Second example of SNB

Introduction

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Let's present a more complete example

A way to avoid deadlocks in systems

Make one of the four necessary conditions fail

Principle

When a program enters a *critical section*, it must own all the resources it will need in this piece of code

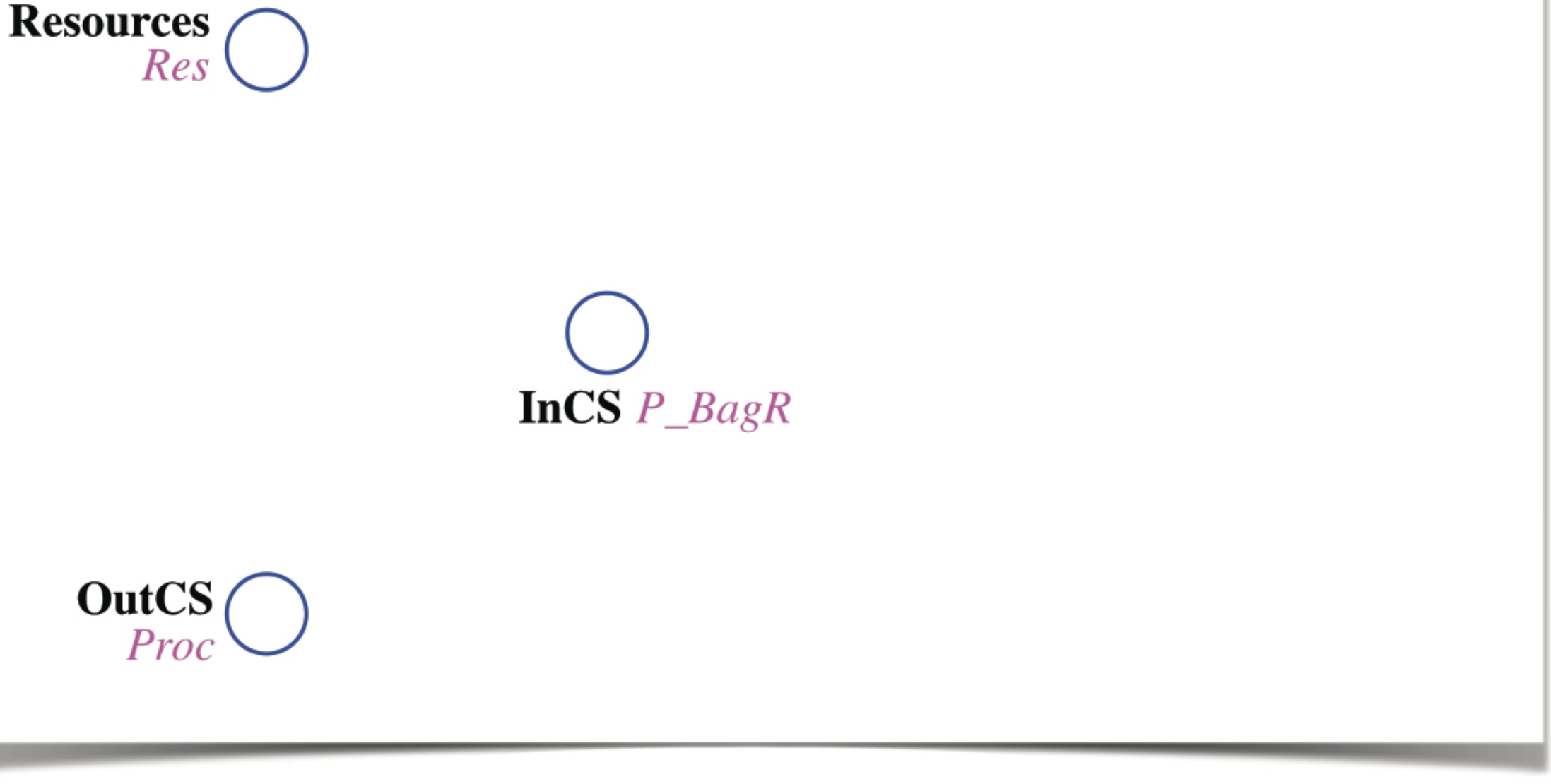
Modeling the problem (1/6)

