

47006- ANÁLISE E MODELAÇÃO DE SISTEMAS
1st Semester, 2018/19

Modeling Activities in UML

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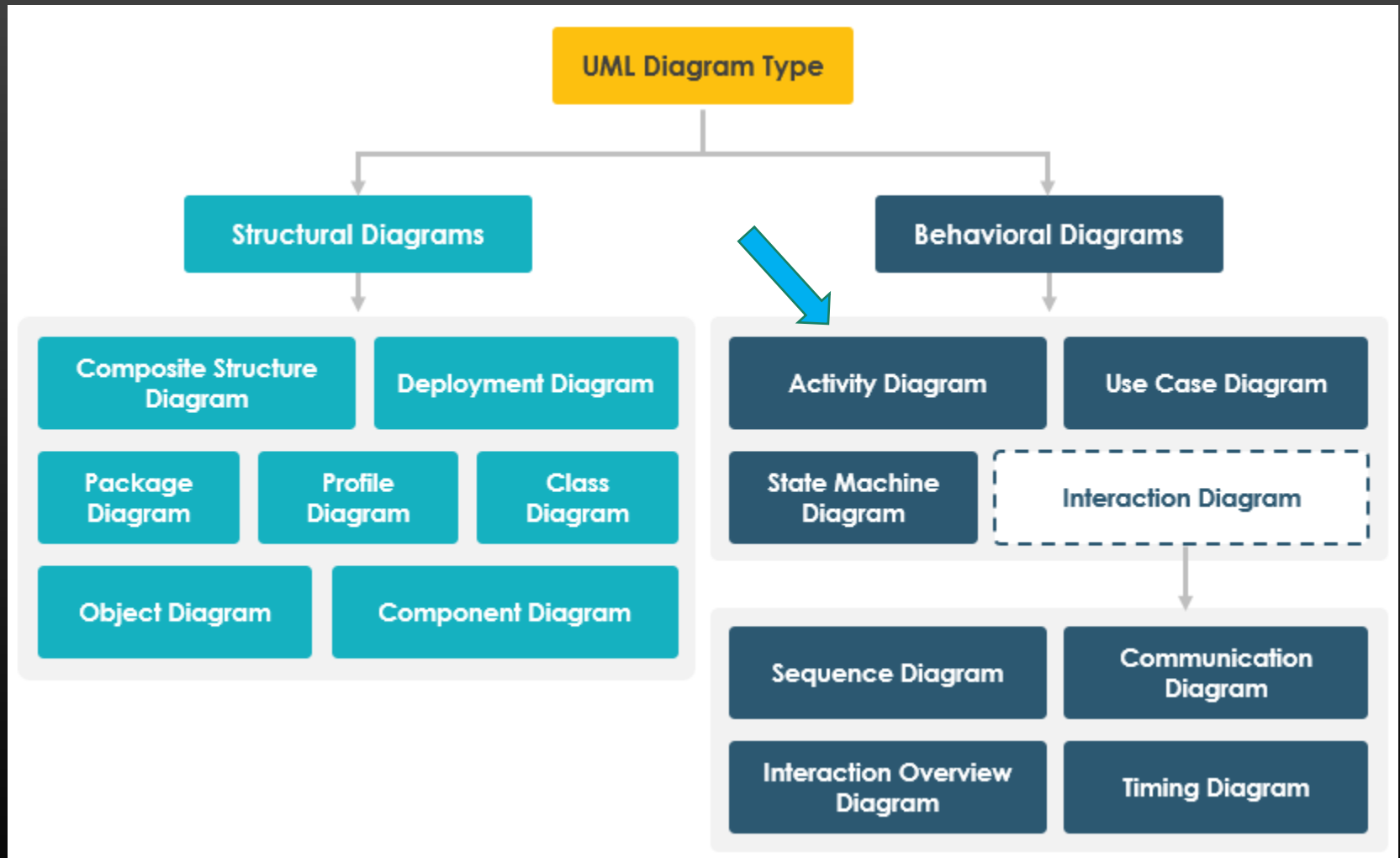
Learning objectives for this lecture

