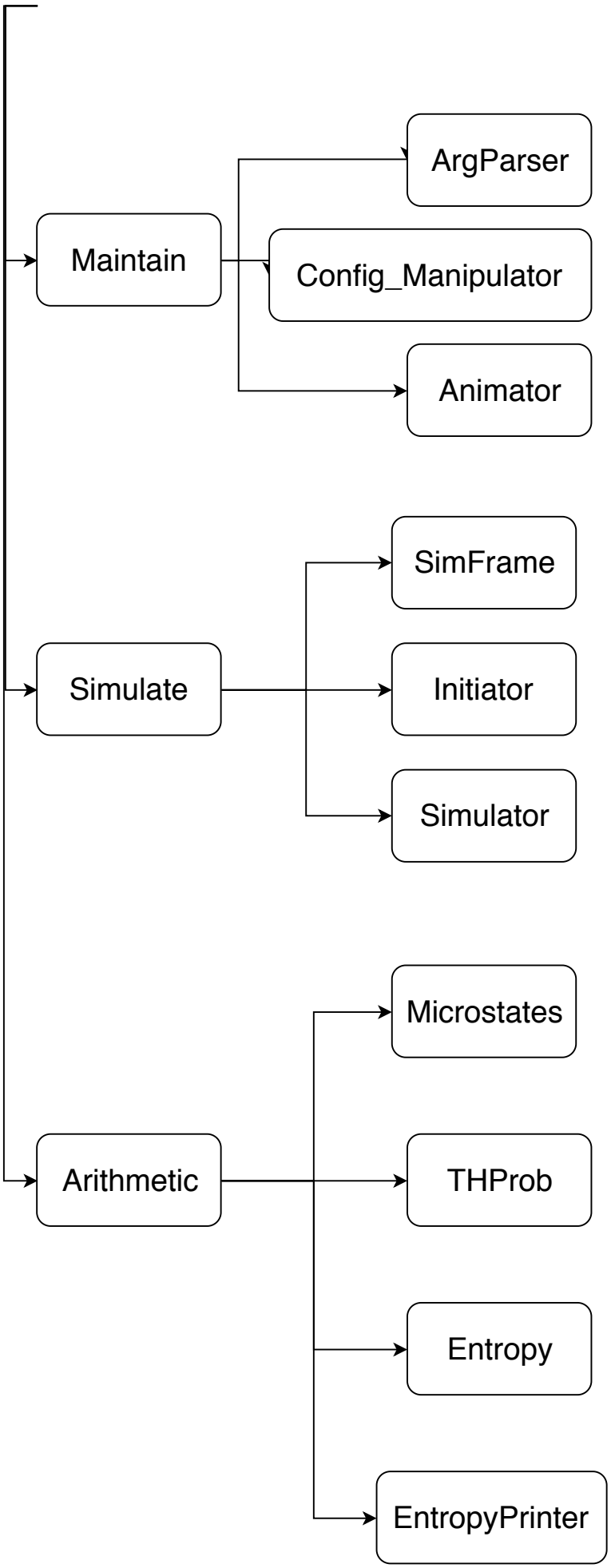
Modules


Maintain
ArgParser
Config_Manipulator
Animator
Simulate
SimFrame
Initiator
Simulator
Arithmetic
Microstates
THProb
Entropy
EntropyPrinter

Maintain

Part of program which embrace all modules into one working program

ArgParser

Has no public methods, is main part of program,
which parse instruction given in command line
and execute proper functions of program

Proper arguments are:
-f file -> read particles positions and velocities from file
-m time -> evaluate only microstates
-t time -> evaluate only thermal probability
-e time -> evaluate only entropy
-c file -> create chart with entropy
-r -> recreate config file

ConfigManipulator

Is used as interface to communicate with config file,
which store basic data with simulate configuration

Stored data are:
- sizeX : float -> contains width of simulated area
- sizeY : float -> contains height of simulated area
- maxSpeed : float -> define maximal speed of single particle
- particleAmount : int -> define amount of particles
- boxSize : float -> define size of one side of box

	read(name : str)	

Takes: name of field described above
Returns: value of field

Simulate

Has code for conducting simulation of gas

SimFrme

Is class to store
one steep of simulation

getPositions()

Takes: nth
Returns: array with positions for each particle

getVelocities()

Takes: nth
Returns: array with velocities for each particle

getXYPositions()

Takes: nth
Returns: array with positions for each particle, but
in coordinates described by boxes

Initiator

Create initial frame of simulation,
exact demands of first frame are provided
in Schawiola materials

create()

Takes: nth
Returns: SimFrame

Simulator

Takes one frame,
simulate behavior of particles after elapsing some deltaTime,
return new SimFrame

	simulate(frame: SimFrame deltaTime : float)	

Takes: frame which is SimFrame type
time which is float type
Returns: frame which is SimFrame type

Arithmetic

Contains functions run on top of simulation to make some statistics about it

Microstates

Class describe microstate after elapsing some time.
Time should be taken from config file
Algorithm for evaluating microstate is carefully described in Schawiola materials

evaluate()

Takes: nth
Returns: array with ints describing microstates

THProb

Class describe thermodynamic probability after elapsing some time.
Time should be taken from config file
Algorithm for evaluating THP is carefully described in Schawiola materials

evaluate()

Takes: nth
Returns: simple int with THP

THProb

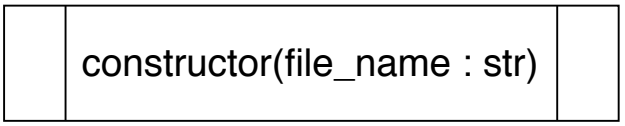
Class describe entropy after elapsing some time.
Time should be taken from config file
Algorithm for evaluating entropy is carefully described in Schawiola materials

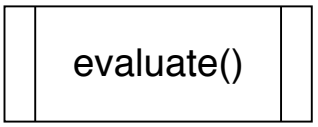
evaluate()

Takes: nth
Returns: simple int with entropy

EntropyPrinter

Class create chart describing
change of entropy in time
.Time should be taken from config file





Takes: nth
Returns: nth