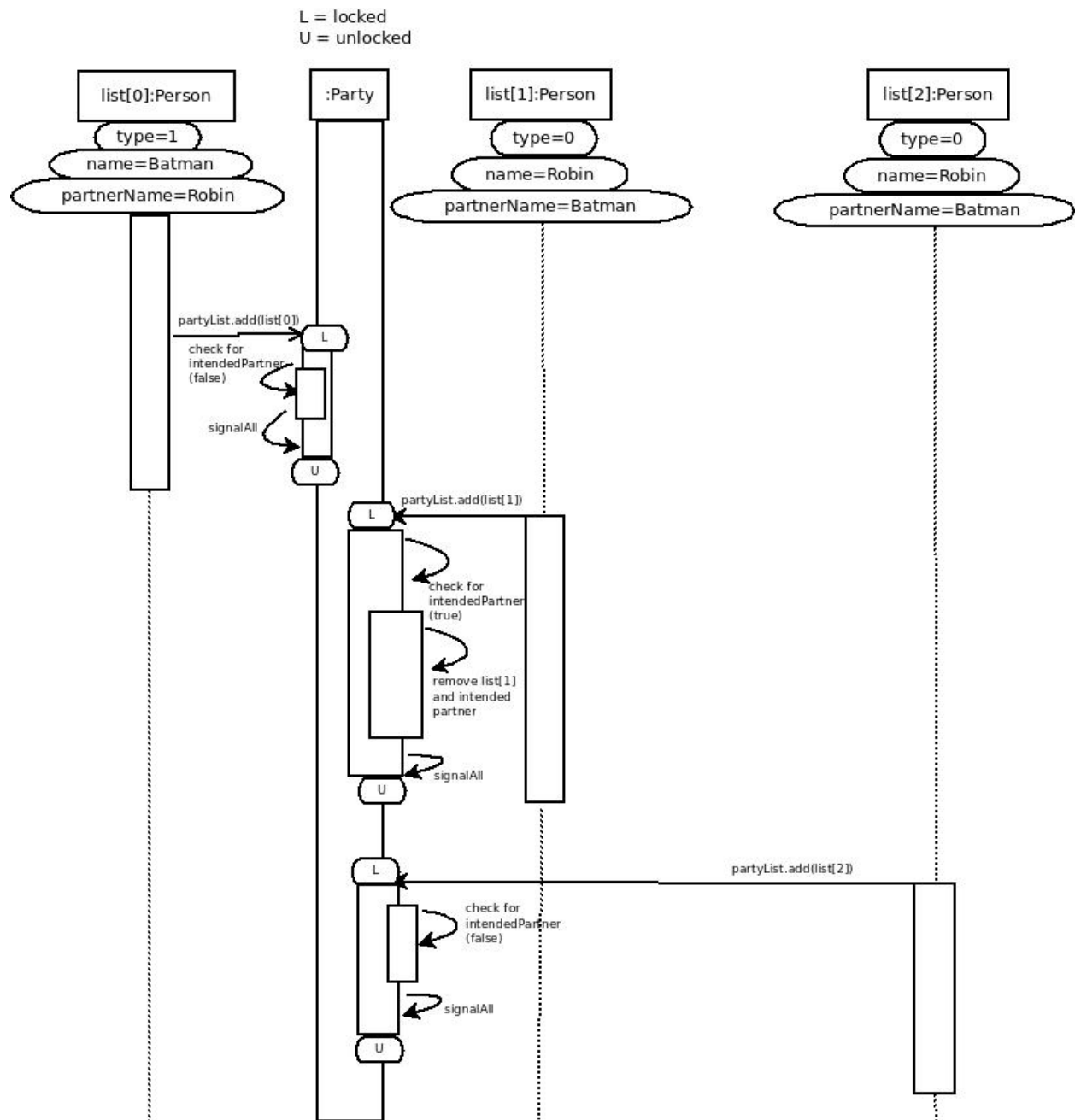
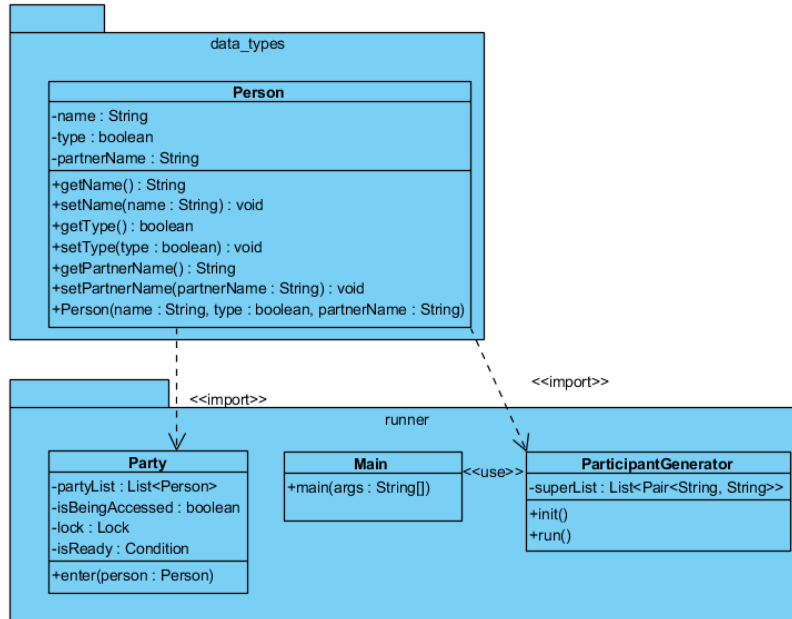