Read and create Activity Diagrams

Distinguish structured activities from actions; control flows from data flows

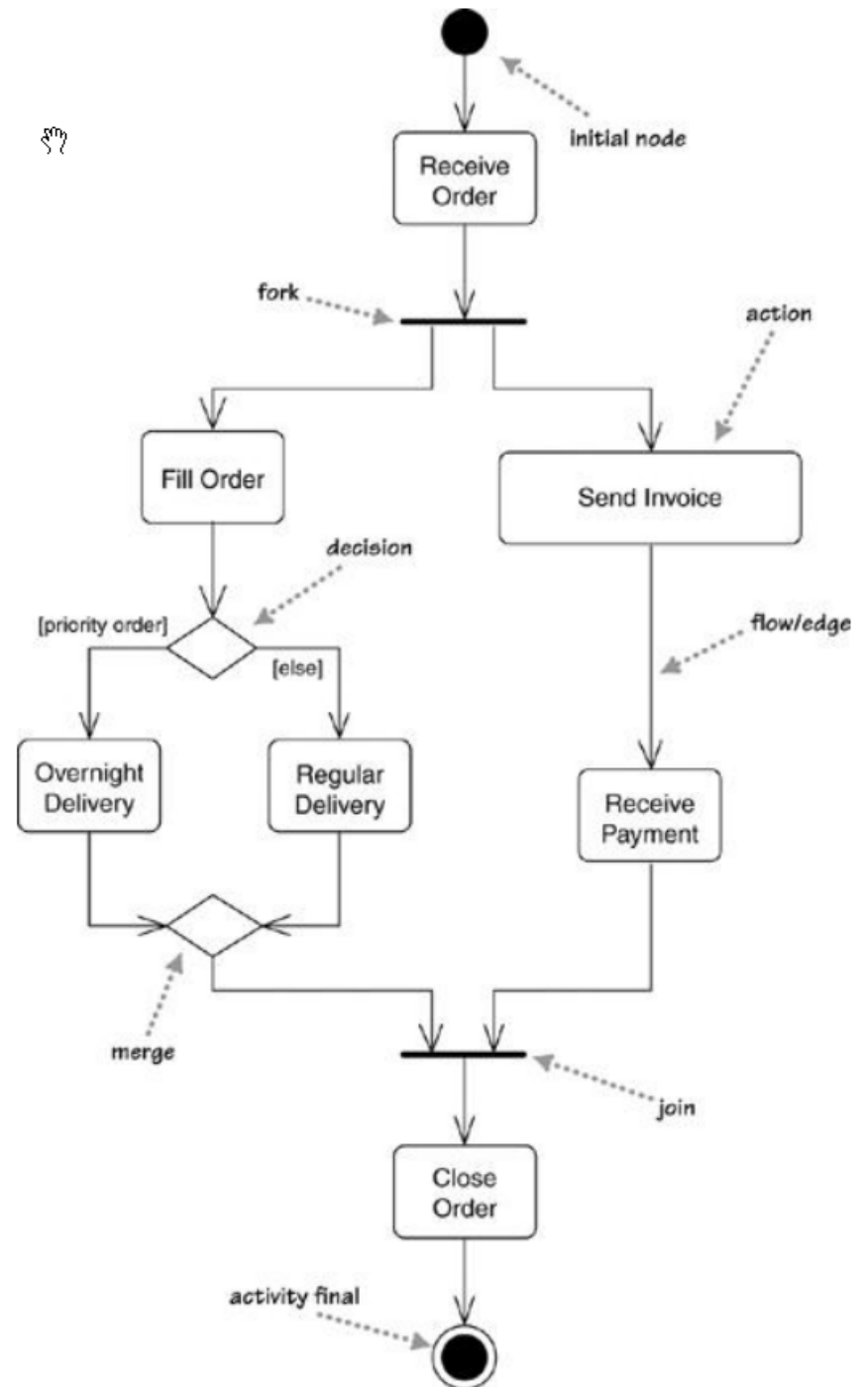
Identify when to use Activity modeling

Diagramas da UML 2.x



<https://www.visual-paradigm.com/guide/uml-unified-modeling-language/overview-of-the-14-uml-diagram-types/>

Elementos do diagrama de atividades



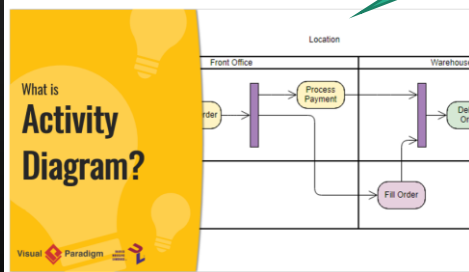
Os diagramas de atividade mostram o fluxo de ações (e de dados)

Quando aplicar?

