Housing Market Simulator

Objects:

* Person
  + Budget: How much money they’re willing to pay for a new house
  + House: Link to the house they live in
    - Can be null
* House
  + Value: How much money the house is worth
  + Occupant: Link to the person that lives here
* Market
  + Buyers: The people who are trying to buy a house
    - Can only buy a house if no current house
  + Sellers: The people who are trying to sell a house
    - Can only sell a house if have a house

Process

1. Generate a random set of people and houses
   1. Choose distribution of budgets and house values
   2. Designate some people as homeless
   3. Designate some houses as vacant
2. Each tick:
   1. Choose some people who want to sell
      1. Choose a few who will not want to buy again (and will leave the person pool)
   2. Choose some people who want to buy
   3. Iterate through sellers, from most valuable to least
      1. For each seller, sell to buyer with the highest budget
      2. Once transaction is completed, remove buyer from market, add seller to buyer’s market
         1. Randomly choose budget b/w 90% and 125% of original house value

Settings

* Rate of new construction
  + How often a brand-new house is created
  + Add to seller’s market
  + Randomly generated value
* Distribution of value for new construction
  + The distribution of prices that new houses are sold at
  + i.e. based on rent controls, random, buyer demand, etc
* Sell Rate
  + How often existing houses are put on the market
* Immigration Rate
  + How often new buyers appear in the market
* Emigration Rate
  + How often occupants leave the market