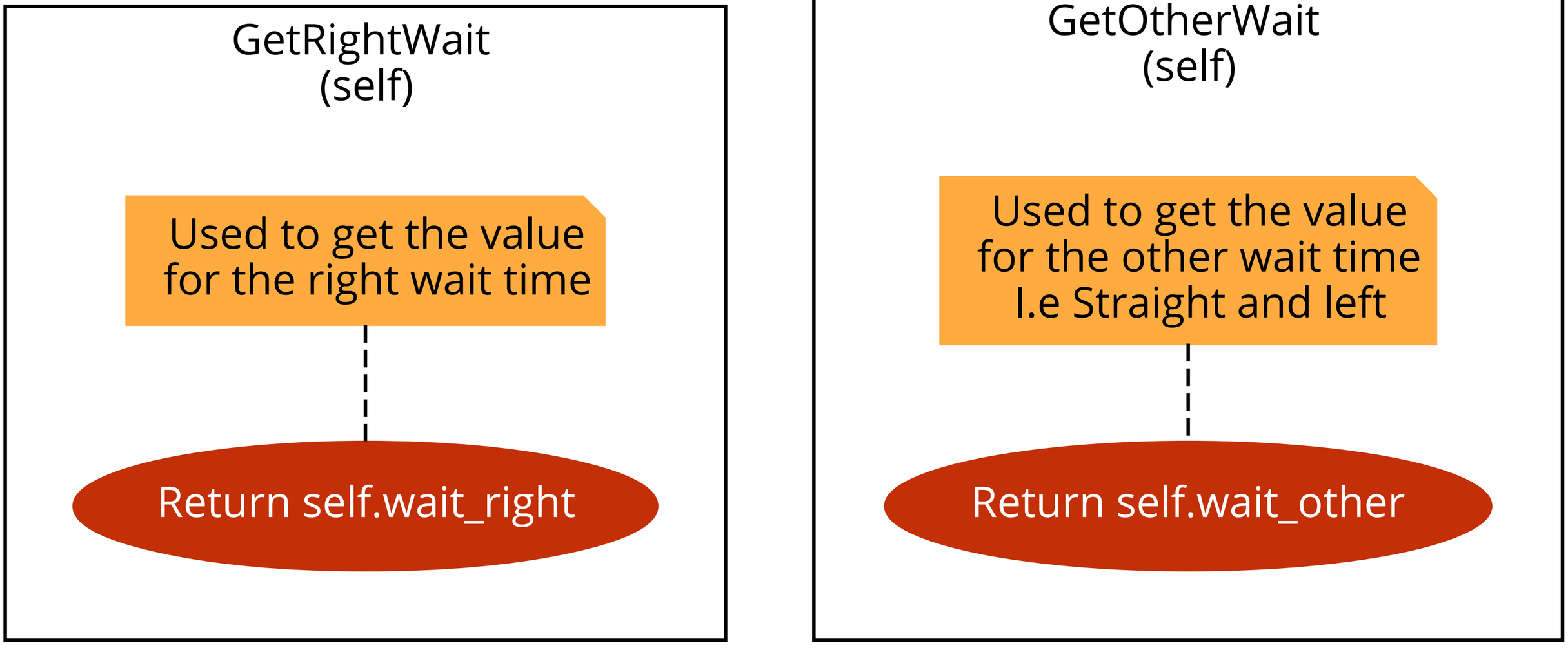

GetRightWait
(self)
Used to get the value
for the right wait time
Return self.wait_right
GetOtherWait
(self)
Used to get the value
for the other wait time
I.e Straight and left
Return self.wait_other

IncrementAllWaits

Is used to add 1 to the wait times for every light

Example function call

northController.IncrementBothWaits()

IncrementAllWaits

eastController.IncrementBothWaits()

southController.IncrementBothWaits()

westController.IncrementBothWaits()

Return

IncrementRightWait
(self)

Is used to increment the wait var for the right bay

self.wait_right += 1

Return

IncrementOtherWait
(self)