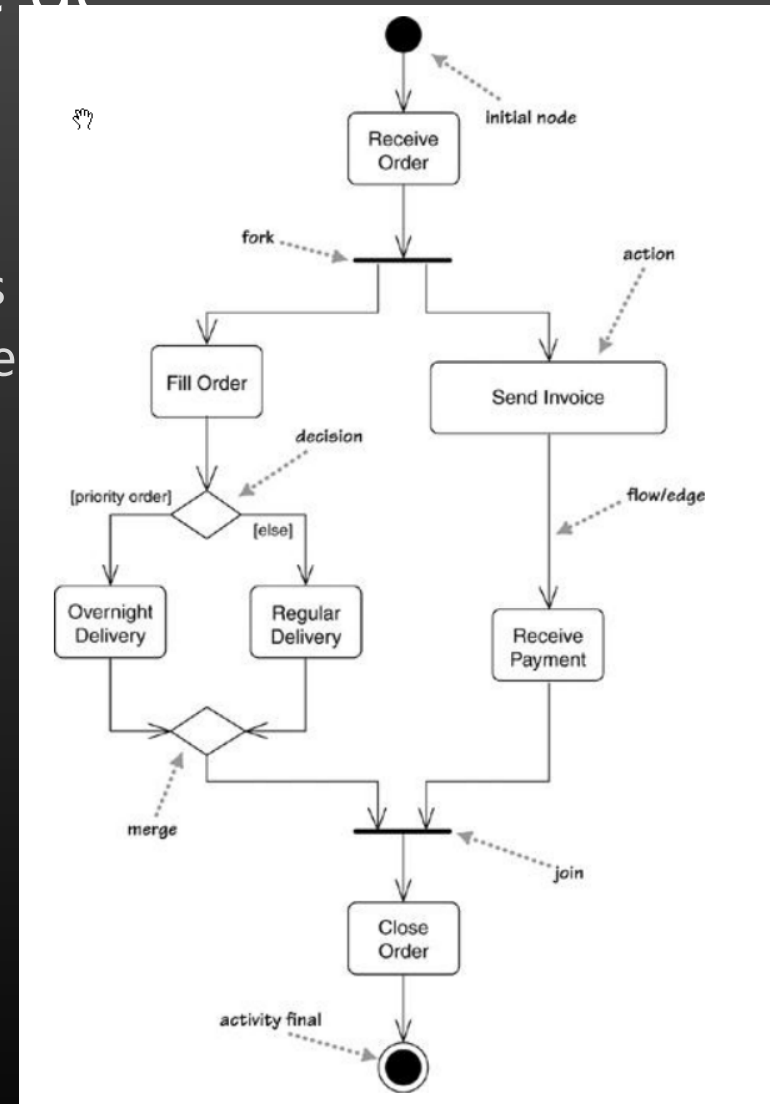
- Modelar fluxos de trabalho/processos
- Modelar processos computacionais: e complexo

