Unified Modeling Language
Exercise: A Frequent Flyer Program

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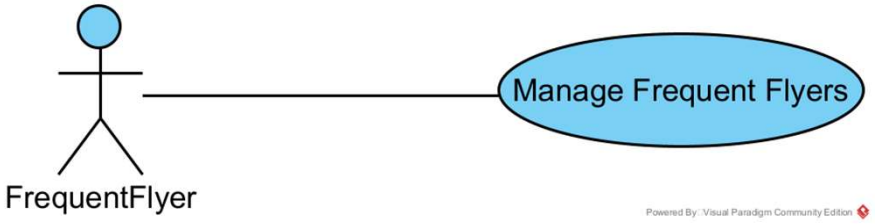
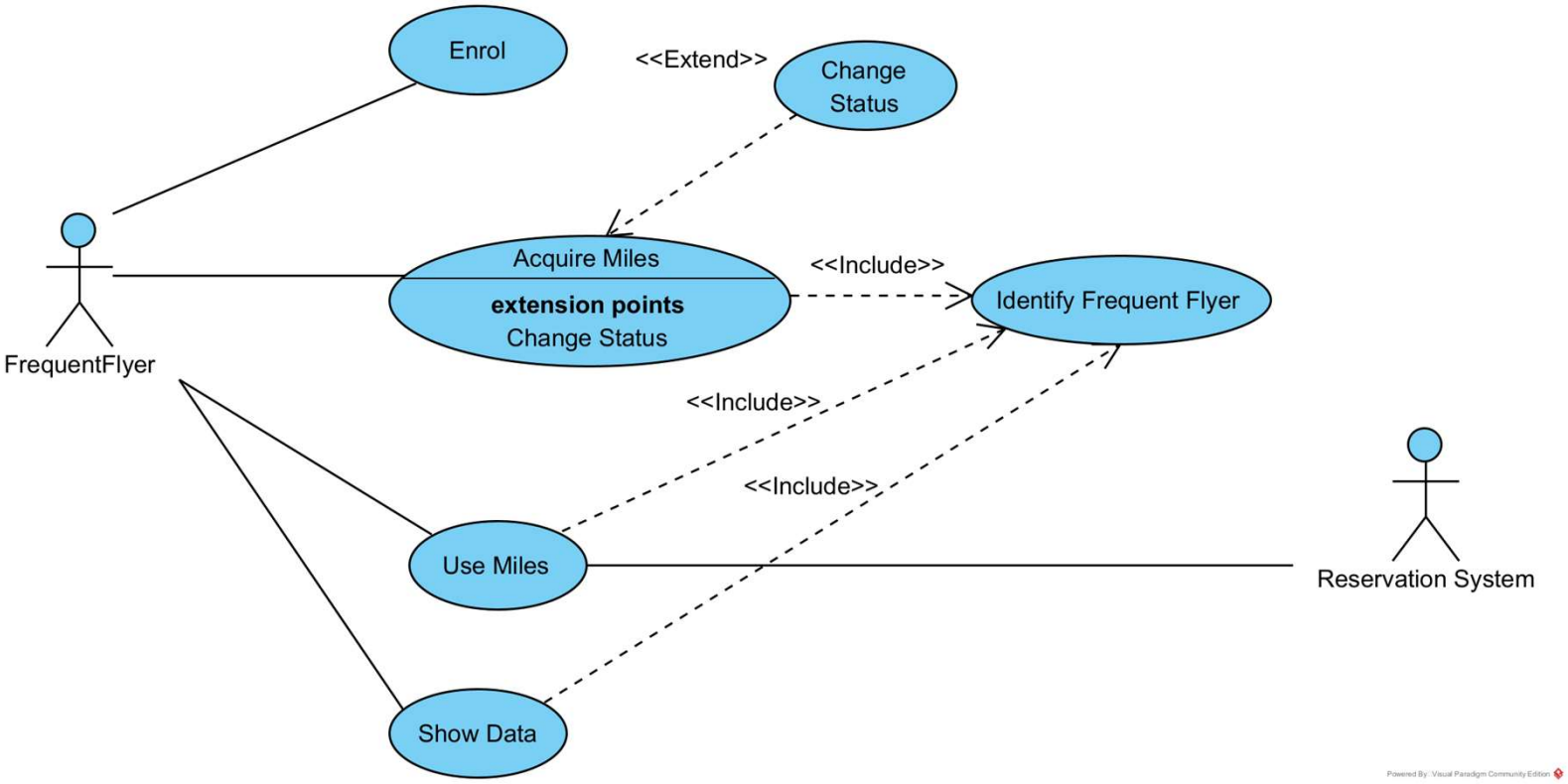
Use Case Diagram: Version 1

- Use Case Diagram con un solo use case
  - troppo generico
    - qualunque sistema potrebbe essere specificato in questo modo
  - soluzione del tutto inutile



