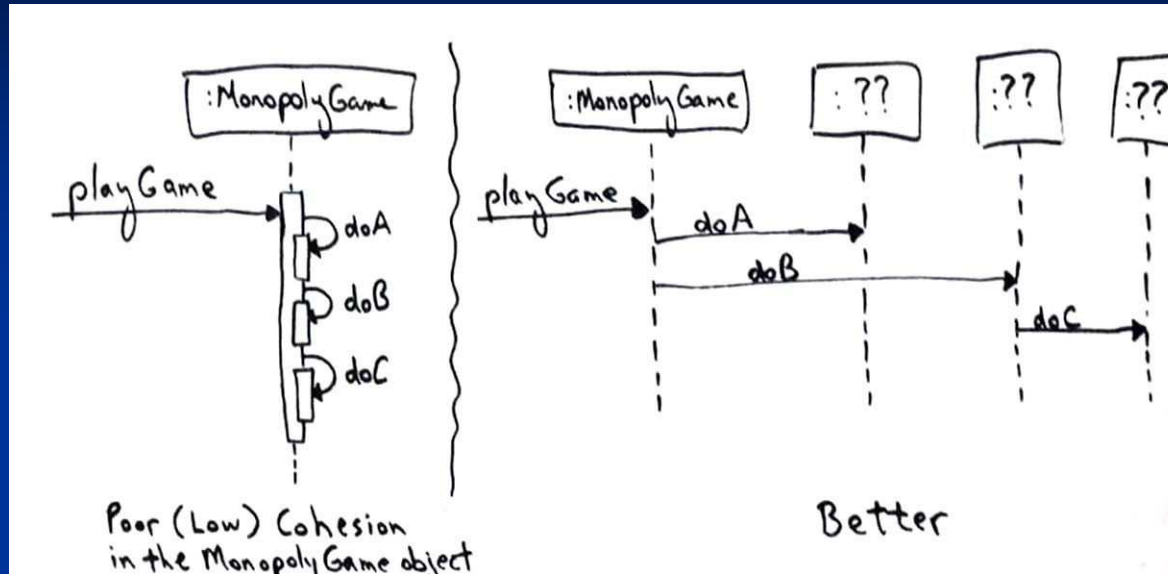
EXERCISE RETURNINGS

Actor: teacher

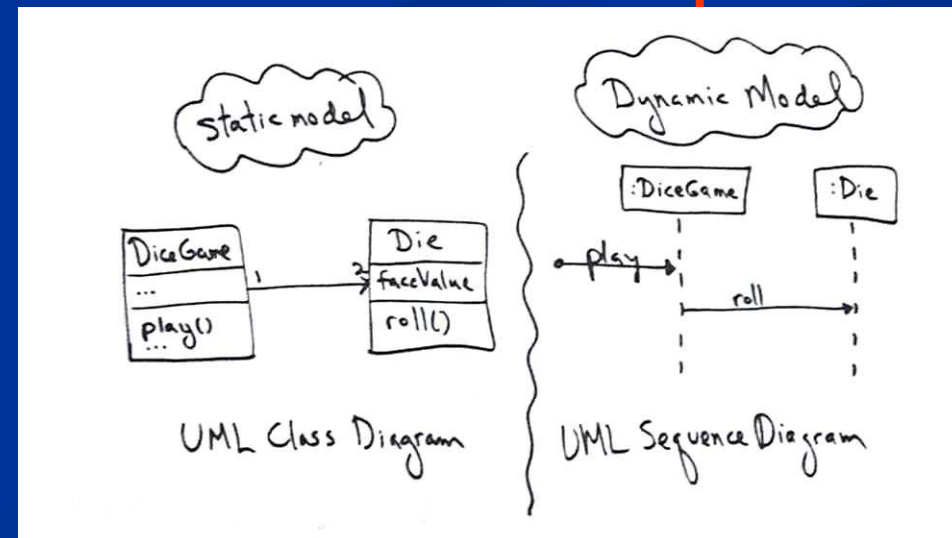




Esboços são uma boa técnica