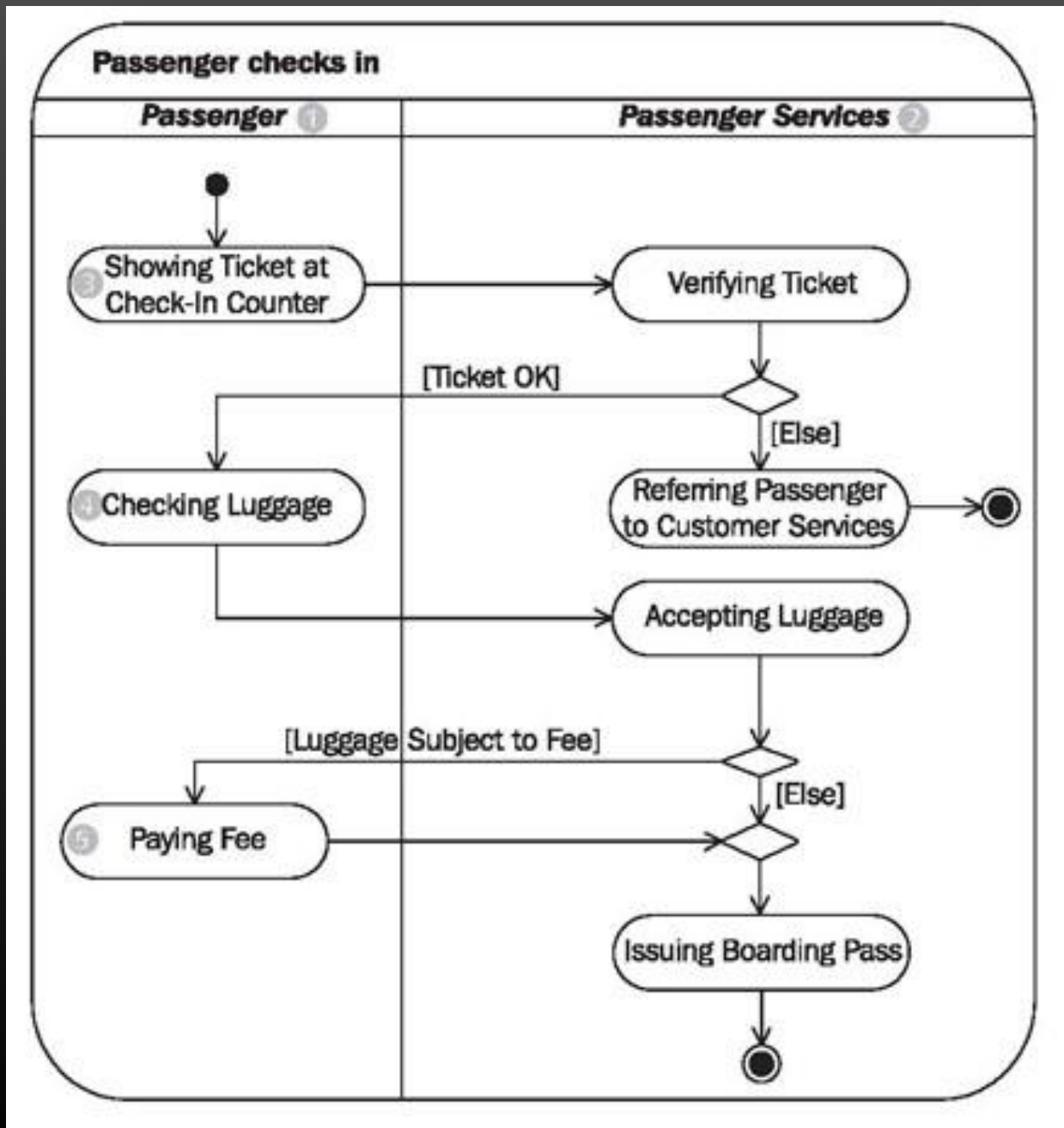
Ver explicação tutorial aqui!

What is Activity Diagram?



<https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-activity-diagram/>





Os diagramas de atividade mostram o fluxo de ações (e de dados)

Quando aplicar?