Use Case Diagram: Version 2

- Diagramma più dettagliato



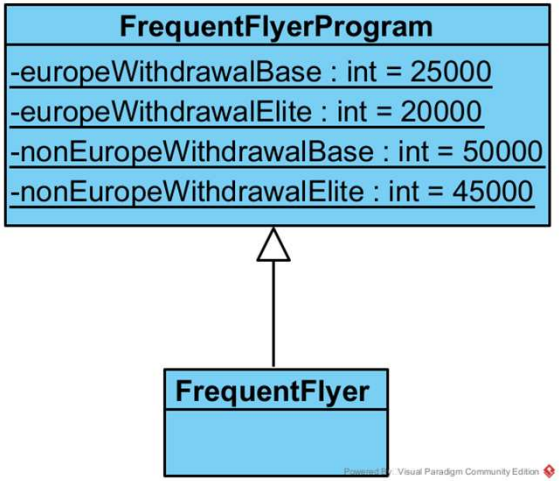
Class Diagram: Version 1

- All in one class: meaningless solution

Class Diagram: Version 2

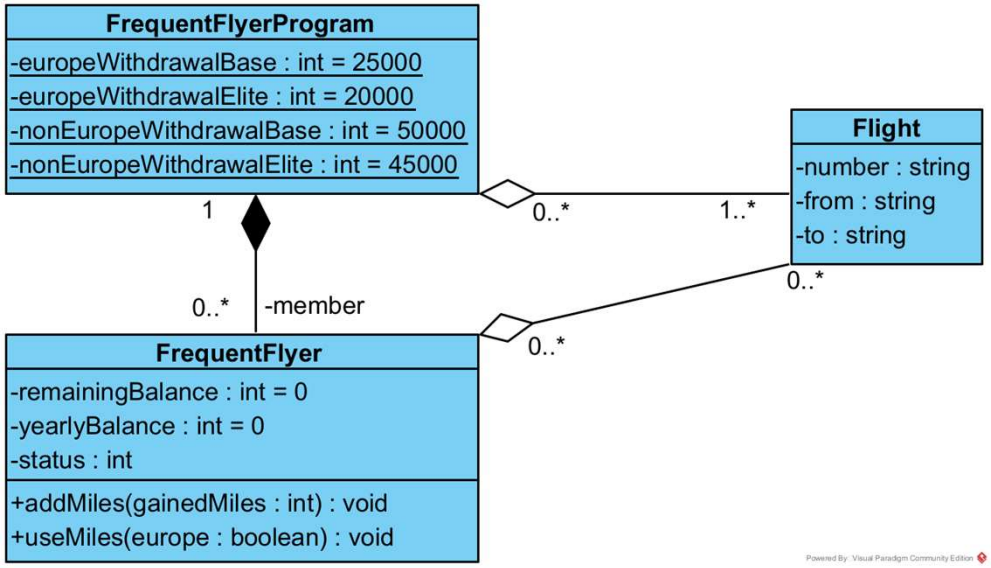
- Error: a frequent flyer IS NOT a frequent flyer program

- Note: here and in the following diagrams we omit that FrequentFlyer can be modeled as a subclass of Person



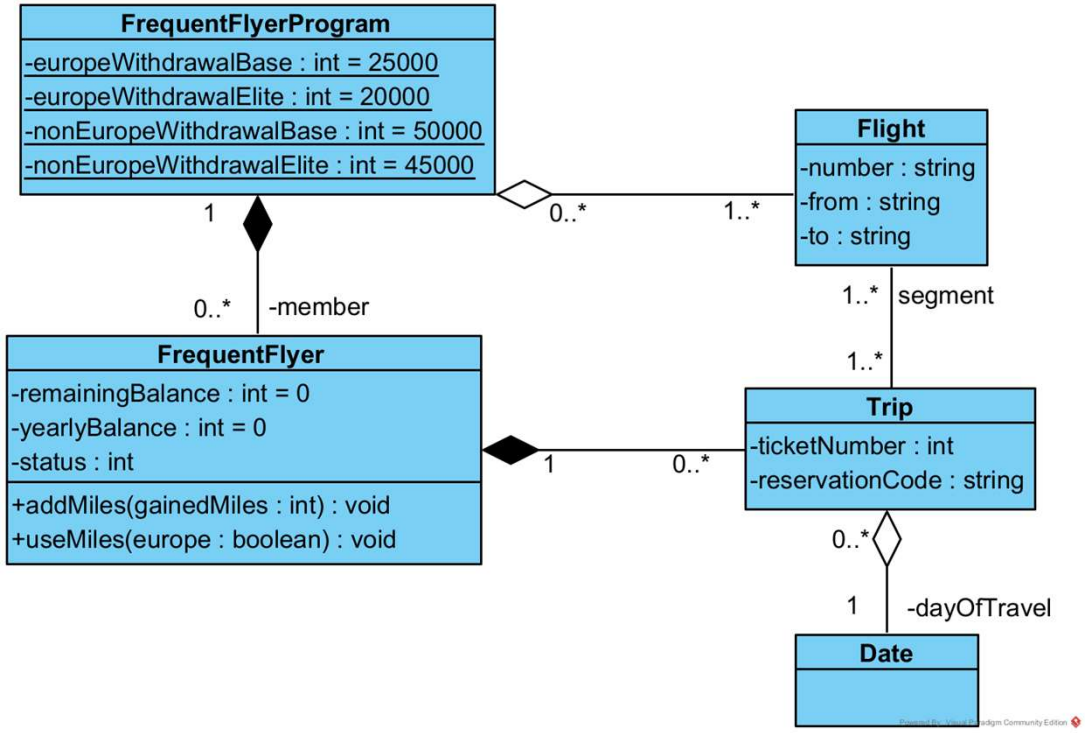
Class Diagram: Version 3

- Diagram that clarifies the relationships between FrequentFlyerProgram and FrequentFlyer
- A relationship between FrequentFlyer and Flight might not be sufficient



