**CODE GUIDE**

**MODEL COMPONENTS:**

*Run:*

* Single\_run.py: to make a single run of the model, you can setup number of agents and steps from there. All the data collected during the run are stores in the macro\_variable database;
* Multiple\_run.py: same as above, but it is possible to run the model for multiple times (Montecarlo);
* Batch\_run.py: built-in Mesa feature for multiple runs. Not really useful since it only collects the data at the end of each run (not each period of each run).

*Classes:* folder which contains all the agents’ classes. Each class follows the *stages* (order of actions) that are at the bottom of each sheet. In each stage, there are the functions that are activated in such stage and defined before.

* consumption\_good\_firm.py: procedures of consumption-good firms (the longest code);
* capital\_good\_firm.py: procedure of capital-good firms;
* households.py: procedures of households;
* government.py: the government has few actions, however since there is one for each region, it computes some variables at central level, that are then collected by each firm when needed;
* model.py: contains all the feature of the model, in model\_reporters there all the variables that are stored and collected during each period;
* schedule.py: it is a function that regulates agents’ step. Like in which order agents go;
* vintage.py: a class for the capital machines. It does nothing, it only contains the parameters of capital vintages (lifetime, productivity, amount).

*Modules:*

* research\_and\_development.py: functions for R&D (and CCA R&D) procedures;
* goods\_market.py: procedures for goods market;
* labor\_dynamics.py: procedures for labor market;
* migration.py: procedure for migration process;
* data\_collection.py & data\_collection\_2.py: contains all the function that are used for data collecting by the model (classes🡪model.py 🡪 data\_collector);
* data\_analysis.py: function used to analyze results (plots etc).