```
CLASS Party
     DEFINE initialize Party
          superheroes = new ArrayList<>()
          sidekicks = new ArrayList<>()
          lock = new ReentrantLock()
          superCondition = lock.newCondition()
     ENDDEF

     DEFINE emptyLists()
          EXC_ACC
               PRINTLN superheroes.size() + " heros went home alone and " +
                              sidekicks.size() + " sidekicks went home alone"
               del superheros
               del sidekicks
          END_EXC_ACC
     ENDDEF

     DEFINE partyCount()
          EXC_ACC
          RETURN superheroes.size() + sidekicks.size()
          END_EXC_ACC
     ENDDEF

     DEFINE arrive(Superhero sup)
          EXC_ACC
               add(superheroes.end(),sup)
               PRINTLN "Hero of rank "+sup.rank+" has arrived"
          END_EXC_ACC
     ENDDEF

     DEFINE arrive(Sidekick side)
          EXC_ACC
               add(sidekicks.end(),side)
               PRINTLN "Sidekick of rank "+side.rank+" has arrived"
          END_EXC_ACC
     ENDDEF

     DEFINE leave(Superhero hero)
          EXC_ACC
               rand = new Random()
               Num = rand.nextInt(sidekicks.size()-1)
               IF sidekicks.size()<=0
                    WAIT()
```

```
                    PRINTLN "Hero of rank" +hero.rank+"has invited sidekick of
                        rank"+sidekicks.get(num).rank
                    IF hero.rank <= sidekicks.get(num).rank
                            PRINTLN "A Hero of rank "+hero.rank+" is leaving with a Sidekick
                                    of rank "+sidekicks.get(num).rank
                        del(superheroes[hero])
                        del(sidekicks[num])
                        RETURN true
                END_EXC_ACC
                RETURN false
        ENDDEF
ENDCLASS

CLASS Superhero
        DEFINE initialize Superhero
                type = "Superhero"
                rand = new Random()
                rank = rand.nextInt(3)
                partyNumber = UUID.randomUUID()
        ENDDEF
ENDCLASS

CLASS Sidekick
        DEFINE initialize Sidekick
                type = "Sidekick"
                rand = new Random()
                rank = rand.nextInt(3)
        ENDDEF
ENDCLASS

CLASS Generator
        DEFINE initialize Generator(Party p)
                type = new Random().nextInt(2)
                Party = p
        ENDDEF

        DEFINE run()
                FOR int i<10 DO
                    IF type == 0
                            hero=new Superhero()
                            party.arrive(hero)
                            WHILE !party.leave(hero) AND party.partyCount()>0 DO
                                    SLEEP()
```

```
                ELSE IF type==1
                        party.arrive(new Sidekick())
        ENDDEF
ENDCLASS
```