Notes for Proj#1

Functional and Non-Functional Requirements

Ref: ftp://ftp.software.ibm.com/software/rational/web/whitepapers/RAW14023-USEN-00.pdf

Use-case

- Use-case notation: ellipse
  - Box? => no mark
- Name as a specific verb phrase
  - Not in general such as “manage …”
  - Wrong name? => no mark
- Use-case at general enough level
  - Too general: “manage farm”
  - Too specific: “watering rice farm”, “watering corn farm”

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Use-case

A use case is the specification of a set of actions performed by a system, which yields an observable result that is, typically, of value for one or more actors or other stakeholders of the system (UML 2).

A less formal definition might be: A use case is a list of steps that specifies how a user interacts with the business or system while keeping in mind the value that this interaction provides to the user or other stakeholders. Simpler still: A use case is the story of how the business or system and the user interact.

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Use-case

Tip: Human actors are the most important element

The stick figures employed in use case diagrams are referred to as *actors*. They indicate any person (or role), other system or perhaps even a device that is outside the system being built but that interacts with it. It is the human actors that represent the most interesting and difficult interactions for most systems, and the human/system interactions are where the real value of the use case comes into perspective. The functionality put into a use case will help actors do their job or task better—in a significant way.

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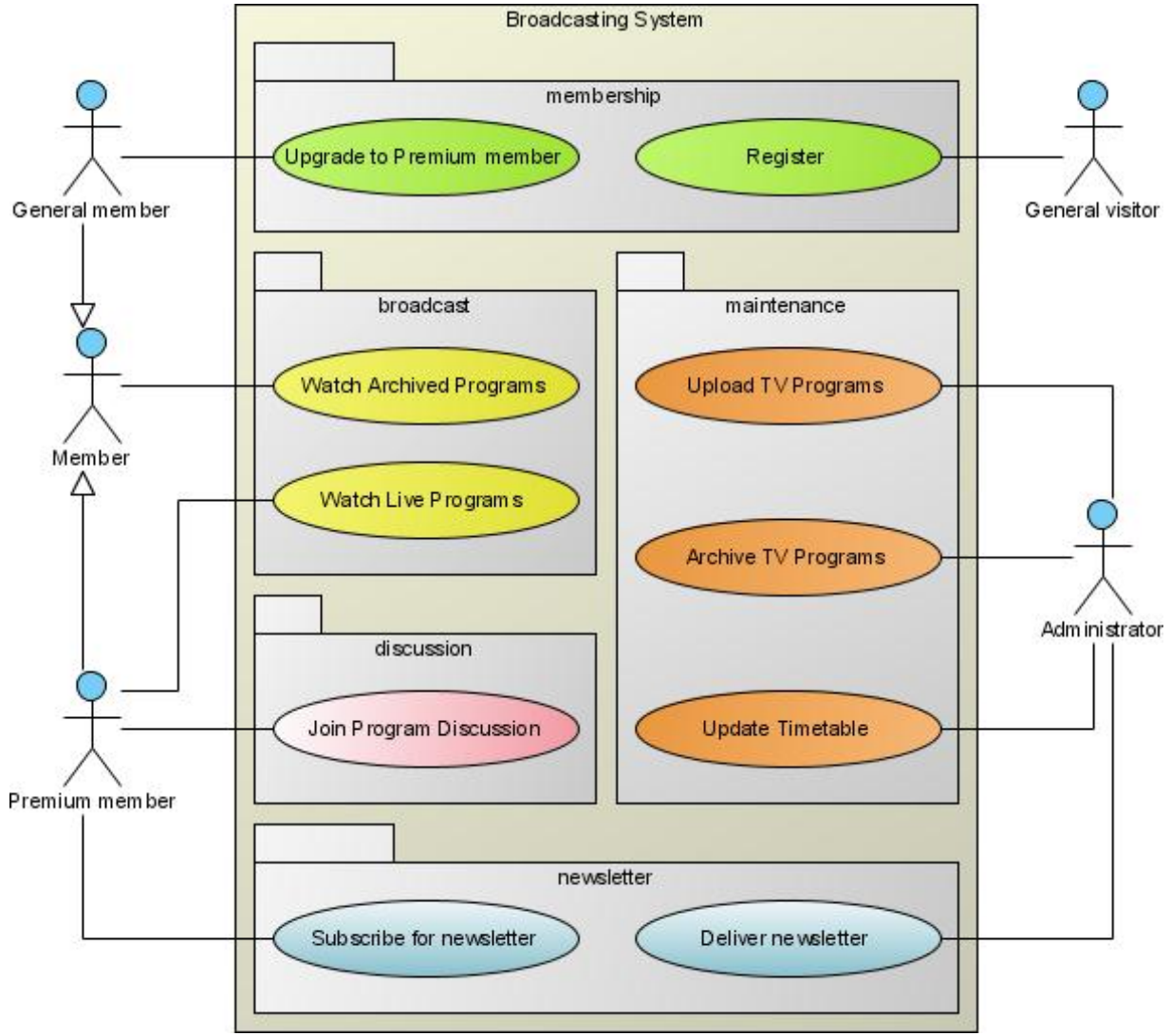
Use-case

- Use actor generator when necessary:
  - A manager interacts as farmer, and some more: manager is a (generation of) farmer



Ref: ftp://ftp.software.ibm.com/software/rational/web/whitepapers/RAW14023-USEN-00.pdf

Use-case

- Use-case detail:
  - Step-by-step: interaction between actor and the (software) system
  - General enough
    - Fill a form vs. ask-and-answer

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Use-case

- Include and extend: only when necessary
  - Include: re-use use-case (share use-case)
  - Extend: to extend a use-case
  - NO include and/or extend to explain the detail of a use-case
  - NO: “include Login”
  - Notation and the direction of dash-arrow:
    - A ---- <<include>> ----> B: do A, in which, do B, (back to A to end the use-case)
    - A <---- <<extend>> ---- B: do A, extends to B, (end at B)

Non-functional

- Use the category in the slide or “non-functional requirement example” mentioned in the lecture
  - (https://requirementsquest.com/wp-content/uploads/2017/01/Nonfunctional-Requirement-EXAMPLES.pdf)
- Only for the (software) system
  - NO such thing “Sensors need to be maintained twice a year”, “Software price does not exceed …”, “Staffs need to be trained and should be in uniform”, ...
  - Has metrics
  - Has thresholds or lists: min, max, list of …