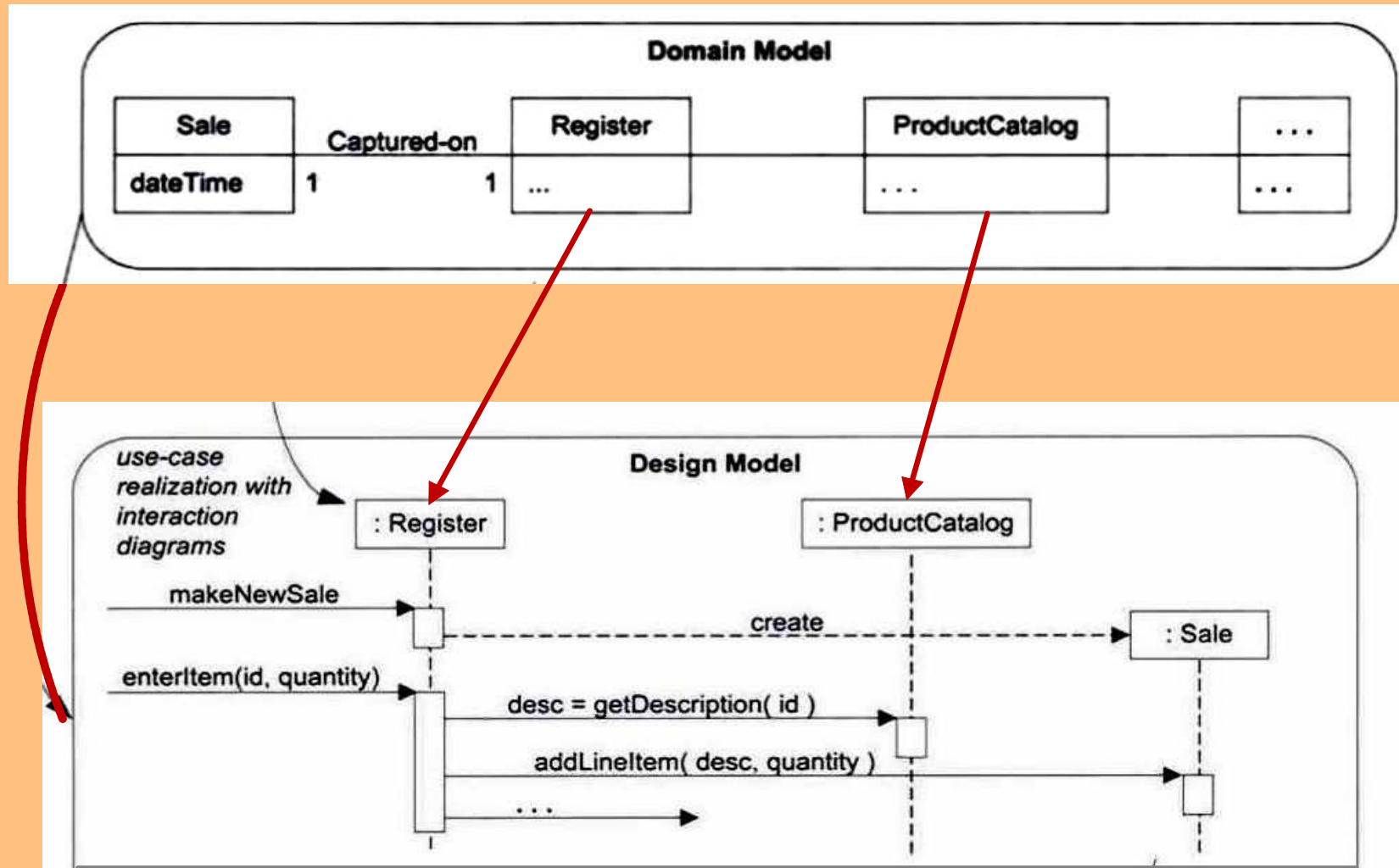


Entidades do domínio são importantes para os diagramas de sequência



