

Pausing

At this point, the game is paused when you run it. It won't start until you press the spacebar. If you press it during the game, it'll pause, and the entities disappear while it's paused. These are the only 2 events that pause the game as of now.

Run.py

```
import pygame
from pygame.locals import *
from constants import *
from pacman import Pacman
from nodes import NodeGroup
from pellets import PelletGroup
from ghosts import GhostGroup
from fruit import Fruit
from pauser import Pause

class GameController(object):
    def __init__(self):
        pygame.init()
        self.screen = pygame.display.set_mode(SCREENSIZE, 0, 32)
        self.background = None
        self.clock = pygame.time.Clock()
        self.fruit = None
        self.pause = Pause(True)

    def setBackground(self):
        self.background = pygame.surface.Surface(SCREENSIZE).convert()
        self.background.fill(BLACK)

    def startGame(self):
        self.setBackground()
        self.nodes = NodeGroup("maze01.txt")
        self.nodes.setPortalPair((0,17), (27,17))
        homekey = self.nodes.createHomeNodes(11.5, 14)
        self.nodes.connectHomeNodes(homekey, (12,14), LEFT)
        self.nodes.connectHomeNodes(homekey, (15,14), RIGHT)
        self.pacman = Pacman(self.nodes.getNodeFromTiles(15, 26))
        self.pellets = PelletGroup("maze01.txt.")
        self.ghosts = GhostGroup(self.nodes.getStartTempNode(), self.pacman)
        self.ghosts.blinky.setStartNode(self.nodes.getNodeFromTiles(2+11.5, 0+14))
        self.ghosts.pinky.setStartNode(self.nodes.getNodeFromTiles(2+11.5, 3+14))
        self.ghosts.inky.setStartNode(self.nodes.getNodeFromTiles(0+11.5, 3+14))
        self.ghosts.clyde.setStartNode(self.nodes.getNodeFromTiles(4+11.5, 3+14))
        self.ghosts.setSpawnNode(self.nodes.getNodeFromTiles(2+11.5, 3+14))
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def update(self):
    dt = self.clock.tick(30) / 1000.0
    self.pellets.update(dt)
    if not self.pause.paused:
        self.pacman.update(dt)
        self.ghosts.update(dt)
        if self.fruit is not None:
            self.fruit.update(dt)
        self.checkGhostEvents()
        self.checkPelletEvents()
        self.checkFruitEvents
    afterPauseMethod = self.pause.update(dt)
    if afterPauseMethod is not None:
        afterPauseMethod()
    self.checkEvents()
    self.render()

def checkEvents(self):
    for event in pygame.event.get():
        if event.type == QUIT:
            exit()
        elif event.type == KEYDOWN:
            if event.key == K_SPACE:
                self.pause.setPause(playerPaused=True)
            if not self.pause.paused:
                self.showEntities()
            else:
                self.hideEntities()

def checkGhostEvents(self):
    for ghost in self.ghosts:
        if self.pacman.collideGhost(ghost):
            if ghost.mode.current is FREIGHT:
                self.pacman.visible = False
                ghost.visible = False
                self.pause.setPause(pauseTime=1, func=self.showEntities)
                ghost.startSpawn()

def checkPelletEvents(self):
    pellet = self.pacman.eatPellets(self.pellets.pelletList)
    if pellet:
        self.pellets.numEaten += 1
        self.pellets.pelletList.remove(pellet)
        if pellet.name == POWERPELLET:
            self.ghosts.startFreight()

def checkFruitEvents(self):
    if self.pellets.numEaten == 50 or self.pellets.numEaten == 140:
        if self.fruit is None:
            self.fruit = Fruit(self.nodes.getNodeFromTiles(9, 20))
    if self.fruit is not None:
        if self.pacman.collideCheck(self.fruit):

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        self.fruit = None
    elif self.fruit.destroy:
        self.fruit = None

    def showEntities(self):
        self.pacman.visible = True
        self.ghosts.show()

    def hideEntities(self):
        self.pacman.visible = False
        self.ghosts.hide()

    def render(self):
        self.screen.blit(self.background, (0,0))
        self.nodes.render(self.screen)
        self.pellets.render(self.screen)
        if self.fruit is not None:
            self.fruit.render(self.screen)
        self.pacman.render(self.screen)
        self.ghosts.render(self.screen)
        pygame.display.update()

if __name__ == "__main__":
    game = GameController()
    game.startGame()
    while True:
        game.update()

```

Pacman.py

```

import pygame
from pygame.locals import *
from vector import Vector2
from constants import *
from entity import Entity

class Pacman(Entity):
    def __init__(self, node):
        Entity.__init__(self, node)
        self.name = PACMAN
        self.position = Vector2(200, 400)
        self.directions = {STOP:Vector2(), UP:Vector2(0,-1), DOWN:Vector2(0,1), LEFT:Vector2(-1,0),
RIGHT:Vector2(1,0)}
        self.direction = STOP
        self.speed = 100
        self.radius = 10
        self.color = YELLOW
        self.direction = LEFT
        self.node = node
        self.setPosition()

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self.target = node
self.collideRadius = 5

def update(self, dt):
    self.position += self.directions[self.direction]*self.speed*dt
    direction = self.getValidKey()
    if self.overshotTarget():
        self.node = self.target
        if self.node.neighbors[PORTAL] is not None:
            self.node = self.node.neighbors[PORTAL]
        self.target = self.getNewTarget(direction)
        if self.target is not self.node:
            self.direction = direction
        else:
            self.target = self.getNewTarget(self.direction)

        if self.target is self.node:
            self.direction = STOP
        self.setPosition()
    else:
        if self.oppositeDirection(direction):
            self.reverseDirection()

def eatPellets(self, pelletList):
    for pellet in pelletList:
        if self.collideCheck(pellet):
            return pellet
    return None

def collideGhost(self, ghost):
    return self.collideCheck(ghost)

def collideCheck(self, other):
    d = self.position - other.position
    dSquared = d.magnitudeSquared()
    rSquared = (self.collideRadius + other.collideRadius)**2
    if dSquared <= rSquared:
        return True
    return False

def getValidKey(self):
    key_pressed = pygame.key.get_pressed()
    if key_pressed[K_UP]:
        return UP
    if key_pressed[K_DOWN]:
        return DOWN
    if key_pressed[K_LEFT]:
        return LEFT
    if key_pressed[K_RIGHT]:
        return RIGHT
    return STOP

```

Pauser.py

```
class Pause(object):
    def __init__(self, paused=False):
        self.paused = paused
        self.timer = 0
        self.pauseTime = None
        self.func = None

    def update(self, dt):
        if self.pauseTime is not None:
            self.timer += dt
            if self.timer >= self.pauseTime:
                self.timer = 0
                self.paused = False
                self.pauseTime = None
                return self.func
        return None

    def setPause(self, playerPaused=False, pauseTime=None, func=None):
        self.timer = 0
        self.func = func
        self.pauseTime = pauseTime
        self.flip()

    def flip(self):
        self.paused = not self.paused
```