Entering in the critical section

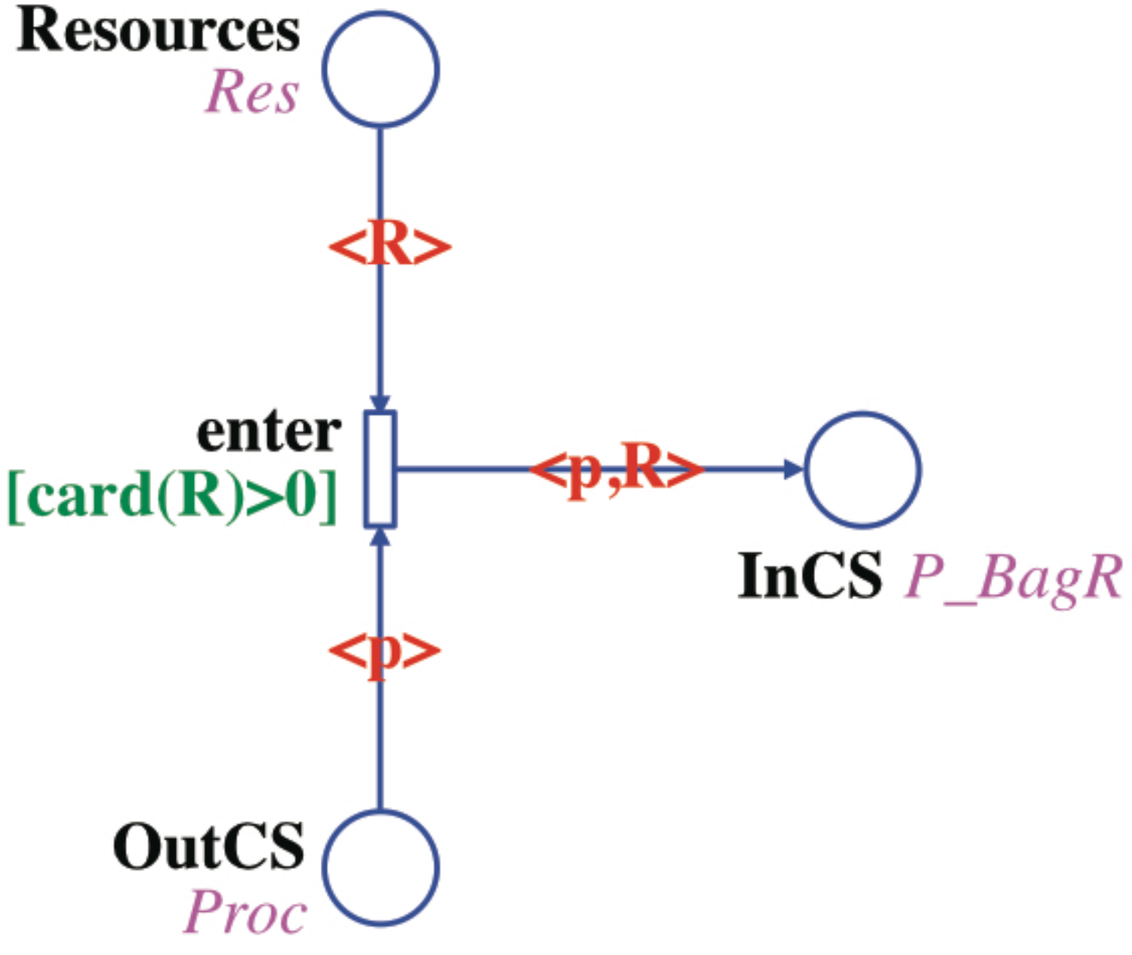
```
Class
   Proc is [p1, p2, p3];
   Res is 1..6;
Domain
   BagR is Bag(Res);
   P_BarG is <Proc, BagR>;
Var
   p in Proc;
   R, R2 in BagR;
```