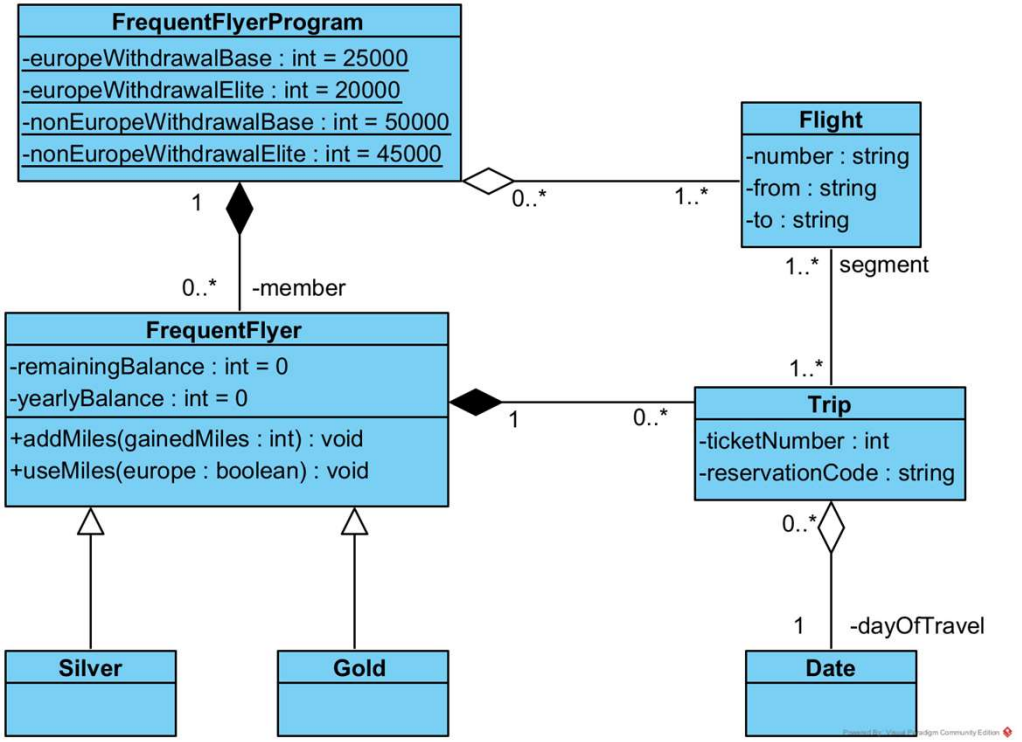
Class Diagram: Version 4

- Trip contains all details of each FrequentFlyer's trip
  - the different types of FrequentFlyer are still missing



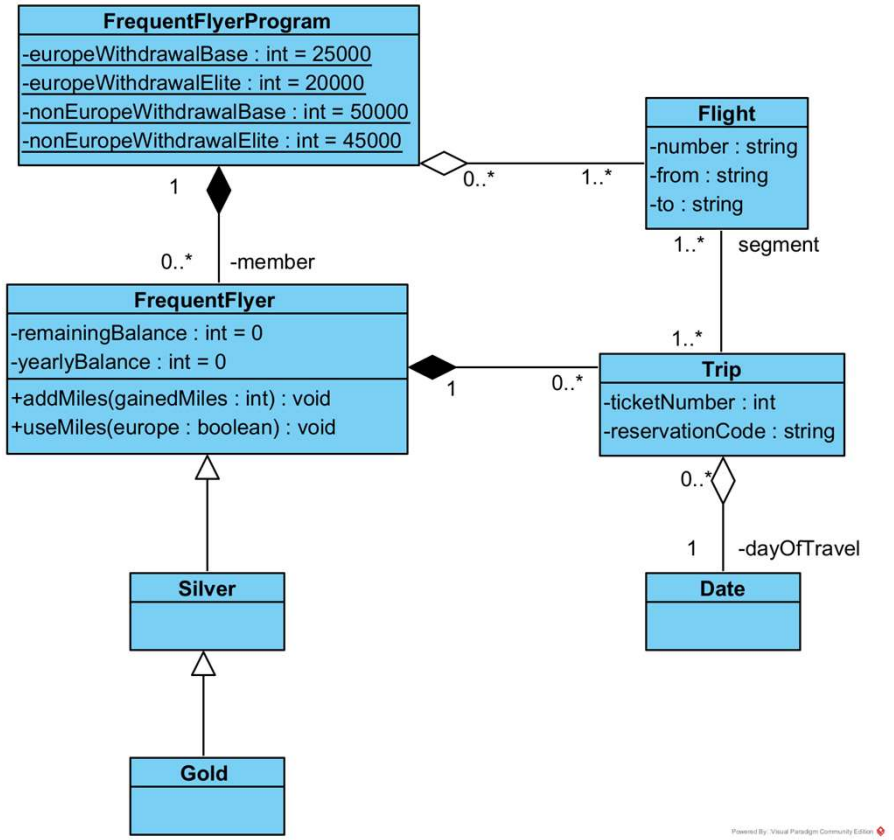
Class Diagram: Version 5

- Two FrequentFlyer types
  - base (non-Silver and non-Gold) FrequentFlyer is modeled by class FrequentFlyer



