LABORATORIO DI INGEGNERIA DEI SISTEMI SOFTWARE
Case Study: es0-workshift

Introduction

Requirements

es0: 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.

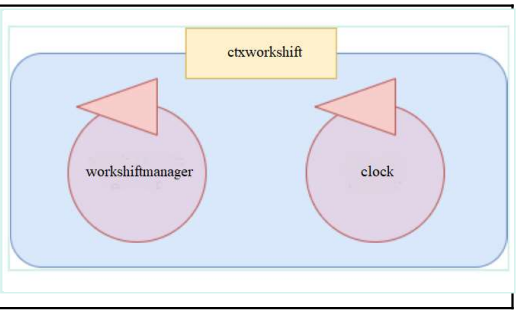
Requirement analysis

The consumer requires to desing and build a system using the QA-System that allows to manage two different type of messagges according on the time of the day. According to the requirements, days are divided in three different period:

- **morning**: the system has to handle **m1** messages and has to stores (if received) **m2** messages in order to process them in the appropriate period;
- **afternoon**: the system has to handle **m2** messages and has to stores (if received) **m1** messages in order to process them in the appropriate period; ;
- **night**: the machine can't handle any message but it can stores them in order to process them in the appropriate period;

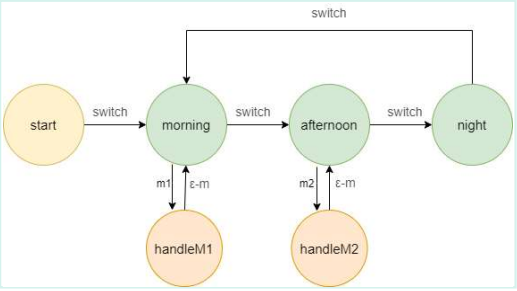
Other relevant aspects:

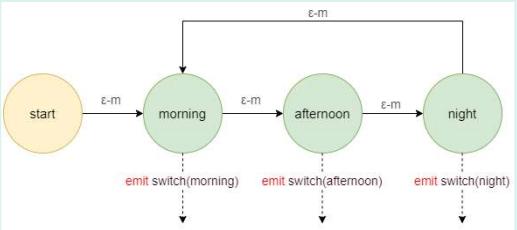
- The duration of the periods of the day is not specified by the customer
- Messagges can be sent by external entities: the QA-System provides the possibility to receive messages over the network using the QA-Infrastructure

We must design and build a system composed by two QActors: 1. the **workshiftmanager**: the machine that handles the messages according to the requirements 2. the **clock** that defines the various periods during the days	

Problem analysis

The actors follows these FSM diagrams:

- the workshift manager actor transists in three state(one for each period) according to the events emitted by the clock, when an handable message is received it transist to the relative handling state and after the handling in the returns to the previous state.
  FSM of the workshiftmanager:
  

- the clock transits in three state representing the three period of the day, it emits an event when entering in a state and wait a certain time before the transition to the successor.
  FSM of the clock:
  

Test plans

Project

Testing

Deployment

Maintenance

By Dario Battaglia email: dario.battaglia2@studio.unibo.it