Modeling the problem (2/6)

States of the system

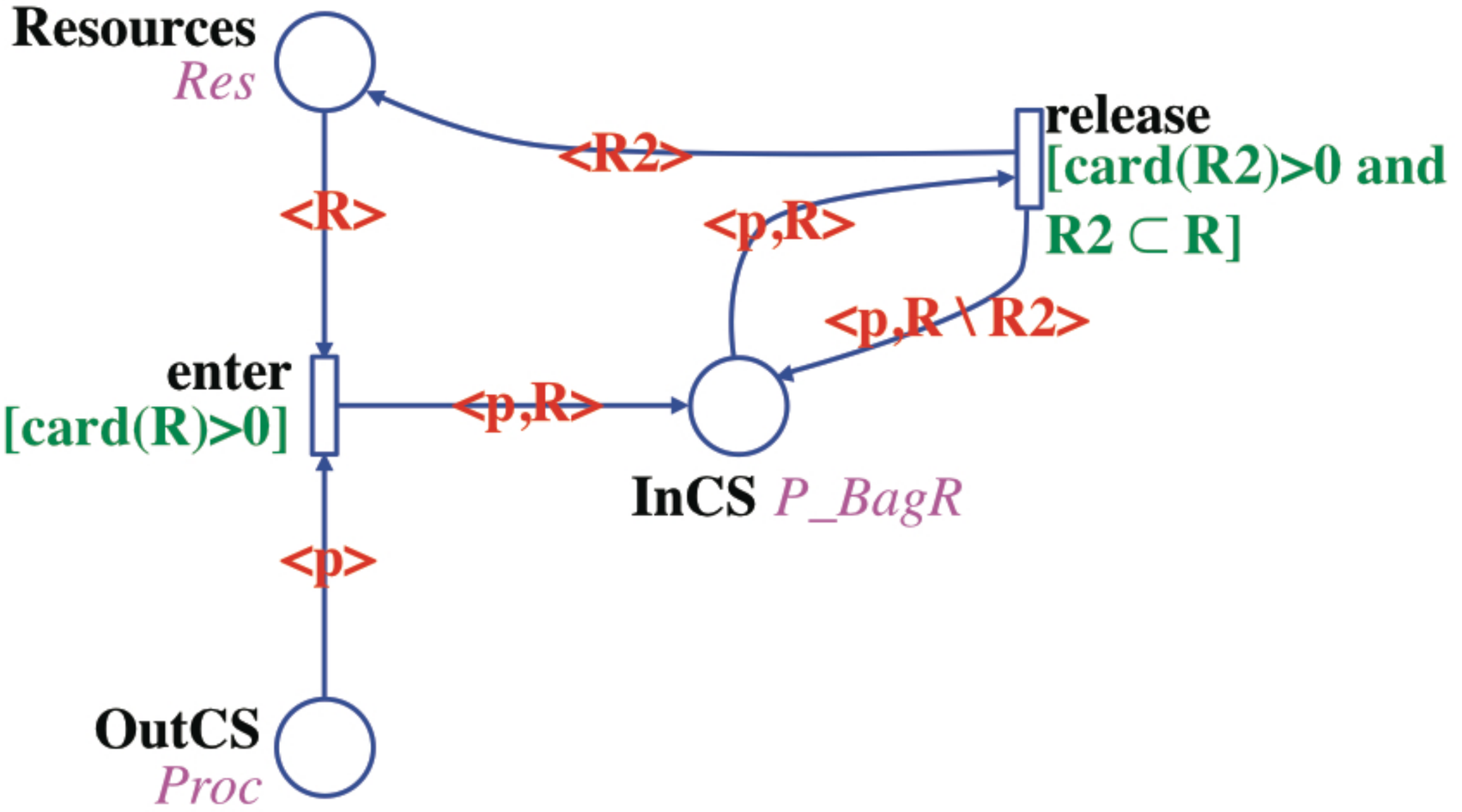


Entering in the critical section