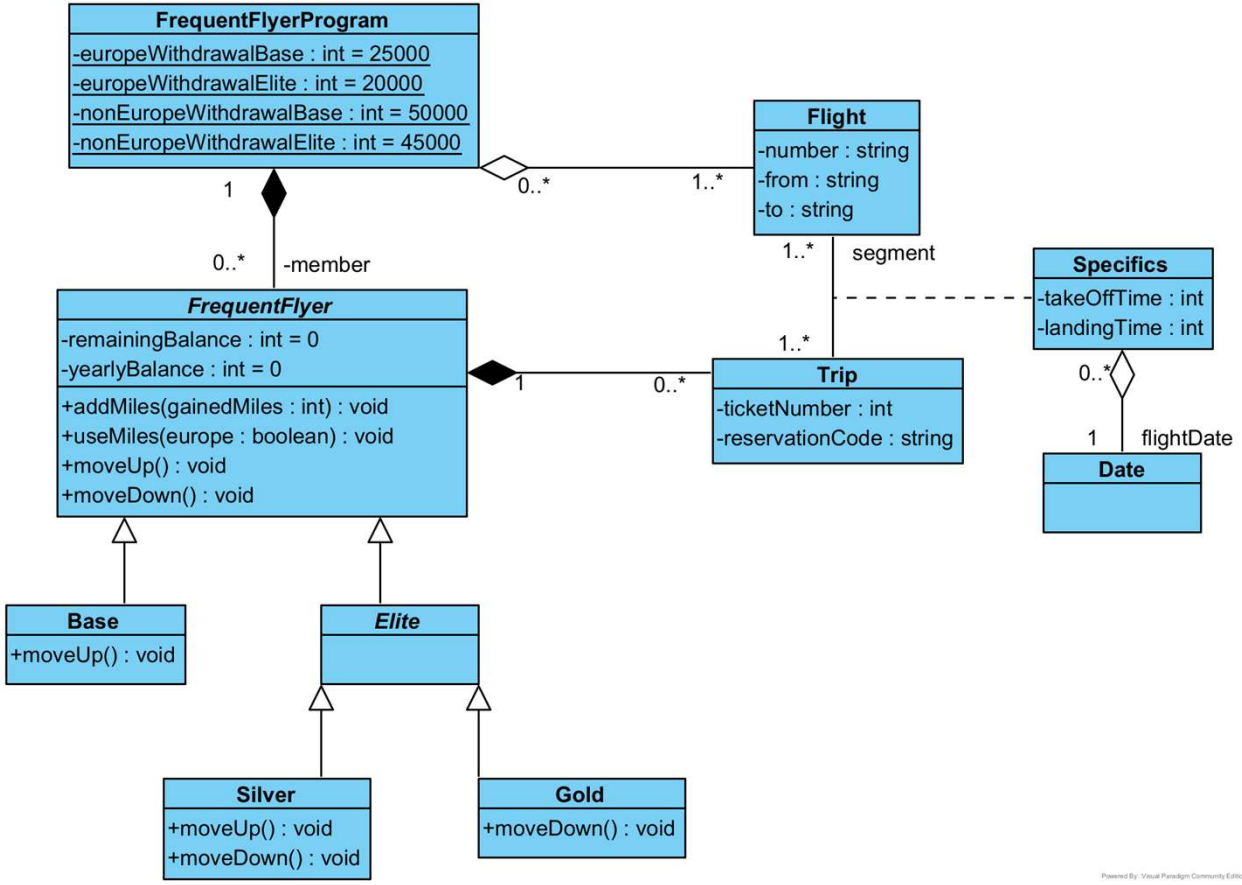
Class Diagram: Version 6

- More logically consistent solution
  - if Silver members are also Base members, then Gold members are Silver members too