- Modelar fluxos de trabalho/processos de negócio

- Descrever um algoritmo complexo

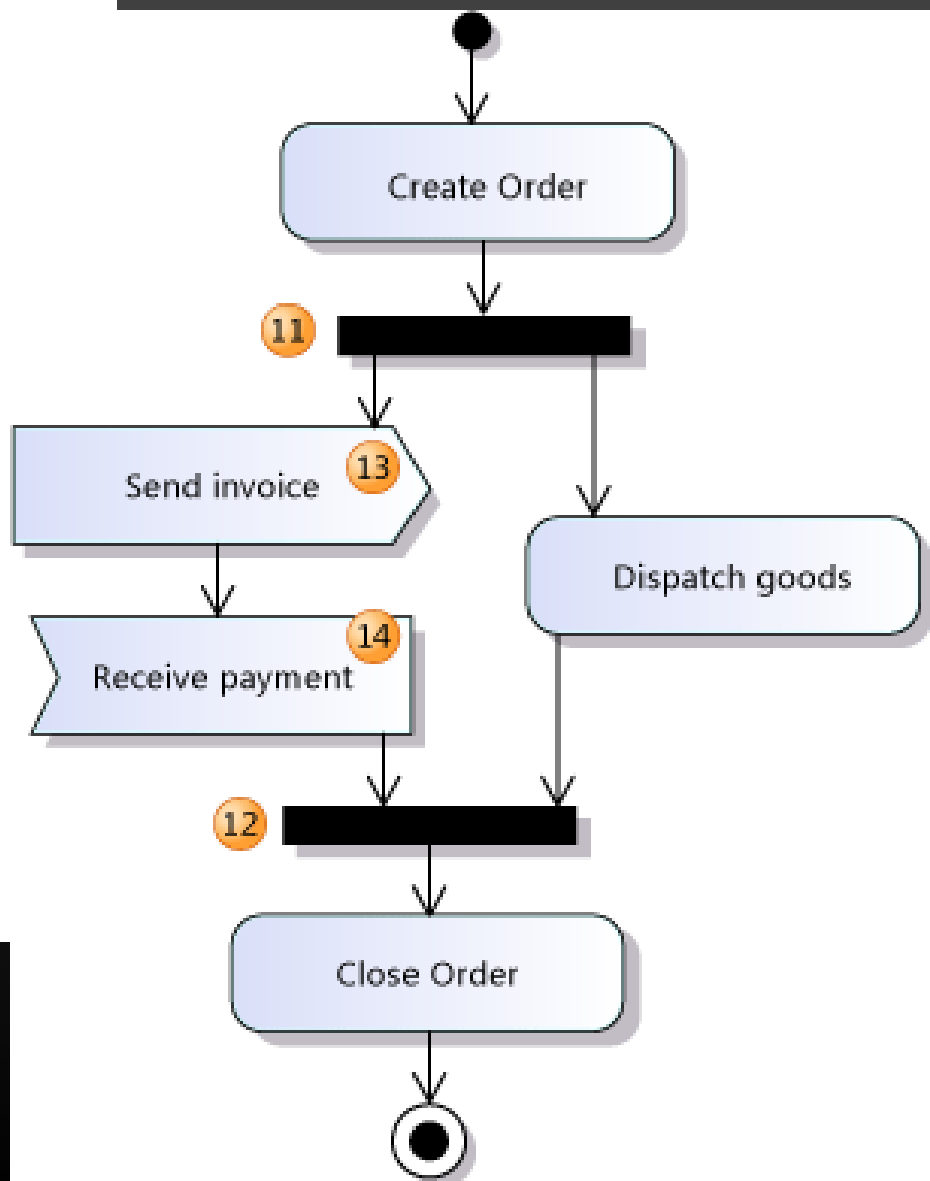
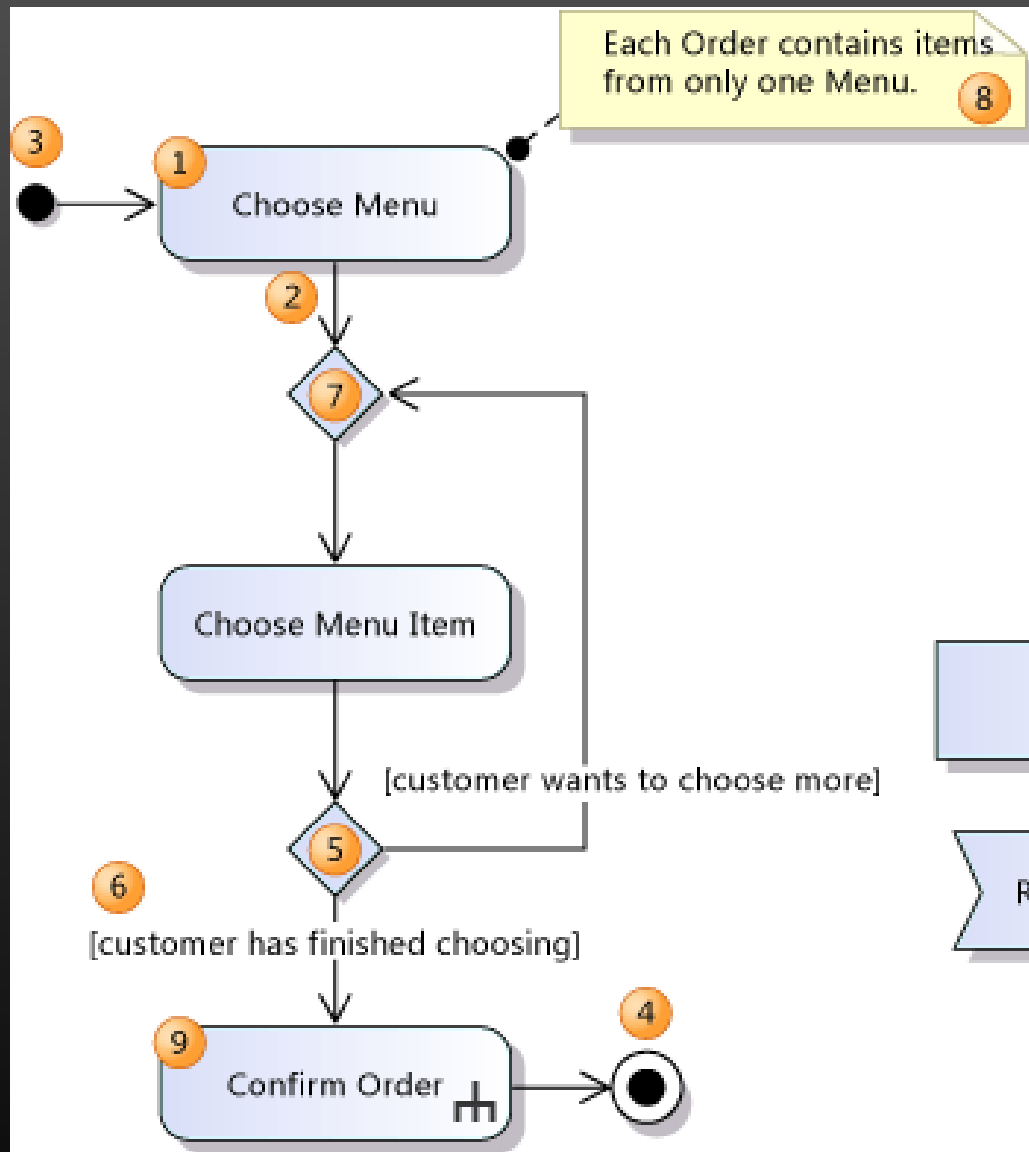
- Descrever a sequência de interações entre atores e o sistema sob especificação, num caso de utilização