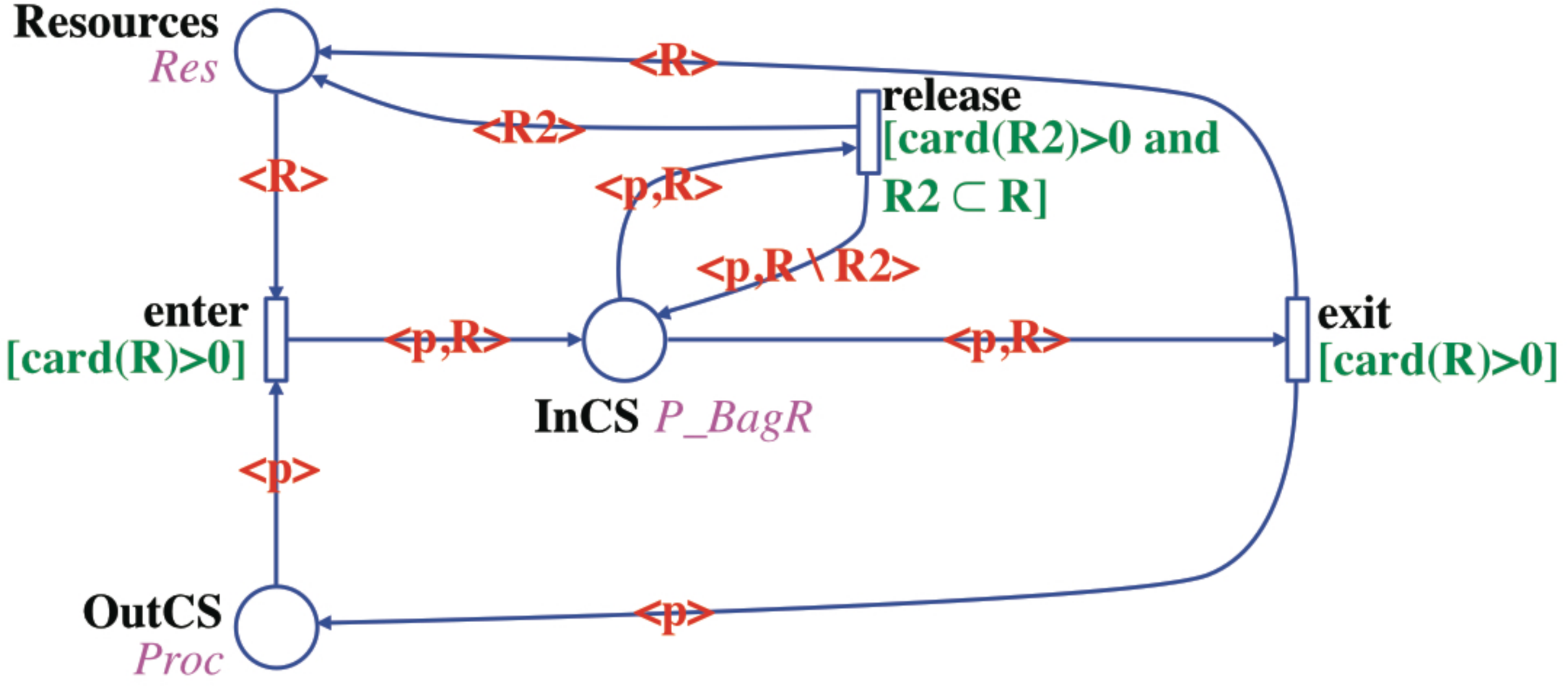
Modeling the problem (4/6)

Releasing some resources (and staying in the critical section)