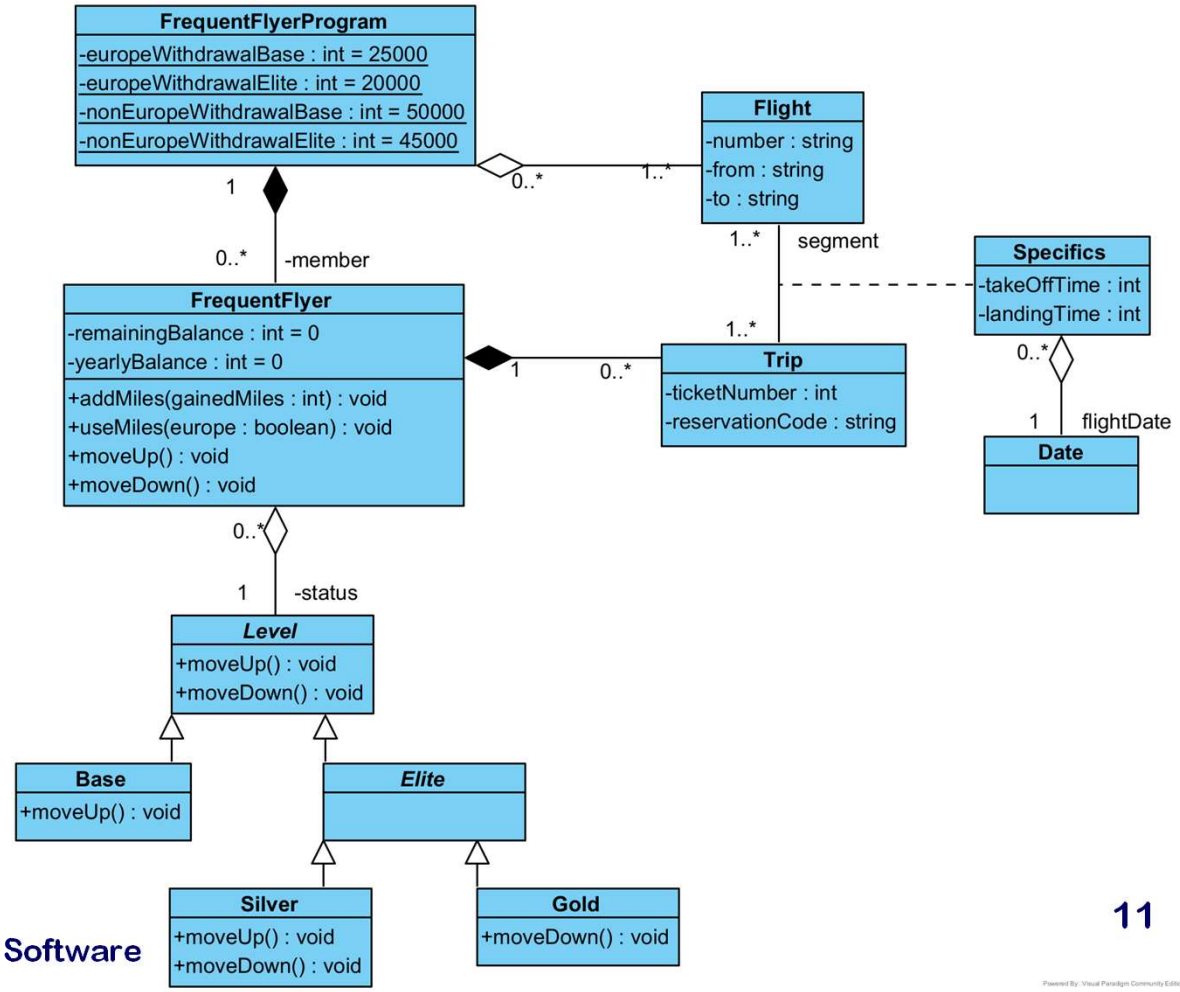
Class Diagram: Version 7

- Separation between frequent flyer classes
  - they can evolve separately



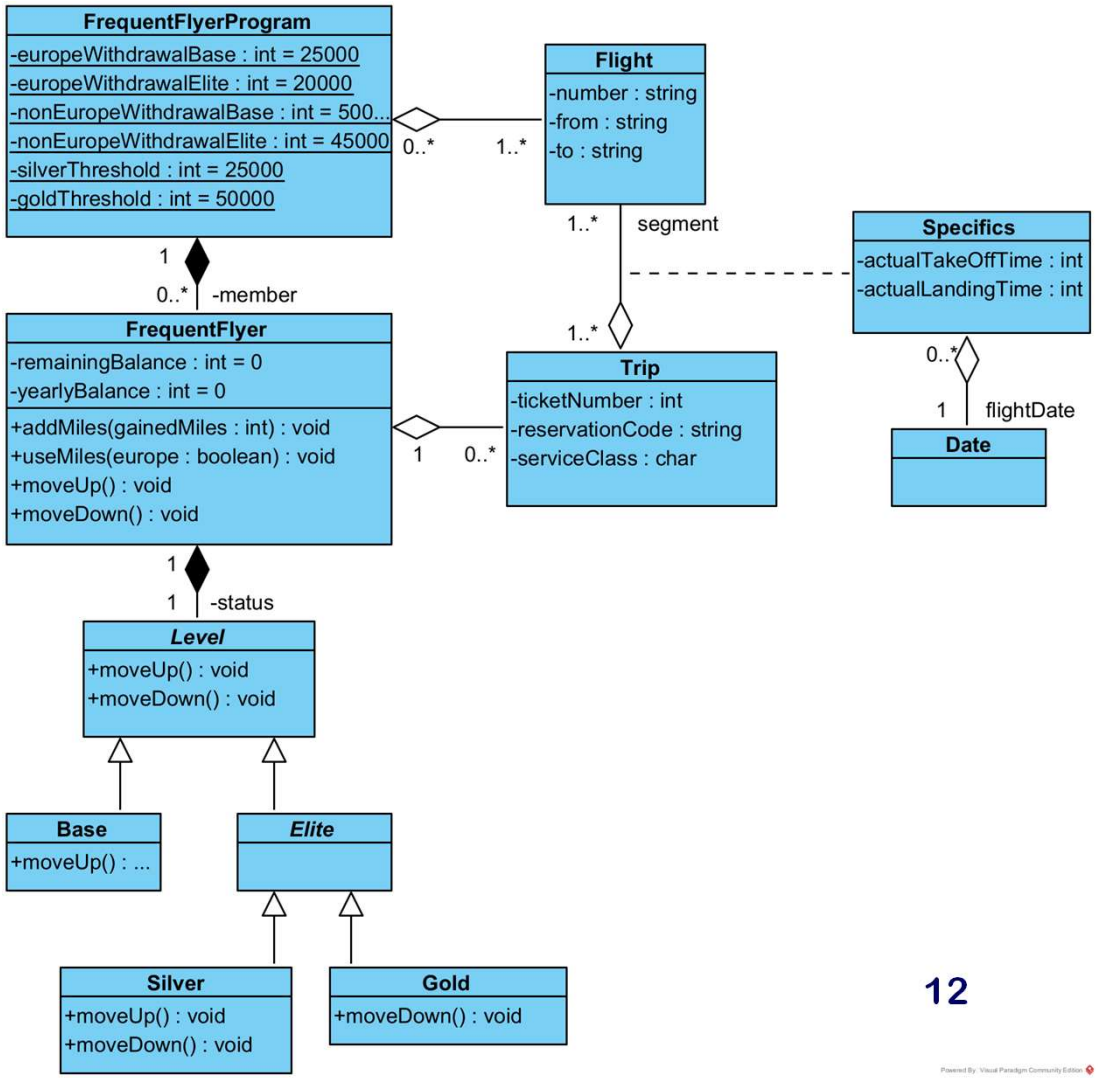
Class Diagram: Version 8

- Use of delegation