Is used to increment the wait var for the other bay's I.E straight and left

self.wait_other += 1

Return

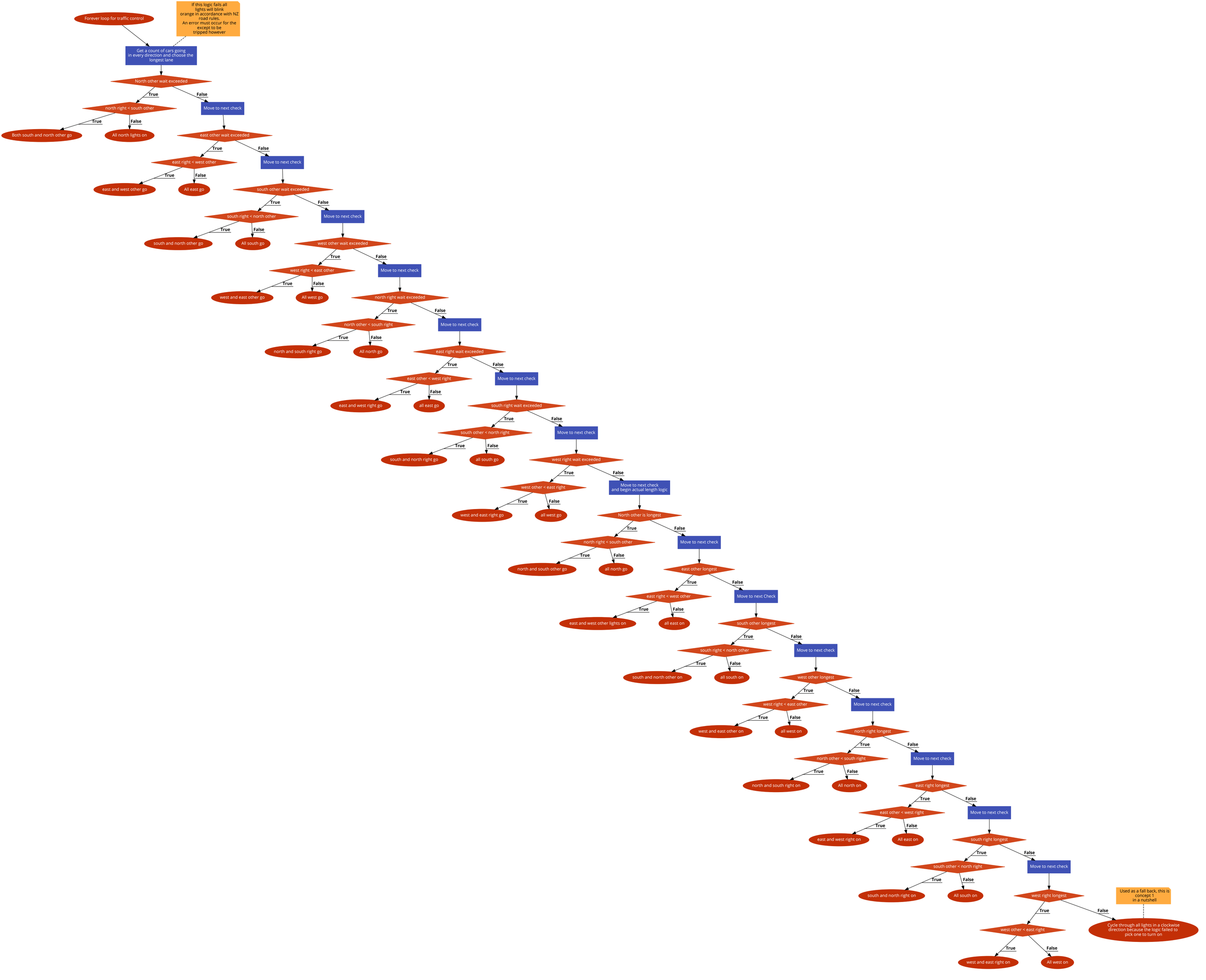
IncrementBothWaits
(self)

