Institut de Recherche pour le Développement
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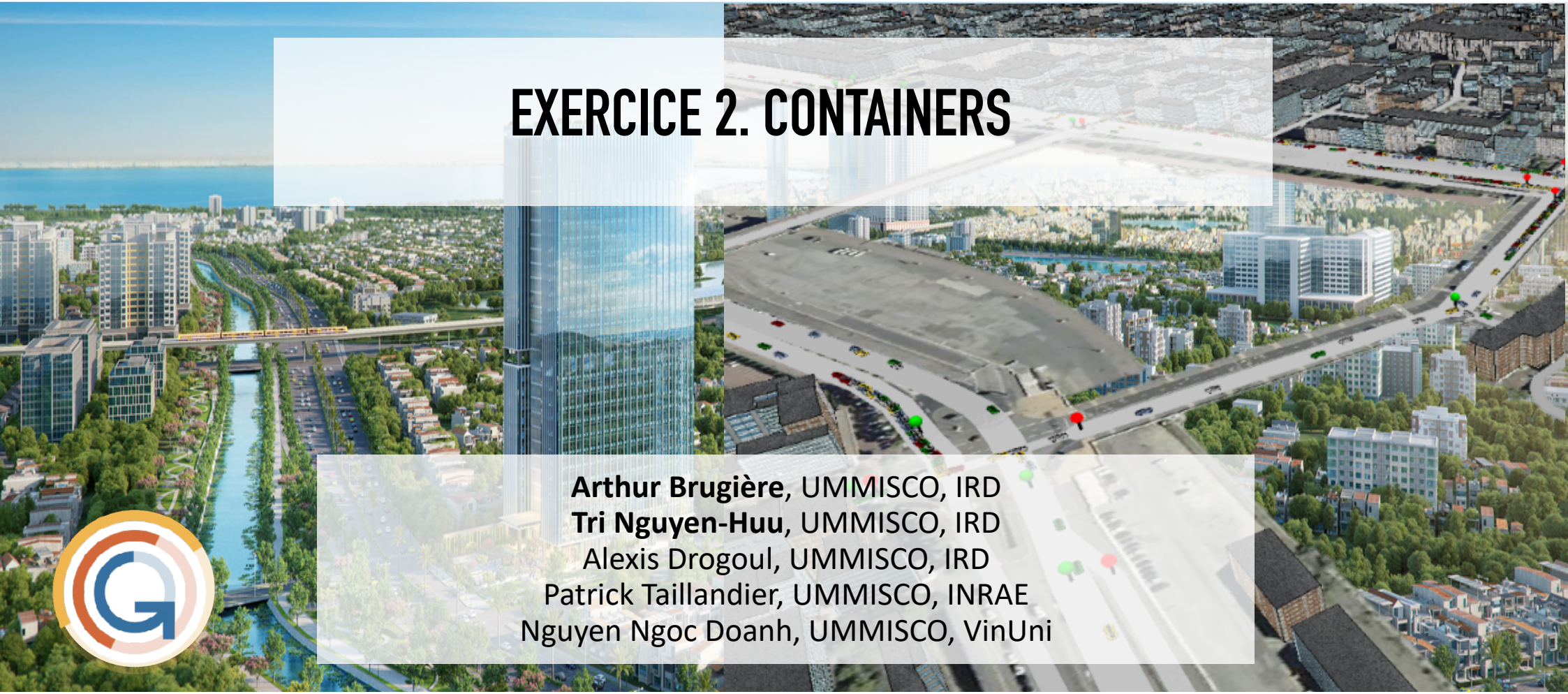

EXERCICE 2. CONTAINERS

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EXERCICE 2. CONTAINERS

For the following questions, you need only a very simple model with the global, its init block and an empty experiment. All the answers can be written in the global init.
Use the write statement to display and check your answers.
It is strongly advised to do the exercises in the provided order: every time a new GAML keynote is needed, it is introduced with a hint, but only once.

All these questions can be answered in 1 line.

1. Declare and create a list of 10 chosen integer numbers in [0,10].
   (hints: variable declaration, create a list)
2. Get the number of elements of the list.
   (hint: length operator)
3. Get the first element of the list.
   (hint: first operator)
4. Reverse the order of the elements of the list.
   (hint: reverse operator)
5. Get the last element of the list.
   (hint: last operator)

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6. Sort the element by ascending order.
   (hint: sort_by operator)
7. Sort the element by descending order.
8. Get a new list with only the elements greater or equals to 5.
   (hint: where operator)
9. Get the list of elements organised as follow: first the elements lower than 5, ordered by ascending order and then the elements greater or equals to 5, ordered by descending order.
   (hint: + operator to concatenate lists)
10. Get the list of all the elements multiplied by 10
    (hint: accumulate/collect operator)
11. Get the list of the square of elements greater than 5.

EXERCICE 2. CONTAINERS

Define a species people, with 2 attributes: energy and money (random float values between 0.0 and 10.0).
Create 10 agents people.
As previously, write in 1 line:

1. Get the list of people with energy greater than 5.
2. Get a list of 3 random people agents.
   (hint: among operator)
3. Get the people agent with the max of energy, with the min of money.
   (hint: with_min_of, with_max_of operators)
4. Get the maximum value of money, the minimum value of energy among the people agents.
   (hint: min_of, max_of operators)
5. Get the list of all the energy values.
6. Get the list of people sorted by money.
7. Get the list of people with energy greater than 3 and lower than 6.
8. Get the people agent with the lowest money among people agents with energy greater than 2.
9. Check (i.e. get true of false) whether there is a people agent with money greater than 9.
   (hint: empty operator)

EXERCICE 2. CONTAINERS

Define a map variable containing elements of type string (for the key) and float (for the value), initialize it at hand with 3 pairs (with at least 1 key starting with “a” letter).

1. Get the list of all the values of the map.
2. Get the map of pairs where the key start with the letter “a”
3. Given people agents of the previous question, get the map of people name and people energy.
4. Get the map associating the name of the people agent, with the list of its 3 coordinates.