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

```
;node2 and node1 insured
                                                        let nolinkpayoff2 payoff
      let newpayoff1 (nolinkpayoff +
                                                        ifelse insured?
(beta / 100) - (insurancelink / 100))
                                                        ſ
      let newpayoff2 (nolinkpayoff2 +
                                                         ;node2 insured and node1 not
(beta / 100) - (insurancelink / 100))
                                                   insured
      if newpayoff1 > nolinkpayoff and
                                                         let newpayoff1 (nolinkpayoff +
newpayoff2 > nolinkpayoff2
                                                   (beta / 100))
                                                         let newpayoff2 (nolinkpayoff2 +
       :add link
                                                   (beta / 100) - (risk / 100) - (insurancelink
       create-link-with node1
                                                   / 100 ))
       set payoff newpayoff2
                                                         if newpayoff1 > nolinkpayoff and
       ask node1[
                                                   newpayoff2 > nolinkpayoff2
        set payoff newpayoff1
                                                          :add link
                                                          create-link-with node1
       ]
                                                          set payoff newpayoff2
      ;done with adding link
                                                          ask node1[
                                                           set payoff newpayoff1
     [;begin else
      ;node2 not insured
                                                          ]
      let newpayoff1 (nolinkpayoff +
                                                         1
(beta / 100) - (risk / 100) - (insurancelink
                                                         ;done with adding link
/ 100 ))
      let newpayoff2 (nolinkpayoff2 +
                                                        [;begin else
(beta / 100))
                                                         ;node2 and node1 not insured
      if newpayoff1 > nolinkpayoff and
                                                         let newpayoff1 (nolinkpayoff +
newpayoff2 > nolinkpayoff2
                                                   (beta / 100) - (risk / 100))
      [
                                                         let newpayoff2 (nolinkpayoff2 +
       ;add link
                                                   (beta / 100) - (risk / 100))
       create-link-with node1
                                                         if newpayoff1 > nolinkpayoff and
       set payoff newpayoff2
                                                   newpayoff2 > nolinkpayoff2
       ask node1[
                                                         ſ
        set payoff newpayoff1
                                                          :add link
                                                          create-link-with node1
       ]
                                                          set payoff newpayoff2
      ;done with adding link
                                                          ask node1[
                                                           set payoff newpayoff1
      1;end else
                                                          1
    ];done with node2
   1
                                                         ;done with adding link
    :node1 not insured
                                                         ];end else
    ask node2
                                                       ];done with node2
    ſ
```

```
]
                                                  ]
                                                 end
  ;set color green
  ;add-edge
  ]
 1
 layout
end
to add-edge-not-insured
let node1 one-of turtles with[not
insured? and not checked?]
if node1 = nobody
ſ
 ;display
 ;user-message "non-insured clique
finished"
 stop
 ]
 ask node1[
  let node2 one-of turtles with [not
insured? and not link-neighbor? node1
and (self != node1) and not checked?]
  ifelse node2 = nobody
 [
  display
  set donewithnotinsured? true
  set checked? true
  add-edge-not-insured
  ]
 create-link-with node2
 add-edge-not-insured
  ]
 ]
 layout
end
to layout
 repeat 10 [
  layout-spring (turtles with [any? link-
neighbors]) links 0.4 6 1
  display ;; so we get smooth animation
```