  - State design pattern

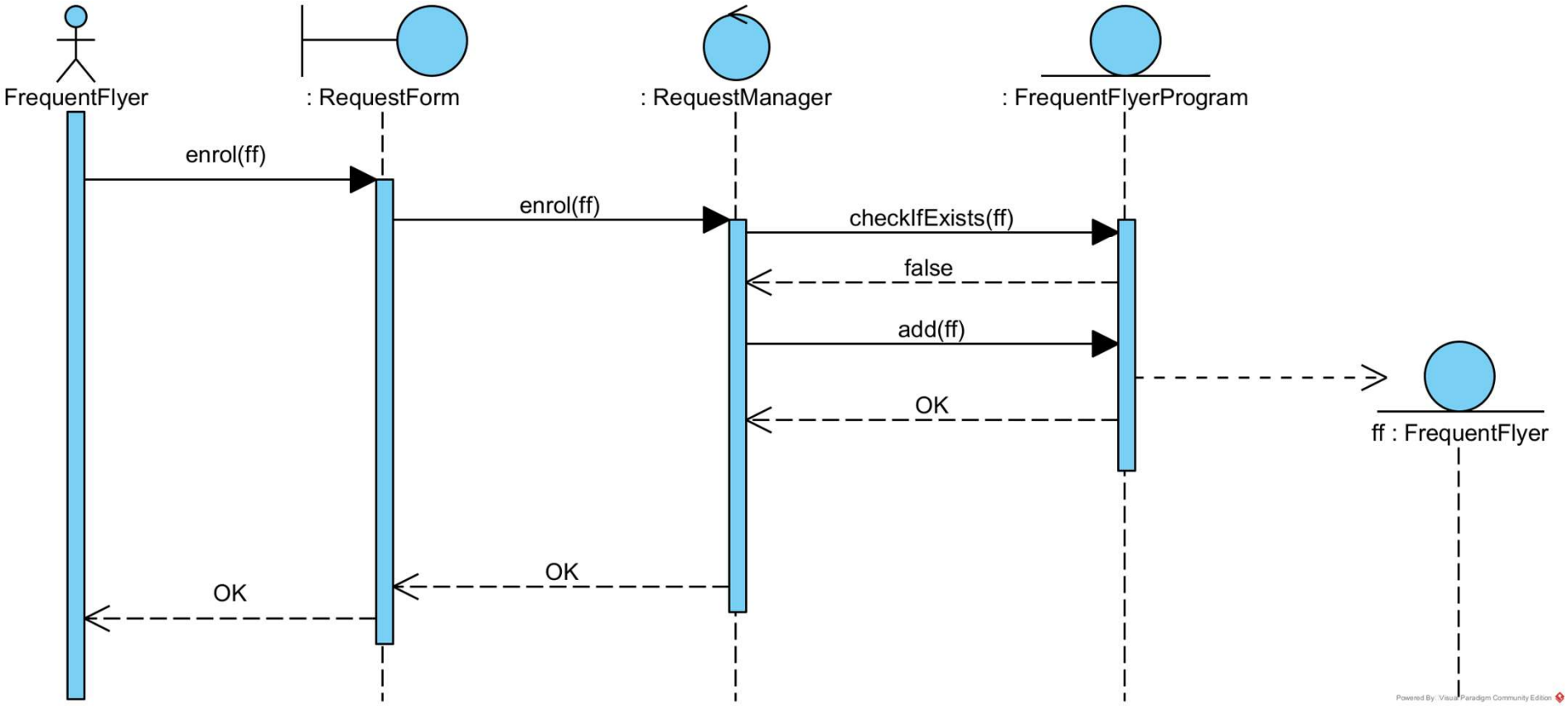


Class Diagram: Version 9

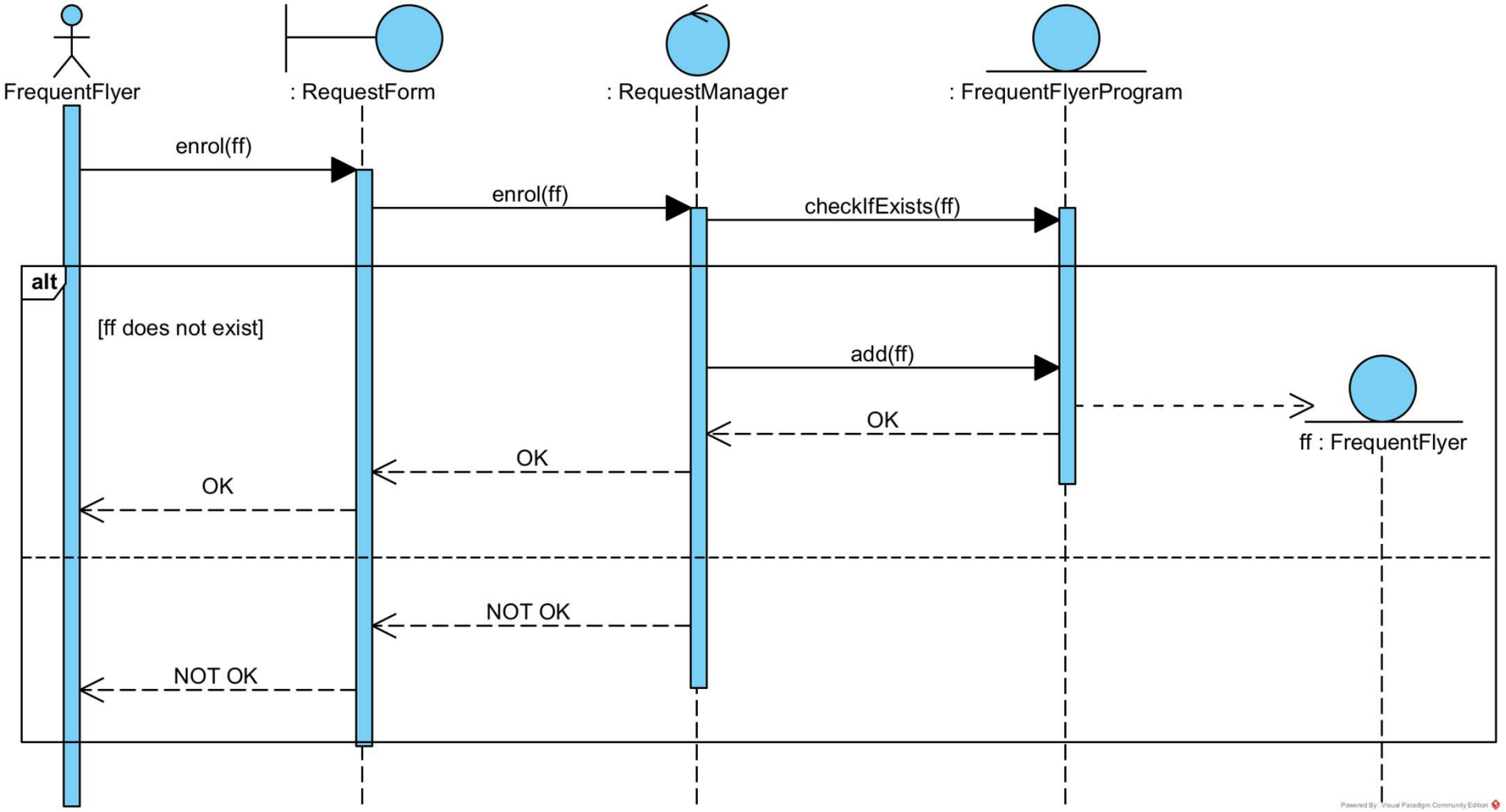
- More precise relationship between FrequentFlyer and Level
  - composition