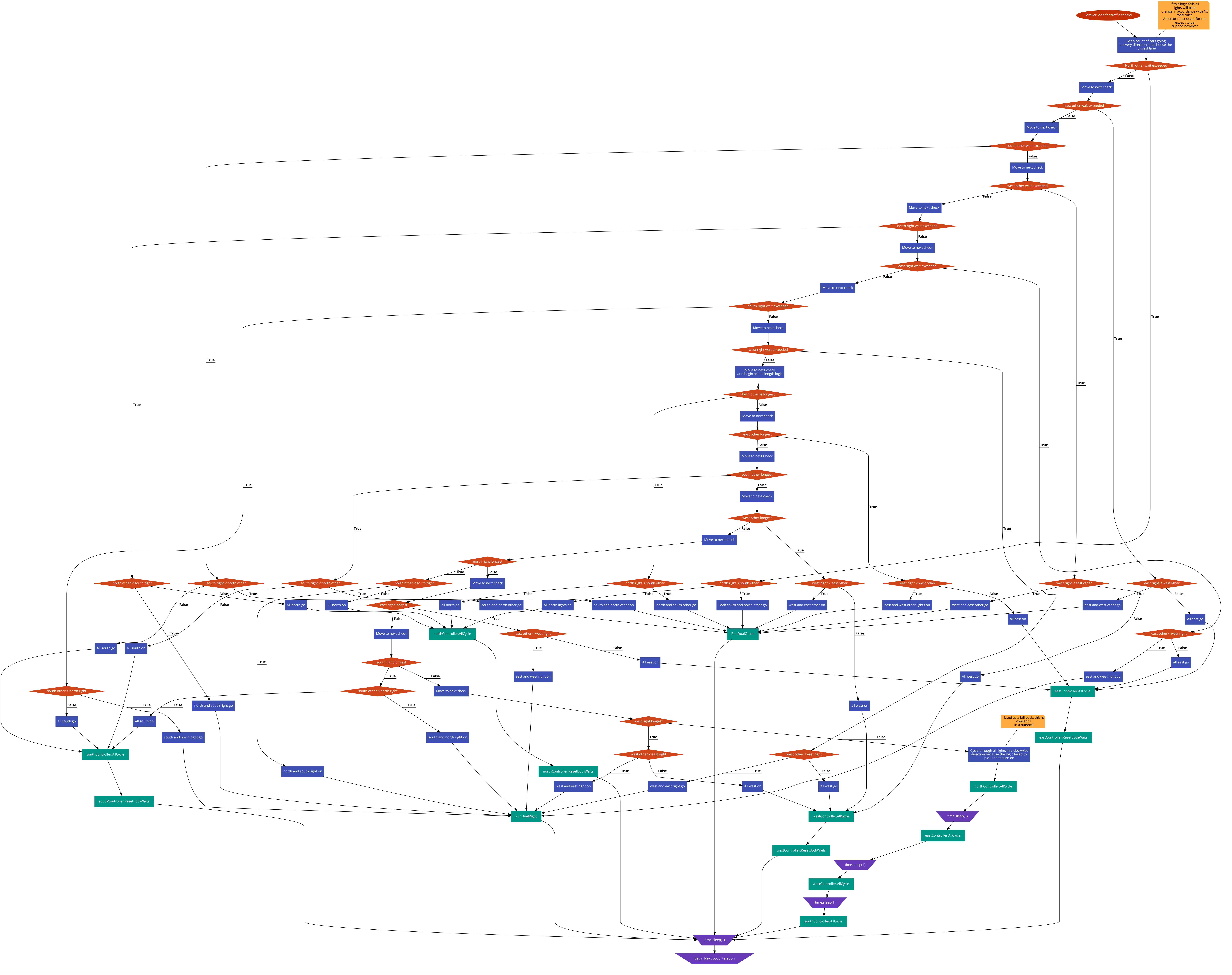
Is used to increment both of this class's wait variables

IncrementRightWait

IncrementOtherWait

Return


Forever loop for traffic control
if this logic fails all lights will blink orange in accordance with NZ road rules. An error must occur for the except to be tripped however
Get a count of cars going in every direction and choose the longest lane
North other wait exceeded
True
False
north right < south other
Move to next check
True
False
Both south and north other go
All north lights on
east other wait exceeded
True
False
east right < west other
Move to next check
True
False
east and west other go
All east go
south other wait exceeded
True
False
south right < north other
Move to next check
True
False
south and north other go
All south go
west other wait exceeded
True
False
west right < east other
Move to next check
True
False
west and east other go
All west go
north right wait exceeded
True
False
north other < south right
Move to next check
True
False
north and south right go
All north go
east right wait exceeded
True
False
east other < west right
Move to next check
True
False
east and west right go
all east go
south right wait exceeded
True
False
south other < north right
Move to next check
True
False
south and north right go
all south go
west right wait exceeded
True
False
west other < east right
Move to next check and begin actual length logic
True
False
west and east right go
all west go
North other is longest
True
False
north right < south other
Move to next check
True
False
north and south other go
all north go
east other longest
True
False
east right < west other
Move to next Check
True
False
east and west other lights on
all east on
south other longest
True
False
south right < north other
Move to next check
True
False
south and north other on
all south on
west other longest
True
False
west right < east other
Move to next check
True
False
west and east other on
all west on
north right longest
True
False
north other < south right
Move to next check
True
False
north and south right on
All north on
east right longest
True
False
east other < west right
Move to next check
True
False
east and west right on
All east on
south right longest
True
False
south other < north right
Move to next check
True
False
south and north right on
All south on
west right longest
True
False
west other < east right
Used as a fall back, this is concept 1 in a nutshell
True
False
west and east right on
All west on
Cycle through all lights in a clockwise direction because the logic failed to pick one to turn on