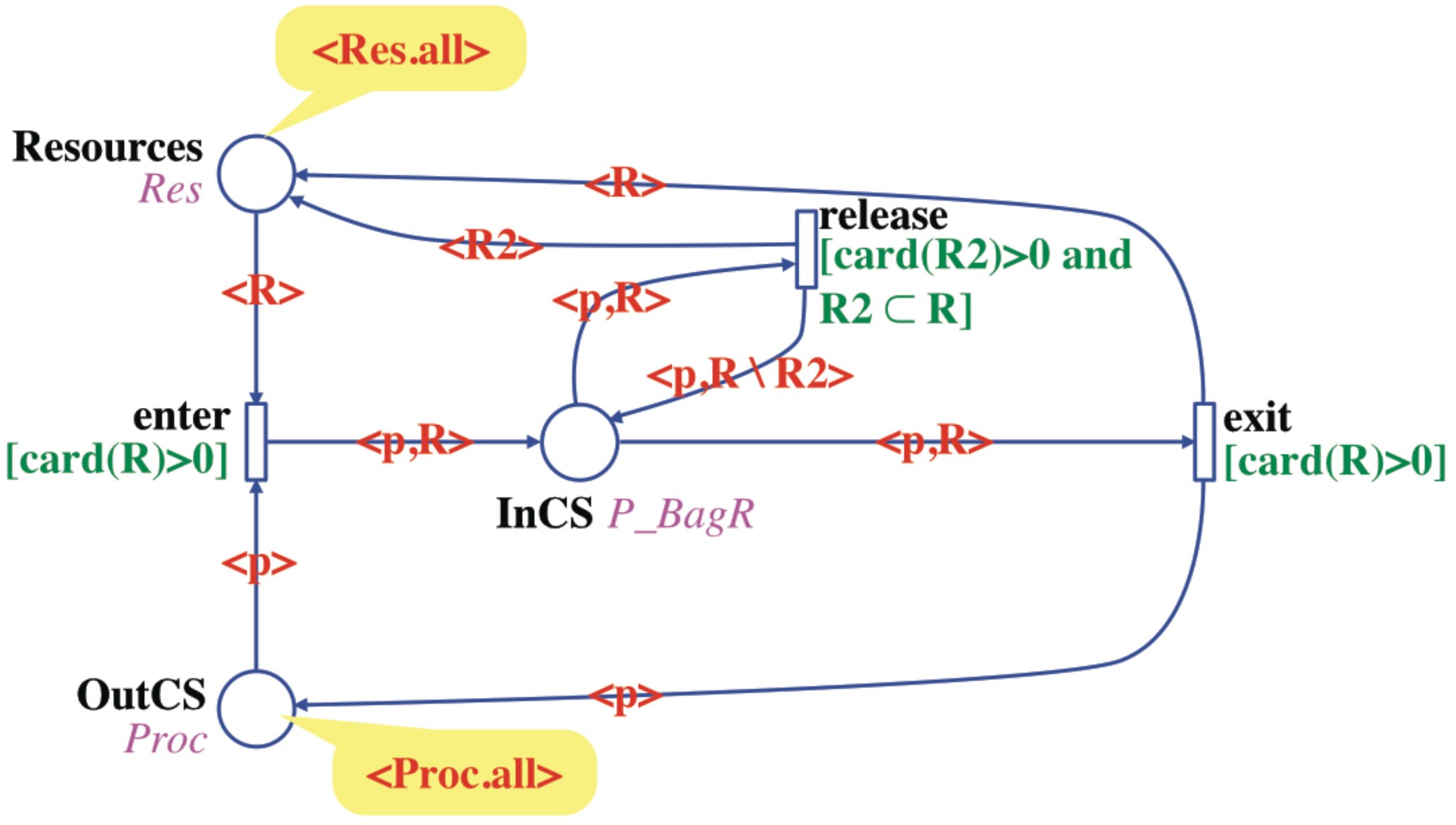
Modeling the problem (5/6)

Color domains and declarations



Modeling the problem (6/6)

Initial marking of the system



Conclusion

This tutorial has presented:

- Symmetric Nets with their syntax and semantics
  - how to build a Reachability Graph
  - how it can be used for system analysis
- how to use CosyVerif platform to practice these concepts and formalisms
- the use of global and partial Symmetries to reduce the Reachability Graph
  - dynamic and static subclasses
  - the symbolic firing rule
  - Symbolic Reachability Graphs
  - Extended Symbolic Reachability Graph
- Symmetric Nets with Bags (SNB)

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and next, how to model a system with SNB