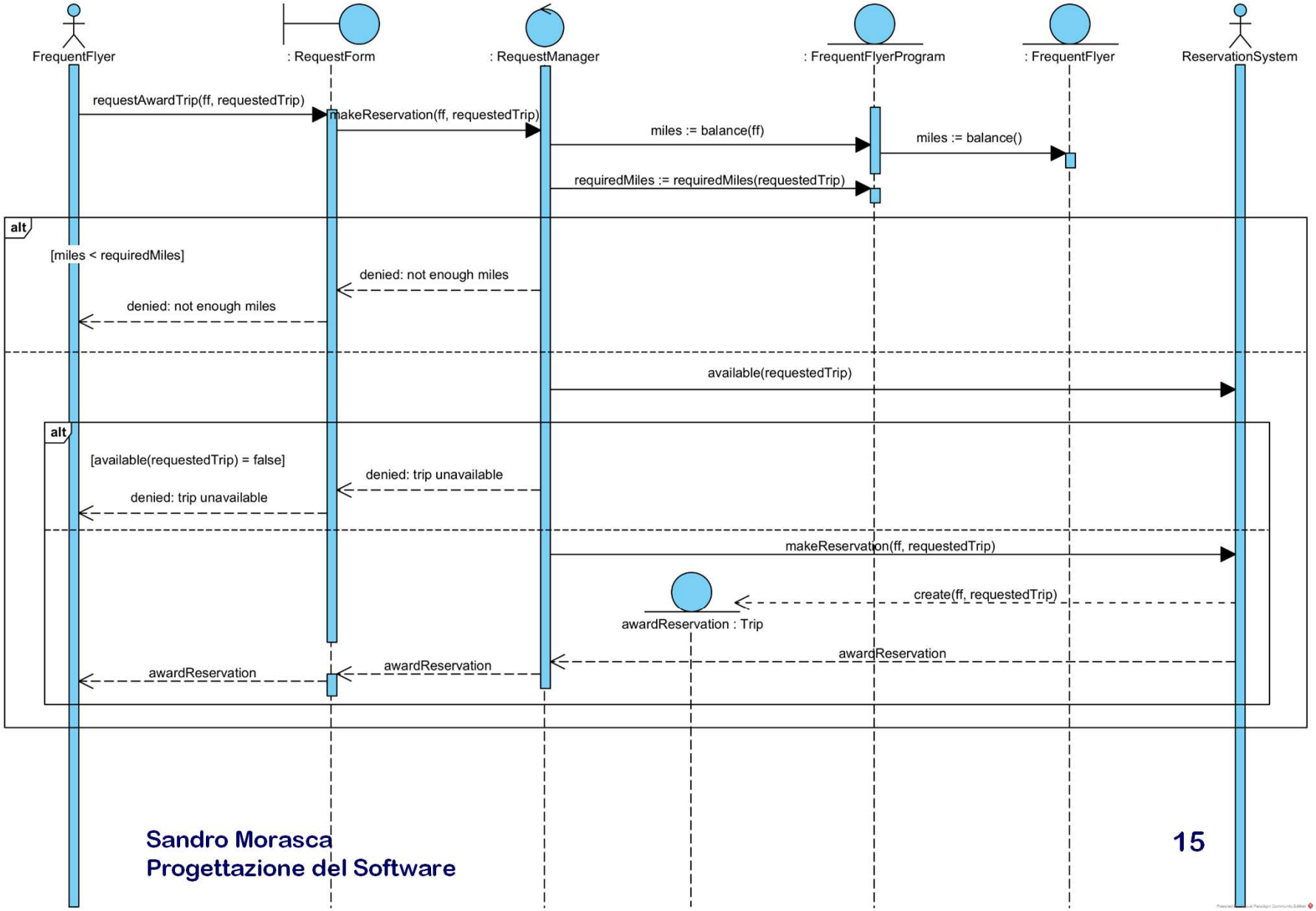
Sequence Diagram: Enrol 1



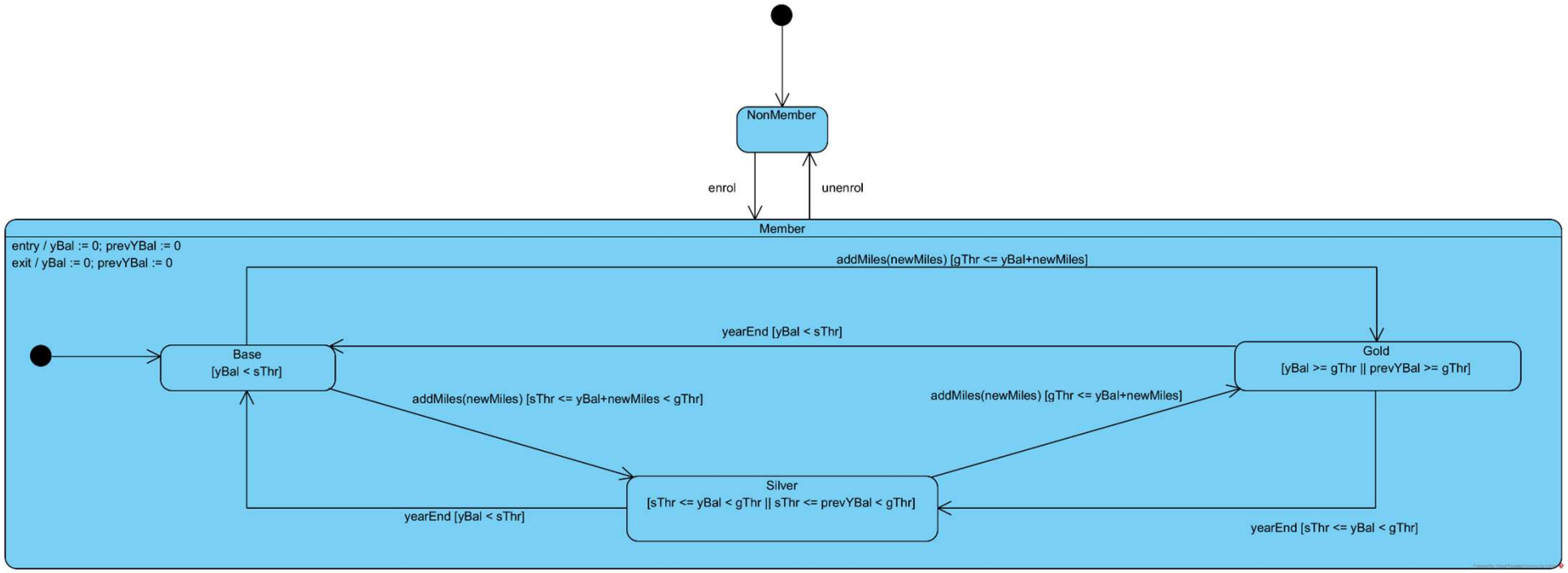
Sequence Diagram: Enrol 2

