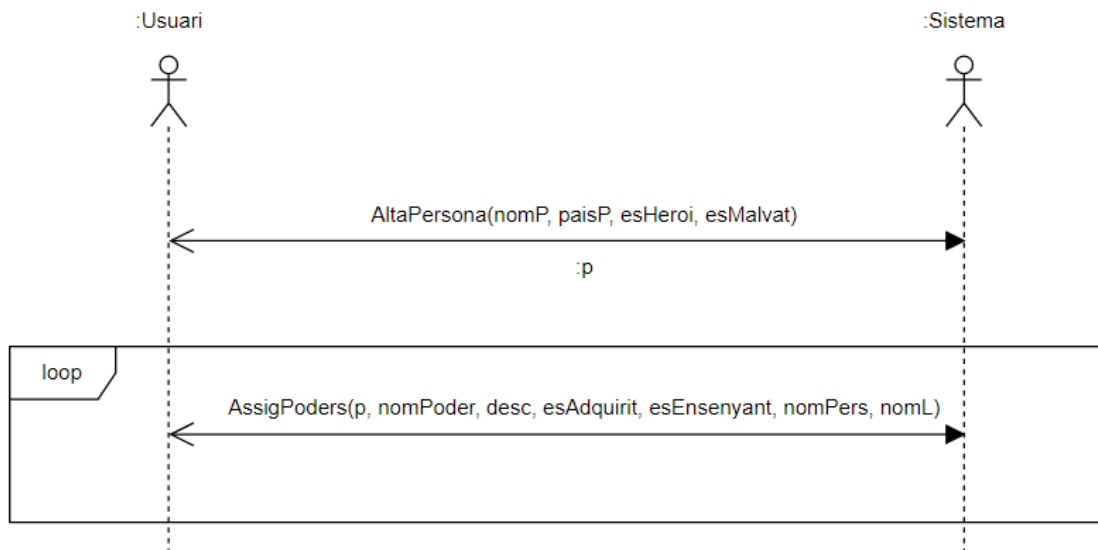


PROBLEMA 2 CONTROL 2:

->Alta de Persona amb Poders:



context: Sistema::AltaPersona (nomP : String, paisP : String, esHeroi : Boolean,
esMalvat : Boolean):Persona

pre: Malvat.allInstances()->select(m | m.poderDePersona->select(pdp |
pdp.ocllsTypeOf(Innat))->size() = 0)->size() > 9

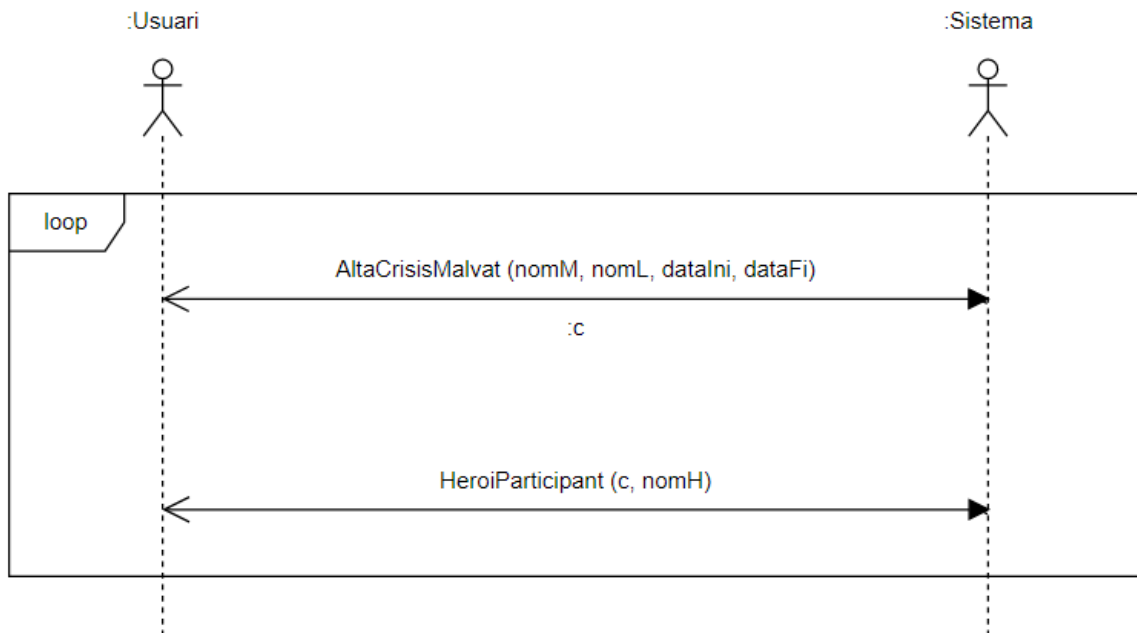
post:Persona.allInstances()->exists(p | p.ocllsNew() and p.nom = nomP and p.pais = paisP
and
if (esHeroi)
then p.ocllsTypeOf(Heroi)
endif and
if (esMalvat)
then p.ocllsTypeOf(Malvat)
endif
and result = p)

