

Software Engineering - Exercise Sheet 8

Martin Mehlmann
(`mehlmann@informatik.uni-freiburg.de`)

June 24, 2009

Exercise 1

1. `hasNElements` \equiv
`col->select(it | expr)->size() = n`
2. `isUnique` \equiv
`col->asSet()->size() = col->size()`
3. `take` \equiv
`col->iterate(it; res=Set{} |
 if res->size() < n
 then res->including(it)
 else res endif)`

Exercise 2

1. `context Meeting::move(newStart : Date)`
`pre: Meeting.allInstances()->forall (m |`
 `m <> self implies`
 `disjoint(m, newStart, self.duration)`
 `or self.Location <> m.Location)`
`post: self.start = newStart`
2. `context Meeting::relocate(newLocation : Location)`
`pre: newLocation.name <> "Lobby" and`
 `Meeting.allInstances()->forall (m |`
 `m <> self implies`
 `disjoint(m, newStart, self.duration)`
 `or newLocation <> m.Location)`
`post: self.location = newLocation`

Exercise 3

1. `context` Vehicle

`inv: driver.oclIsKindOf(Driver)`

2. `context` Vehicle

`inv: oclIsKindOf(Truck) implies driver->size() = 2`
`and oclIsKindOf(Van) implies driver->size() = 1`

3. `context` Vehicle

`inv: oclIsKindOf(Truck) implies`
`driver->forAll(license = 2)`

4. `context` Vehicle

`inv: load->iterate(it; res=0 | res + it.weight)`
`<= maxLoad`