INGI2132
Social Network Simulation

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People behavior

People can join or leave the social network based on multiple scenarios. These scenarios provides probabilities depending on the person's parameters, the number of friends he has, and other criteria. These probabilities reprensents either the will of a person to join, or to leave the network. For exemple, if the person is not very tolerant about notifications, and his friends are very active, then he will more likely want to leave the network instead of joining it.

DSL usage

To use this DSL, it is needed to modify the file Test.scala, present in the dsl folder of the program. You can also create an other file, but you will need to add the same import than the one present in the Test file, otherwise the DSL will not be able to run.

Here is an exemple of the creation of a person

```
Create_person named "Ben" aged_of 23.years with_friends 500 with_family
22 with_aquaitances 10 with_gf 1 with_children 0 with_params {
paranoid -> paranoid.medium
jealous -> jealous.medium
tolerance -> tolerance.low
friends_activity -> friends_activity.high
}
```

All the parameters are mandatory in order to have all the informations needed for every scenarios to work, but the order of the parameters about the

number of contacts or the parameters about the person doesn't matter. The only important point is to keep the name and the age at the beginning.

To start the simulation, you have to define the scenarios you want to use, and the duration of the simulation, as follow.

Simulate with_scenarios Scenarios.Notifications and Scenarios.Influence during 100.years
or if you want to use all the scenarios
Simulate with_scenarios Scenarios.all during 100.years

To get the details about statistics of the will to join/leave, and the evolution of the population, you can use the following. For the statistics, you can have detailed number which gives information off the statistics coming from each scenarios, or you can just have simplified ones, which are an average of the statistics of all scenarios used for the simulation.

Show stats_for 100.years
or
Show detailed () stats_for 100.years

Simulate on 1000.persons during 100.years

DSL modifications

It is possible, and quite easy, to add any scenario you want. For that, you first need to modify the file Simulate.scala, in the dsl folder. In the object Scenarios, you have to add the keyword which will represent the name of your scenario, such as :

---

var influence = Value

Then, in the object Simulate, you have to add those lines, in order to use the scenario Influence, when the keyword "influence" is used in the DSL :

---

if (sc == Scenarios.influence || sc == Scenarios.all)
Simulator.scenarios += new Influence()

With these two modifications, you can now use the scenario "influence" in the DSL by using Scenarios.influence, such as follow, or by using Scenarios.all.

```
Simulate with_scenarios Scenarios.Influence during 100.years
```

Now you can create a file in the scenarios folder, with a class of your choice that extend the trait Scenario, and it will be usable for your next simulation.