

## Problem 2

a.) SEE PROBLEM 1 .USE FILE

b.) context Customer

inv rentals:rentals->notEmpty

c.) context Customer

inv daysRented:rentals->select(daysRented>3)->notEmpty

1.) context LoyaltyAccount::points

init:0

2.) context LoyaltyProgram

inv atLeastOneService: partners.deliveredServices->size()>=1

3.) context LoyaltyProgram::getServices():Set(Service)

body:partners.deliveredServices ->asSet()

4.) context LoyaltyProgram::(getServices(pp: ProgramPartner):Set(Service)

body: if partners->includes(pp)

then pp.deliveredServices

else Set{}

endif

5.)

context Service

inv:

transactions->select(oclIsTypeOf(Earning)).points->sum()>transactions->select(oclIsTypeOf(Burning)).points->sum()

context ProgramPartner

inv:

deliveredServices.transactions->select(oclIsTypeOf(Earning)).points->sum()>deliveredServices.

transactions->select(oclIsTypeOf(Burning)).points->sum()

6.) context LoyaltyProgram

inv: partners.deliveredServices->forAll(pointsEarned=0 and pointsBurned=0)

implies Membership.account->isEmpty

7.) context Customer::birthday()

post: age = age@pre + 1