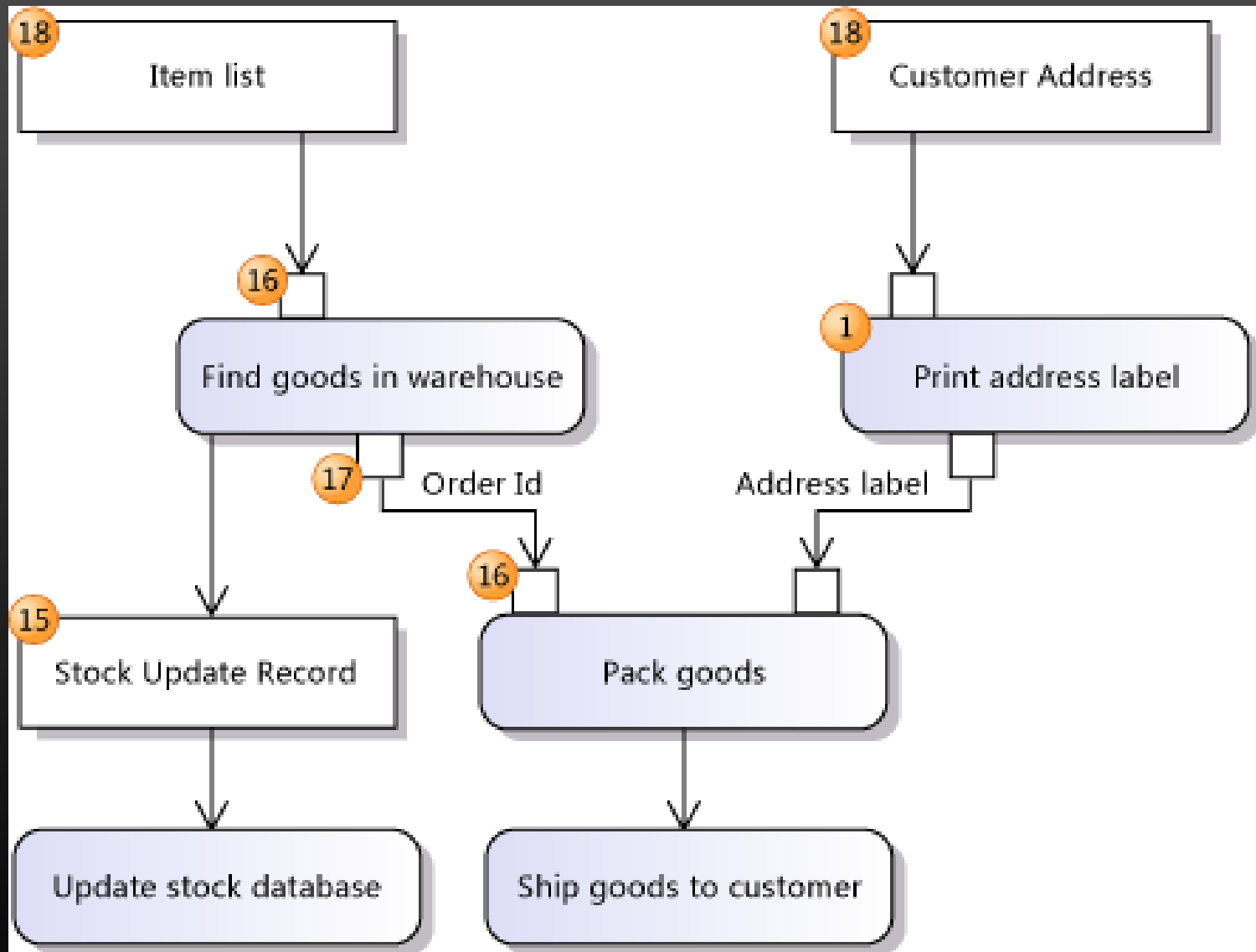
- Pode ser usado para descrever os processos organizacionais existentes / novos

