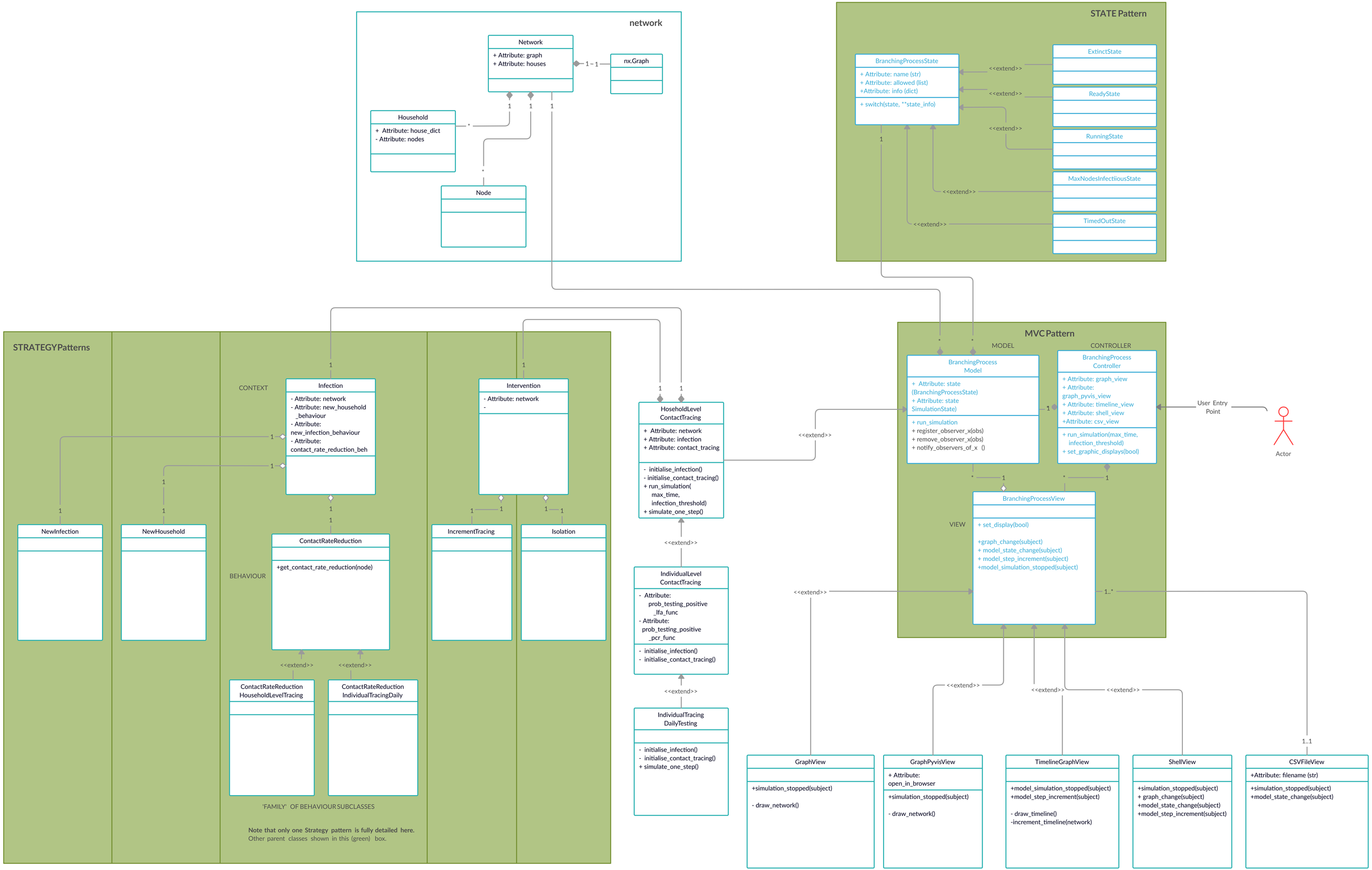
network
Network
+ Attribute: graph
+ Attribute: houses
1 – 1
nx.Graph
Household
+ Attribute: house_dict
- Attribute: nodes
Node
STATE Pattern
BranchingProcessState
+ Attribute: name (str)
+ Attribute: allowed (list)
+Attribute: info (dict)
+ switch(state, **state_info)
<<extend>>
ExtinctState
ReadyState
RunningState
MaxNodesInfectiiousState
TimedOutState
STRATEGYPatterns
CONTEXT
Infection
- Attribute: network
- Attribute: new_household _behaviour
- Attribute: new_infection_behaviour
- Attribute: contact_rate_reduction_beh
Intervention
- Attribute: network
-
NewInfection
NewHousehold
BEHAVIOUR
ContactRateReduction
+get_contact_rate_reduction(node)
IncrementTracing
Isolation
ContactRateReduction HouseholdLevelTracing
ContactRateReduction IndividualTracingDaily
'FAMILY' OF BEHAVIOUR SUBCLASSES
Note that only one Strategy pattern is fully detailed here.
Other parent classes shown in this (green) box.
HoseholdLevel ContactTracing
+ Attribute: network
+ Attribute: infection
+ Attribute: contact_tracing
- initialise_infection()
- initialise_contact_tracing()
+ run_simulation(max_time, infection_threshold)
+ simulate_one_step()
IndividualLevel ContactTracing
- Attribute: prob_testing_positive _lfa_func
- Attribute: prob_testing_positive _pcr_func
- initialise_infection()
- initialise_contact_tracing()
IndividualTracing DailyTesting
- initialise_infection()
- initialise_contact_tracing()
+ simulate_one_step()
MVC Pattern
MODEL
CONTROLLER
BranchingProcess Model
+ Attribute: state (BranchingProcessState)
+ Attribute: state SimulationState)
+ run_simulation
+ register_observer_x(obs)
+ remove_observer_x(obs)
+ notify_observers_of_x ()
BranchingProcess Controller
+ Attribute: graph_view
+ Attribute: graph_pyvis_view
+ Attribute: timeline_view
+ Attribute: shell_view
+Attribute: csv_view
+ run_simulation(max_time, infection_threshold)
+ set_graphic_displays(bool)
User Entry Point
Actor
VIEW
BranchingProcessView
+ set_display(bool)
+graph_change(subject)
+ model_state_change(subject)
+ model_step_increment(subject)
+model_simulation_stopped(subject)
GraphView
+simulation_stopped(subject)
- draw_network()
GraphPyvisView
+ Attribute: open_in_browser
+simulation_stopped(subject)
- draw_network()
TimelineGraphView
+model_simulation_stopped(subject)
+model_step_increment(subject)
- draw_timeline()
-increment_timeline(network)
ShellView
+simulation_stopped(subject)
+ graph_change(subject)
+model_state_change(subject)
+model_step_increment(subject)
CSVFileView
+Attribute: filename (str)
+simulation_stopped(subject)
+model_state_change(subject)