Forever loop for traffic control
If this logic fails all lights will blink orange in accordance with NZ road rules. An error must occur for the except to be tripped however
Get a count of cars going in every direction and choose the longest lane
North other wait exceeded
Move to next check
east other wait exceeded
south other wait exceeded
west other wait exceeded
north right wait exceeded
east right wait exceeded
south right wait exceeded
west right wait exceeded
Move to next check and begin actual length logic
North other is longest
east other longest
Move to next Check
south other longest
west other longest
north right longest
north other < south right
south right < north other
north other < south right
north right < south other
north right < south other
west right < east other
east right < west other
west right < east other
east right < west other
All north go
All north on
all north go
south and north other go
All north lights on
south and north other on
north and south other go
Both south and north other go
west and east other on
east and west other lights on
west and east other go
east and west other go
all east on
All east go
east right longest
northController.AllCycle
RunDualOther
east other < west right
east other < west right
all south go
all south on
east and west right on
All east on
All west go
east and west right go
all east go
eastController.AllCycle
south right longest
Move to next check
south other < north right
south other < north right
north and south right go
all west on
all south go
All south on
south and north right go
south and north right on
west right longest
Used as a fall back, this is concept 1 in a nutshell
eastController.ResetBothWaits
Cycle through all lights in a clockwise direction because the logic failed to pick one to turn on
southController.AllCycle
west other < east right
west other < east right
north and south right on
northController.ResetBothWaits
west and east right on
west and east right go
All west on
all west go
northController.AllCycle
southController.ResetBothWaits
RunDualRight
westController.AllCycle
time.sleep(1)
eastController.AllCycle
westController.ResetBothWaits
time.sleep(1)
westController.AllCycle
time.sleep(1)
southController.AllCycle
time.sleep(1)
Begin Next Loop Iteration
True
False

OtherCycle
(self)

Cycles through turning all other lights on then off
Leaving right lights off

Turn all lights off

Turn right light to red
Turn other light to green

Wait self.INTERVAL

Turn all lights off

Turn right light to red
Turn other light to orange

Wait self.INTERVAL

Turn lights to red

Return

Example call
northController.OtherCycle()

OtherCycle

ResetAllWaits

Is used to reset the wait times for every light

northController.ResetBothWaits()

eastController.ResetBothWaits()

southController.ResetBothWaits()

westController.ResetBothWaits()

Return

Example function call

ResetAllWaits

ResetRightWait
(self)

Is used to reset the wait time for the right var for this class instance. I.E right wait time

self.wait_right = 0

Return

ResetOtherWait
(self)

Is used to reset the wait time for the other var in charge of stragith / left waits for this instance

self.other_wait = 0

Return

ResetBothWaits
(self)

Resets both wait times

ResetRightWait

ResetOtherWait

Return

RightCycle
(self)

Cycles through turning all
right lights on then off

Example call
northController.RightCycle()

Turn all lights off

RightCycle

Turn right light to green
Turn other light to red

Wait self.INTERVAL

Turn all lights off

Turn right light to orange
Turn other light to red

Wait self.INTERVAL

Turn lights to red

Return

RunDual
(controllerOne, controllerTwo)

We use threading to turn on two seperate light controllers at once

set a thread worker to controllerOne.Cycle

set a thread worker to controllerTwo.Cycle

start both thread workers

Call join() to wait for them to finish

Reset the wait time for controllerOne

Reset the wait time for controllerTwo

Return

northController, southController

An example function call

RunDual

sensor
(controller, lane)

This controls the removal of cars from the releant lane of traffic

Example function call

sensor

northController, northLane

lights are broken

True

False

No cars go

More cars in the lane

True

Both lights are green or orange

True

False

Right turning light is green or orange

Remove next car in lane

True

False

False

Other light is green or orange

Remove next car going right in said lane

True

Remove next car going straight or left in said lane

False

Return

AllCycle
(self)

Cycles through turning all lights on then off

Example call
northController.AllCycle()

