LABORATORIO DI INGEGNERIA DEI SISTEMI SOFTWARE

Requirements

Design and build a software system (named ***workshift***) that allows to manage a machine according to three turns:

1. in the first turn (in the morning) the machine is able to handle messages (dispatches) of type m1:m1(V)
2. in the second turn (in the afternoon) the machine is able to handle messages (dispatches) of type m2:m2(V)
3. in the third turn (in the nigth) the machine 'sleeps'

Messages of types m1 and m2 can be sent by external entities at every time

Requirement analysis

Our interaction with the customer has clarified that the customer intends:

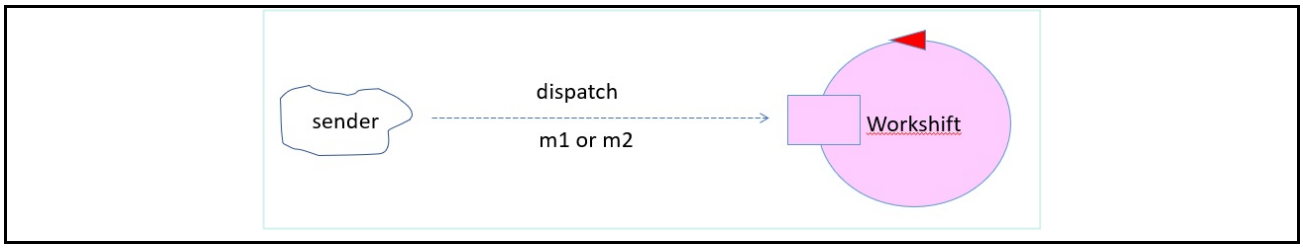
- for **turn**:time interval in which the machine is able to handle a type of message.;
- for **morning**:period of time between 05:00 and 13:00.
- for **afternoon**:period of time between 13:00 and 21:00.
- for **night**:period of time between 21:00 to 05:00.
- for **the machine 'sleeps'**:the machine does not handle any type of message.
- for **machine** : a device able to receive message from network.
- for **external entities** : a device able to send message in the network

Problem analysis

Relevant aspects

1. We need to build a distributed system consisting of two macro-components:
   1. the (sender) external entities supplied by the client
   2. our application (workshift) that receive message from sender
2. Communication between the sender and the workshift is asynchronous
3. We estimate that the first prototype of the application should be able to be built in 4 hours(at most).

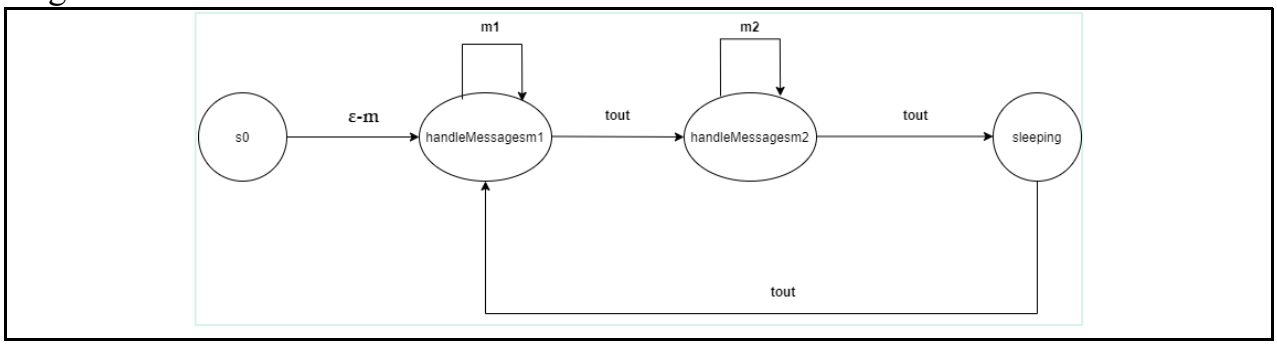
Logical architecture



Legend: legenda.pptx

Through the use of the QActor modeling language, a working model of the system based on actors behaving like finite state machines was created. Source: ***workshift.qak***

The behavior of the Workshift actor is represented by the following state machine diagram:



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