

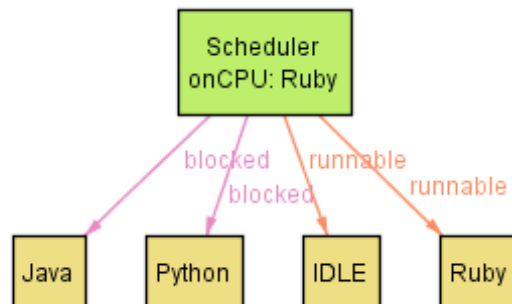
## Alloy Practice #2

### CPU Scheduler

In what follows, entities in the model are in **bold red**. Signatures start with a capital letter and relations (fields) begin with a lower case letter.

1. There is one **Scheduler** for a single CPU system.
2. The **Scheduler** manages the progress of all the **Tasks** in the system, one of which is the designated **IDLE** task.
3. The **Scheduler** knows which **Tasks** are **runnable**, which **Tasks** are **blocked**, and which **Task** is on (using) the CPU (**onCPU**)
4. The **runnable** and **blocked** **Tasks** *partition* the set **Task**, that is:
  - a. *Every* **Task** is *either* **runnable** *or* **blocked**, and
  - b. *No* **Task** is *both* **runnable** *and* **blocked**.
5. The **IDLE** task is always **runnable**.
6. The **Task** currently **onCPU** is **runnable**.
7. The **IDLE** task is **onCPU** if and only if it is the only **runnable** **Task** (that is, there is no other **runnable** **Task**).

A skeleton model is in file *Scheduler.als*, and a visualization theme is in *Scheduler.thm*. Below is an example solution that conforms to the facts above:



If you decide to do this practice exercise, submit your static model with the name **Scheduler.als** to the **Alloy Practice** drop box by noon on Thursday, 20 February.

**NOTE:** You must submit at least one of the three practice activities by the due date and time to receive any activity credit. You may submit as many as all three.

**NOTE:** Anything you submit by the end of the day on Monday, 17 February, will be quickly examined and returned with any relevant comments by noon on Thursday, 20 February, so you can use these to study for the exam on Friday, 21 February.

**NOTE:** Instructor solutions will become available on myCourses in the Content area around noon on Thursday, 20 February.