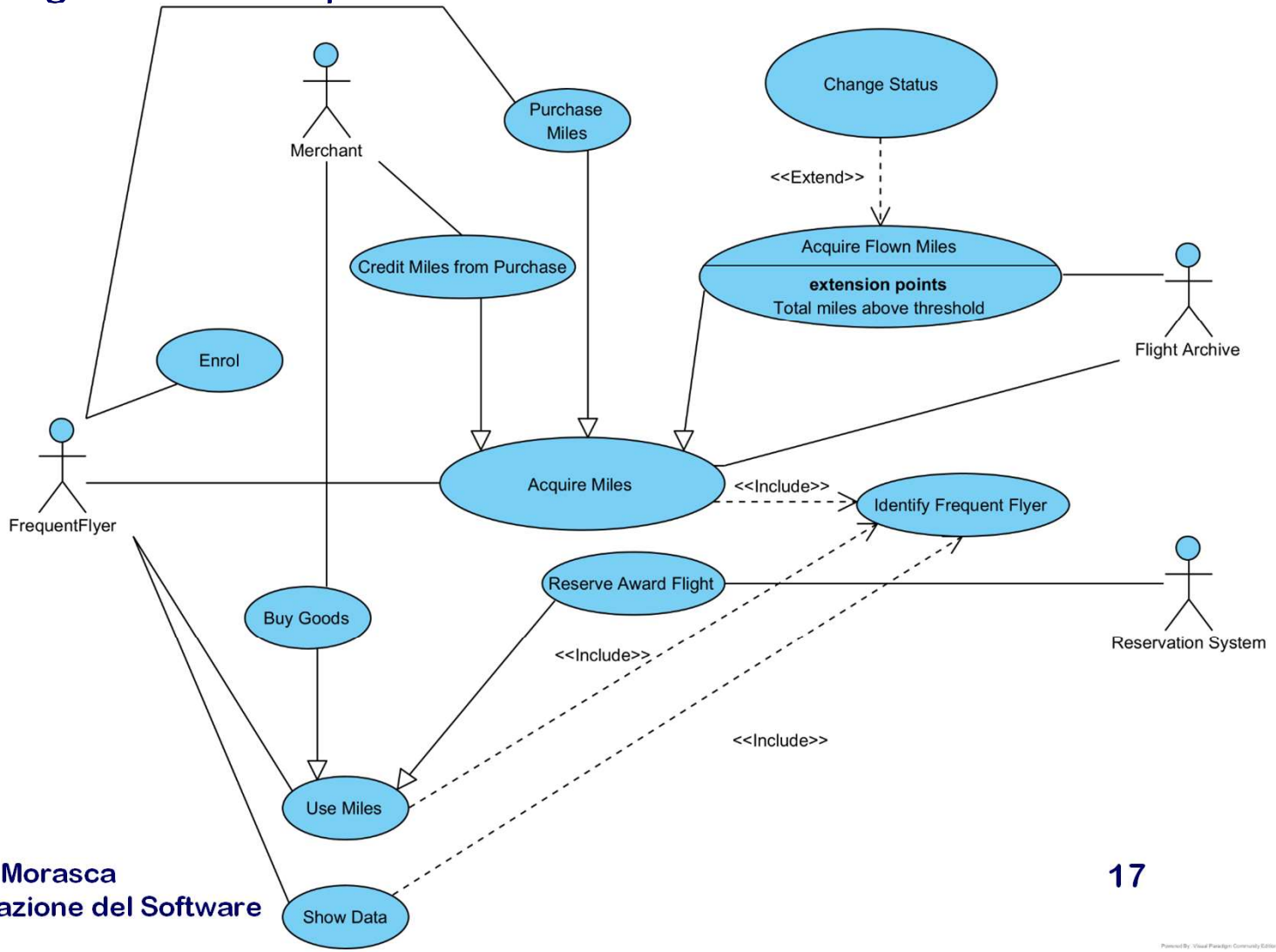


Sequence Diagram: Award Trip



State Diagram



Use Case Diagram: Version 3

- Diagram after requirement modifications