Turn all lights off

AllCycle

Turn both lights to green

Wait self.INTERVAL

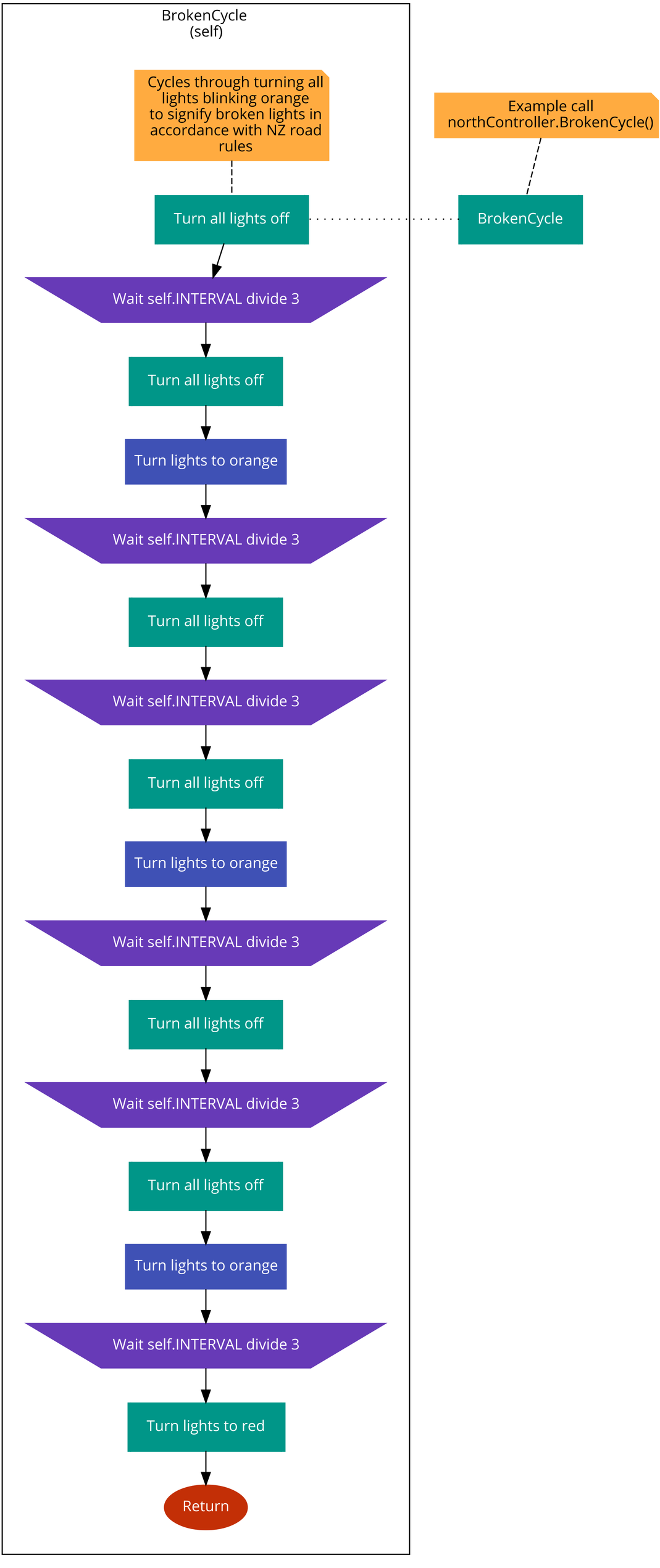
Turn all lights off

Turn both lights to orange

Wait self.INTERVAL

Turn lights to red

Return


BrokenCycle
(self)
Cycles through turning all lights blinking orange to signify broken lights in accordance with NZ road rules
Example call northController.BrokenCycle()
Turn all lights off
BrokenCycle
Wait self.INTERVAL divide 3
Turn all lights off
Turn lights to orange
Wait self.INTERVAL divide 3
Turn all lights off
Wait self.INTERVAL divide 3
Turn all lights off
Turn lights to orange
Wait self.INTERVAL divide 3
Turn all lights off
Wait self.INTERVAL divide 3
Turn all lights off
Turn lights to orange
Wait self.INTERVAL divide 3
Turn lights to red
Return

CountAllCars
(lane)

Counts all the cars in the lane onto two sides so we can get numbers

right, other = 0

For car in lane

Another car in the lane?

True

False

Car direction is right

Return right, other

True

False

right += 1

other += 1

Next iteration