NetLogoCode

breed [ wanderers wanderer ] ;; big red turtle that moves around

breed [ standers stander ] ;; little gray turtles that just stand there

wanderers-own [flockmates nearest-neighbor]

to setup

clear-all

;; make a background of lots of randomly scattered

;; stationary gray turtles

create-standers 1

[

setxy random-xcor random-ycor

set color gray ;; creating circle that will show as a object in a canvas

set size 10

set Shape "Circle"

]

;; make one big red turtle that is going to move around

create-wanderers population

[

set color White

set size 8

setxy random-xcor random-ycor ;; creating wanderes for flocking

]

reset-ticks

;; make the vision cone initially visible

go

end

to go

ask standers [ set color gray ]

ask patches [set pcolor black]

ask wanderers

[

fd 1

flock

;; could use IN-CONE-NOWRAP here instead of IN-CONE

ifelse Show-vision-cone?

[ ask patches in-cone vision-distance vision-angle [set pcolor white - 5]]

[] ;; creating swtich button for on and off for vision cone

ifelse show-travel-line?

[pen-down][pen-up] ;; creating switch for making trail of the wanderers

]

tick

;

ask standers [

fd Speed

if pcolor = black

[right Angle] ;; for moving a circle in a direction

]

end

to flock ;; turtle procedure

find-flockmates

if any? flockmates

[

rt search-angle

lt search-angle ;; searching the neighbours

find-nearest-neighbor

ifelse distance nearest-neighbor < perspace

[

rt random 180

fd escape-jump ;; checking if it is in per space or not

set color red

]

[

ifelse distance nearest-neighbor < near-view ;; checking if it is in near view or not

[ set color orange

rt 20

lt 20

fd 1

]

[

ifelse distance nearest-neighbor < max-view ;; checking if it is in Maxview or not

[

face nearest-neighbor

fd joining-jump

fd escape-angle

set color yellow

]

[set color white]

]

]

]

end

to find-flockmates

set flockmates other turtles in-cone max-view vision-angle

end

to find-nearest-neighbor

set nearest-neighbor min-one-of flockmates [distance myself]

end