5a. Lista de exercícios
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Nesta que é a nossa última lista de exercícios vamos tartar com a modelagem e design de sistemas diretamente e não apenas com as técnicas que podemos usar para isso. Assim, considere o seguinte problema:

A driving school is trying to set up an information system to track the progress of the students training and the deployment of instructors. As a starting point for a formal process model the following description can be used.

New students register with the driving school. A registered student takes one or more driving lessons, followed by an examination. Each driving lesson has a beginning and an end. Instructors give driving lessons. The driving school has five instructors. Each driving lesson is followed by either another lesson or an examination. The examination has a beginning and an end and is supervised by a driving examiner. In total there are ten driving examiners. For the outcome of an examination there are three possibilities:

1. The student passes and leaves the driving school.
2. The student fails and takes additional lessons in order to try again.
3. The student fails and gives up.

Use a colored Petri net to model that one takes ten lessons before taking the exam and people will drop out if they fail three times.

Every token in the places begin, c1 , c2, c3, c4, c5, end has a value now. For instance: A person named J. Walker, 18 years old who has taken no lessons and no exams yet is represented as:


The last two attributes are important to the exercise, because we want two know how many lessons and exams a person already have had.

The transitions are specified as follows:

register: nof_lessons: = 0
nof_exams: = 0

The transition to more and ready can be fused in one transition: more? with the following behavior:
if
  nof_lessons < 10
then
  produce token for $c_1$
else
  produce token for $c_4$
end_lesson: nof_lessons: = nof_lessons + 1
end_exams: nof_exams: = nof_exams + 1
again has a precondition: nof_exams < 3
set the attribute nof_lessons: = 0, because one has to take another ten lessons before
the next exam.