- Neutro em relação à programação

- Bom a captar papéis

- Pode captar o fluxo de dados também





Definido na UML.

Diagram	Description	Advantages	Disadvantages
System flowchart	Earliest form for depicting sequencing of activities.	<ul style="list-style-type: none"> ■ Intuitive. Each type of input and output is clearly marked with its own symbol. ■ Includes logic symbols. 	<ul style="list-style-type: none"> ■ Not compliant with UML. ■ Can be hard to learn (many symbols).
Activity diagram	UML tool for describing logic. Used to describe entire system, a use case, or an activity within a use case. Has two versions: <ul style="list-style-type: none"> ■ Activity diagram without partitions (swimlanes): Does not show who does what. ■ Activity diagram with partitions: shows who does what. 	<ul style="list-style-type: none"> ■ Part of UML standard. ■ Can handle many situations in one diagram. ■ Simple diagramming conventions. ■ Encourages thinking about opportunities for parallel activities (more than one activity going on at the same time). 	<ul style="list-style-type: none"> ■ Ability to handle many situations can lead to a diagram that is too complex to follow.
Business process diagram (BPD)	Business process modeling notation (BPMN) tool for describing workflow	<ul style="list-style-type: none"> ■ Part of BMN standard, managed by the OMG ■ Rich symbol set can model complex and subtle workflow requirements better than activity diagrams. 	<ul style="list-style-type: none"> ■ Not UML-compliant ■ Difficult to understand without prior training

Readings & references

Core readings	Suggested readings
<ul style="list-style-type: none">• [Dennis15] – Chap. 4	<ul style="list-style-type: none">• Vídeo tutorial com uma explicação dos Diagramas de Atividades• Visual Paradigm tutorials: what is the Activity Diagram• MSDN, “Developing models for software design”