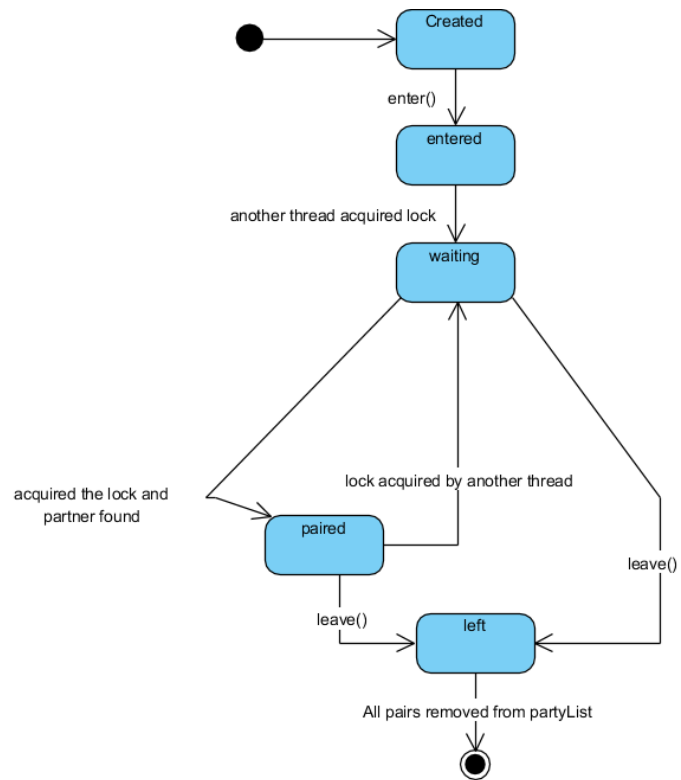
Sequence Diagram:



Class Diagram:



State Machine Diagram:



Pseudo Code:

```
~~~~~
Party.java pseudocode
~~~~~
CLASS Party
  DEFINE initializes Party()
    partyList = new ArrayList
    isBeingAccessed = false
    lock = new ReentrantLock
    isReady = lock.newCondition
  ENDDEF

  DEFINE enter(person)
    lock.lock()
    WHILE isBeingAccessed
      isReady.await()
    ENDWHILE
    isBeingAccessed = true
    partyList.add(person)
    IF person.isType() THEN
      PRINTLN "\t\t" + person.getName() + " entered"
    ELSE
      PRINTLN person.getName + " entered"
    ENDIF
    FOR i = 0 TO partyList.size()
      sidekick = partyList.get(i)
      IF sidekick.getName().equalsIgnoreCase(person.getPartnerName())
        PRINTLN person.getName() + " invites " + sidekick.getName()
        partyList.remove(sidekick)
        partyList.remove(person)
        PRINTLN "leaving : \t\t\t" + sidekick.getName() + " with " +
person.getName()
        EXIT
      ENDIF
    ENDFOR
    isBeingAccessed = false
```

```
        isReady.signalAll()
        lock.unlock
    ENDDEF
ENDCLASS
```

```
~~~~~
Person.java pseudocode
~~~~~
CLASS Person
    DEFINE initialize Person()
        String name
        boolean type
        String partnerName
    ENDDEF

    DEFINE Person(String name, boolean type, String partnerName)
        this.name = name
        this.type = type
        this.partnerName = partnerName
    ENDDEF

    DEFINE getName()
    RETURN name
    ENDDEF

    DEFINE setName(String name)
        this.name = name
    ENDDEF

    DEFINE isType()
    RETURN type
    ENDDEF

    DEFINE setType(boolean type)
        this.type = type
    ENDDEF

    DEFINE getPartnerName()
    RETURN partnerName
    ENDDEF

    DEFINE setPartnerName(String partnerName)
        this.partnerName = partnerName
    ENDDEF
ENDCLASS
~~~~~
```

```

~~~~~
Main.java pseudocode
~~~~~
CLASS Main
    DEFINE main()
        init()
        list = []

        FOR i=0 to 20
            add(list[i], new Thread(new ParticipantGenerator()))
        ENDFOR

        FOR i=0 to 20
            list[i].start()
        ENDFOR

        FOR i=0 to 20
            list[i].join(1000)
        ENDFOR

    ENDDEF
ENDCLASS
~~~~~

```

```

~~~~~
ParticipantGenerator.java pseudocode
~~~~~
CLASS ParticipantGenerator
    superList = [("Batman", "Robin"), ("Superman", "Superboy"), ("Aquaman",
"Aqualad"), ("Green Arrow", "Speedy"), ("Flash", "Kid Flash")]
    DEFINE run()

        rand = new Random()
        coinFlip = nextBoolean()
        teamToUse = nextInt(0, 5)

        IF coinFlip == TRUE THEN
            thePerson = new Person(superHeroName, TRUE, partnerName)

```

```
        PRINTLN superheroName+ " created"
        enter(thePerson)
    ELSE
        thePerson = new Person(sidekickName, TRUE,partnerName)
        PRINTLN sidekickName+ " created"
        enter(thePerson)
    ENDIF

    ENDDEF
ENDCLASS
~~~~~
```