```
turtles-own[
                                                             tick
 insured?
                                                            end
 checked?
 numberofedges
                                                            to add-edge
 payoff
                                                             let node1 one-of turtles with[not checked?]
1
                                                             if node1 = nobody
globals[
 numberofinsued
                                                              display
 numberofnotinsured
                                                              user-message "insured clique finished"
 donewithinsured?
                                                              stop
 donewithnotinsured?
                                                              ]
 1
                                                             ask node1[
                                                              let node2 one-of turtles with [not link-neighbor?
to setup
 clear-all
                                                            node1 and (self != node1) and not checked?]
 setup-turtles
 reset-ticks
                                                              ifelse node2 = nobody
 set numberofinsued 0
 set donewithinsured? false
                                                               set checked? true
 set donewithnotinsured? false
                                                               add-edge
 setup-patches
end
                                                               let nolinkpayoff payoff
to setup-turtles
                                                               ifelse insured?
 set-default-shape turtles "circle"
                                                                :node1 is insured
 crt num-nodes
                                                                ask node2
 layout-circle turtles max-pxcor - 20
                                                                 let nolinkpayoff2 payoff
 ask turtles [
  set payoff 0
                                                                 ifelse insured?
  set insured? false
  set checked? false
                                                                  ;node2 and node1 insured
  set color red
                                                                  let newpayoff1 (nolinkpayoff + (beta / 100) -
                                                            (insurancelink / 100))
  if (random-float 100.0 < (prob-insured))[
                                                                  let newpayoff2 (nolinkpayoff2 + (beta / 100) -
   set color green
                                                            (insurancelink / 100))
   set insured? true
                                                                  if newpayoff1 > nolinkpayoff and newpayoff2
   set numberofinsued (numberofinsued + 1)
                                                            > nolinkpayoff2
   1
                                                                  [
                                                                    :add link
 ;ask turtles [ set label who set label-color black]
                                                                   create-link-with node1
                                                                   set payoff newpayoff2
end
                                                                    ask node1[
                                                                    set payoff newpayoff1
to setup-patches
ask patches [
                                                                   ]
 set pcolor white
 ]
                                                                  ;done with adding link
end
                                                                 [;begin else
to go
                                                                  ;node2 not insured
 if not donewithinsured? [
                                                                  let newpayoff1 (nolinkpayoff + (beta / 100) -
  add-edge
                                                            (risk / 100) - (insurancelink / 100))
 1
                                                                  let newpayoff2 (nolinkpayoff2 + (beta / 100))
```

```
if newpayoff1 > nolinkpayoff and newpayoff2
                                                                   ]
> nolinkpayoff2
                                                                  ;done with adding link
      [
       ;add link
       create-link-with node1
                                                                  1;end else
       set payoff newpayoff2
                                                                ];done with node2
       ask node1[
        set payoff newpayoff1
                                                               ]
                                                               ;set color green
       1
                                                               ;add-edge
      ;done with adding link
                                                               ]
      ];end else
                                                             layout
    ];done with node2
                                                            end
                                                            to add-edge-not-insured
    ;node1 not insured
                                                            let node1 one-of turtles with[not insured? and not
    ask node2
                                                            checked?]
                                                             if node1 = nobody
     let nolinkpayoff2 payoff
     ifelse insured?
                                                              ;display
                                                              ;user-message "non-insured clique finished"
      ;node2 insured and node1 not insured
      let newpayoff1 (nolinkpayoff + (beta / 100))
      let newpayoff2 (nolinkpayoff2 + (beta / 100) -
                                                             ask node1[
                                                              let node2 one-of turtles with [not insured? and
(risk / 100) - (insurancelink / 100))
      if newpayoff1 > nolinkpayoff and newpayoff2
                                                            not link-neighbor? node1 and (self != node1) and
> nolinkpayoff2
                                                            not checked?]
      ſ
                                                              ifelse node2 = nobody
       ;add link
       create-link-with node1
                                                               display
       set payoff newpayoff2
                                                               set donewithnotinsured? true
       ask node1[
                                                               set checked? true
        set payoff newpayoff1
                                                               add-edge-not-insured
                                                               ]
       ]
      ]
                                                              create-link-with node2
      ;done with adding link
                                                              add-edge-not-insured
                                                              1
     [;begin else
      ;node2 and node1 not insured
      let newpayoff1 (nolinkpayoff + (beta / 100) -
                                                              layout
(risk / 100))
      let newpayoff2 (nolinkpayoff2 + (beta / 100) -
                                                            end
(risk / 100))
      if newpayoff1 > nolinkpayoff and newpayoff2
                                                            to layout
> nolinkpayoff2
                                                             repeat 10 [
                                                              layout-spring (turtles with [any? link-neighbors])
      ſ
       ;add link
                                                            links 0.4 6 1
       create-link-with node1
                                                              display ;; so we get smooth animation
       set payoff newpayoff2
                                                             1
       ask node1[
                                                            end
        set payoff newpayoff1
```