Building

There is a building with N + 1 floors, numbered from 0 to N. The building has *K* fast (accelerating) elevators that stop only in floors that are multiple of M/ 2 (so *M* has to be an **even** number). Furthermore, within each building, there are *L* slow elevators, that stop at every floor of the building.

There are several persons, for which their current location (i. e., the floor they are) and their destination are given. The planning problem is to find a plan that moves the persons to their destinations while it minimizes the total duration.

The actions are described next:

- Move up (lift, level1, level2): the lift moves up from level1 to level2. Model two actions, one for a fast lift and another one for a slow lift. The duration of the 2 actions should be given by a predicate.
- Move down (lift, level1, level2): the lift moves down from level1 to level2. Model two actions, one for a fast lift and another one for a slow lift. The duration of the 2 actions should be given by a predicate.
- Board (person, lift, level, num1, num2): the person boards on a level. The variable num1 specify the number of persons in the lift, and num2 is incremented in 1 when the person is boarded. The duration of the action is constant and equal to 1.
- Leave (person, lift, level, num1, num2): the person leaves the lift on a floor level. The variable num1 specifies the number of persons in the lift, and num2 is decremented when the person leaves the lift. The duration of the action is constant and equal to 1.

Note: Use objects (and not numbers) to treat the number of persons and the level floors. That is, define the following types:

```
(:types  lift - object
         slowlift fastlift - lift
         person - object
         number - object
)
```

and in the initial state use the following for representing *level*, *num1* and *num2*:

```
(:objects
   n0 n1 n2 n3 n4 n5 n6 n7 n8  - number
...
)
```

Model two problems. The first one with 5 levels, 2 lifts of each type and 2 persons. The second problem has 9 levels, 4 persons and 2 lifts of each type.

Pregunta 1

Necesita calificación

Abra el ejercicio de los ascensores o Building de "Advanced Modelling" (ejercicio 2)

https://github.com/Malola2015/planningCourse/blob/master/assignments/Building.md

Considere un pasajero de nombre Ana que se encuentra en el piso 2 y su intención es salir a la calle (que se encuentra en el nivel cero). Escriba en la línea de respuesta SOLO el predicado que representa el estado inicial.

En el fichero correspondiente tiene que actualizar las dos condiciones.

Pregunta 2

0,2 de 0,2 puntos

Modifique la duración de los ascensores rápidos al valor de 21.

Pregunta 3

0 de 0,4 puntos

Modifique la acción BOARD para que la duración dependa del valor de un predicado, en vez de especificar solo un número en el operador. Nombre dicho predicado como: T-embarque.

Copie TODO el campo de duración, no sólo el predicado.

Pregunta 4

Necesita calificación

Añada un nuevo operador llamado DESINFECTAR que realice una limpieza del ascensor. Como precondiciones el operador no estará desinfectado, y como efecto, lo estará.

Modifique además el operador BOARD para que tenga como precondición que el ascensor deba estar desinfectado.

Solo escriba en este apartado el operador DESINFECTAR, pero en el fichero correspondiente, debe también aparecer la modificación del operador BOARD.