context: Sistema::AssigPoders (p : Persona, nomPoder : String, desc : String,
esAdquirir : Boolean, esEnsenyant : Boolean, nomPers : String, nomL : String)

```
pre: if (esAdquirir)
  then Lloc.allInstances()->exists(l | l.nom = nomL) and
  if (esEnsenyant)
  then Persona.allInstances()->exists(p | p.nom = nomPers)
  endif
endif

post: if (not (Poder.allInstances()@pre->exists(po | po.nom = nomPoder)))
  then Poder.allInstances()->exists(po | po.ocllsNew() and po.nom = nomPoder and
  po.descripció = desc)
  endif
  and p.poder.nom->includes(nomPoder) and
  PoderDePersona.allInstances()->exists(pdp | pdp.ocllsNew() and
  if (esAdquirir)
  then pdp.ocllsTypeOf(Adquirir) and pdp.lloc.nom = nomL and
    if(esEnsenyant)
    then pdp.ensenyant.nom = nomPers
    endif
  else pdp.ocllsTypeOf(Innat)
  endif)
```

->Alta de Crisis d'un Malvat:



context: Sistema::AltaCrisisMalvat (nomM : String, nomL : String, dataIni : Date,
dataFi : Date):Crisi

pre: Malvat.allInstances()->exists(m | m.nom = nomM) and
Lloc.allInstances()->exists(l | l.nom = nomL)

post: Crisi.allInstances()->exists(c | c.ocllsNew() and c.malvat.nom = nomM and
c.lloc.nom = nomL and c.inici.data = dataIni and c.data_fi = dataFi and result = c)

context: Sistema::HeroiParticipant (c : Crisi, nomH : String)

pre: Heroi.allInstances()->exists(h | h.nom = nomH)

post: c.heroi.nom->includes(nomH)

->Llocs Perillosos:



context: Sistema::ConsultaLlocsPerillosos (dataIni : Date, dataFi : Date)
 :Set(TupleType(nomL : String, nomM : Set(String)))

pre: Persona.allInstances()->exists(p | p.ocllsTypeOf(Malvat) and p.ocllsTypeOf(Heroi) and
 p.poderDePersona.ocllsTypeOf(Adquirir) and
 p.poderDePersona.oclAsType(Adquirir).lloc.nom = "Barcelona")

body: let llocP : Set(Lloc) =
 Lloc.allInstances()->select(l | l.crisi->select(c | c.inici.data >= dataIni and
 c.data_fi <= dataFi and c.heroi.>size() < 3)->size() > 5)
 in
 result = llocP->collect(l | Tuple{nomL = l.nom,
 nomM = l.adquirir.poderosa.ocllsTypeOf(Malvat).nom})