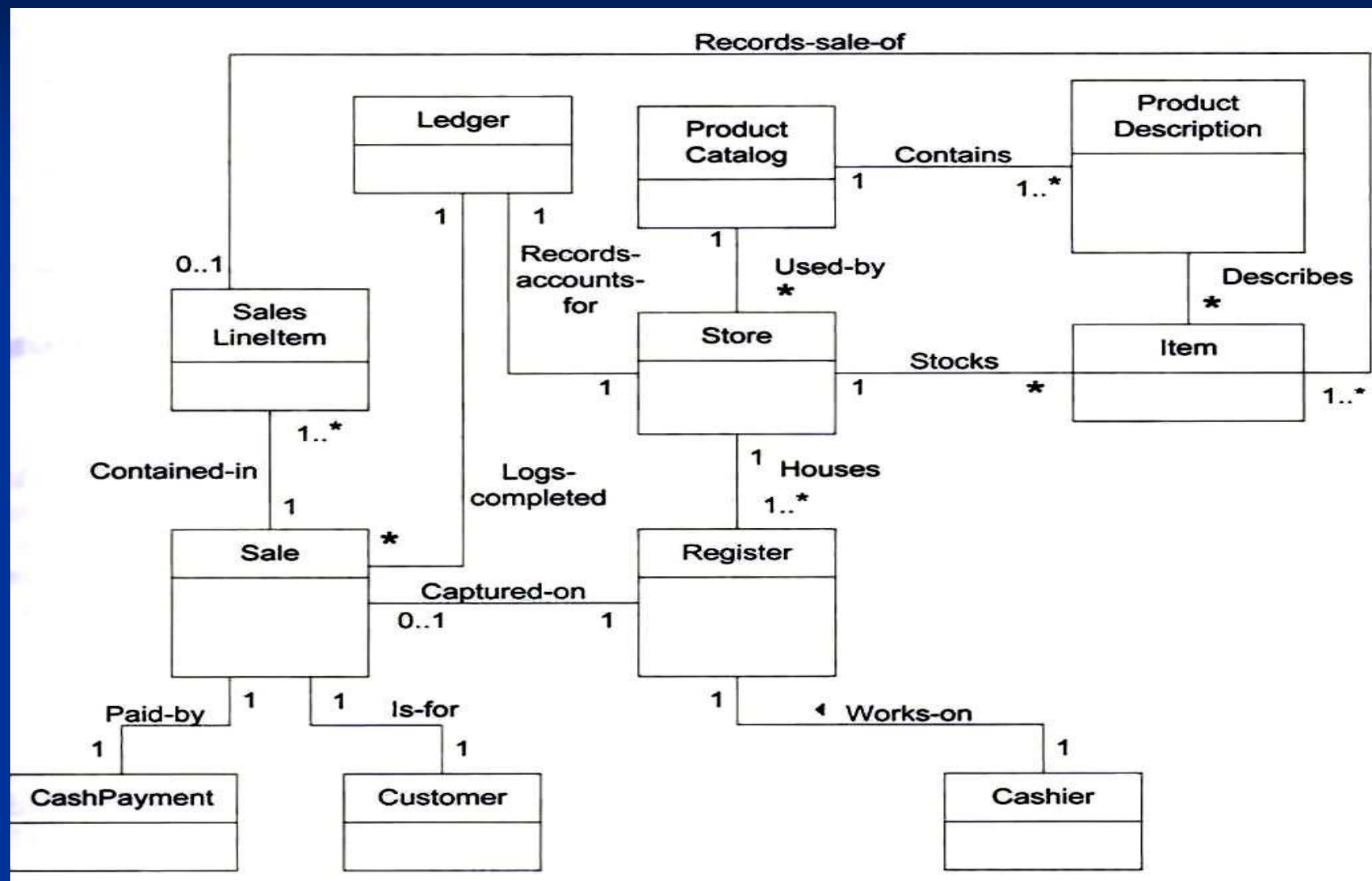


Conceitos devem ser consistentes



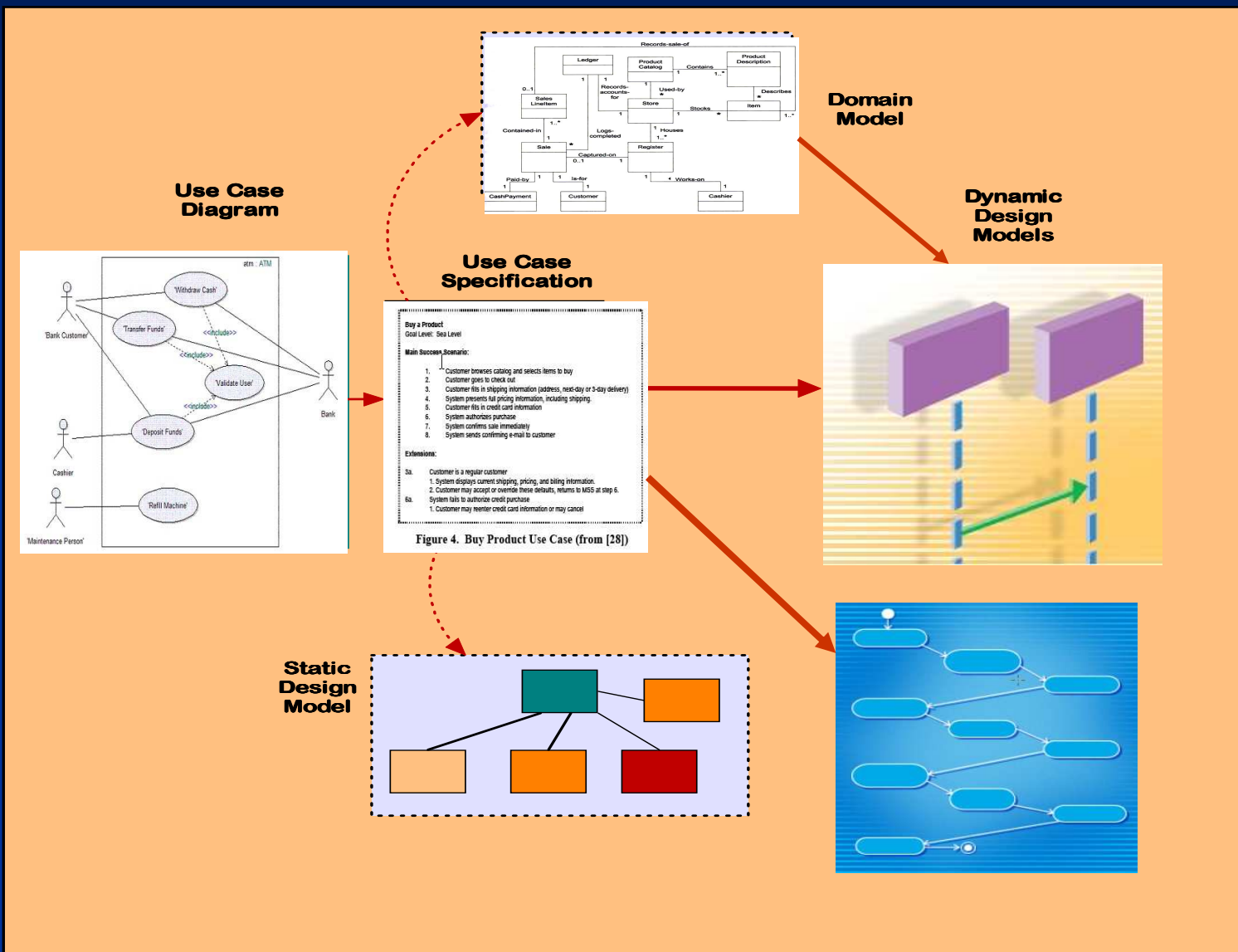


Entidades do Domínio





Em seguida: ligação das partes



A definição coerente de todos estes modelos corresponde à determinação das características funcionais do sistema

CASE STUDY