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import turtle
import time
import random

delay = 0.1

# Score
score = 0
high_score = 0

# Set up the screen
wn = turtle.Screen()
wn.title("Snake Assignment Ahmad")
wn.bgcolor("#e3d252")
wn.setup(width=600, height=600)
wn.tracer(0) # Turns off the screen updates

# Snake head
head = turtle.Turtle()
head.speed(0)
head.shape("square")
head.color("black")
head.penup()
head.goto(0,0)
head.direction = "stop"

# Snake food
food = turtle.Turtle()
food.speed(0)
food.shape("circle")
food.color("green")
food.penup()
food.goto(0,100)

segments = []

# Pen
pen = turtle.Turtle()
pen.speed(0)
pen.shape("square")
pen.color("white")
pen.penup()
pen.hideturtle()
pen.goto(0, 260)
pen.write("Score: 0   High Score: 0", align="center", font=("Courier", 24,
"normal"))

# Functions
def go_up():
    if head.direction != "down":
        head.direction = "up"

def go_down():
    if head.direction != "up":
        head.direction = "down"

def go_left():

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        if head.direction != "right":
            head.direction = "left"

def go_right():
    if head.direction != "left":
        head.direction = "right"

def move():
    if head.direction == "up":
        y = head.ycor()
        head.sety(y + 20)

    if head.direction == "down":
        y = head.ycor()
        head.sety(y - 20)

    if head.direction == "left":
        x = head.xcor()
        head.setx(x - 20)

    if head.direction == "right":
        x = head.xcor()
        head.setx(x + 20)

# Keyboard bindings
wn.listen()
wn.onkeypress(go_up, "w")
wn.onkeypress(go_down, "s")
wn.onkeypress(go_left, "a")
wn.onkeypress(go_right, "d")

# Main game loop
while True:
    wn.update()

    # Check for a collision with the border
    if head.xcor() > 290 or head.xcor() < -290 or head.ycor() > 290 or
head.ycor() < -290:
        time.sleep(1)
        head.goto(0,0)
        head.direction = "stop"

        # Hide the segments
        for segment in segments:
            segment.goto(1000, 1000)

        # Clear the segments list
        segments.clear()

        # Reset the score
        score = 0

        # Reset the delay
        delay = 0.1

    pen.clear()

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        pen.write("Score: {}  High Score: {}".format(score, high_score),
align="center", font=("Courier", 24, "normal"))

# Check for a collision with the food
if head.distance(food) < 20:
    # Move the food to a random spot
    x = random.randint(-290, 290)
    y = random.randint(-290, 290)
    food.goto(x,y)

    # Add a segment
    new_segment = turtle.Turtle()
    new_segment.speed(0)
    new_segment.shape("square")
    new_segment.color("grey")
    new_segment.penup()
    segments.append(new_segment)

    # Shorten the delay
    delay -= 0.001

    # Increase the score
    score += 10

    if score > high_score:
        high_score = score

    pen.clear()
    pen.write("Score: {}  High Score: {}".format(score, high_score),
align="center", font=("Courier", 24, "normal"))

# Move the end segments first in reverse order
for index in range(len(segments)-1, 0, -1):
    x = segments[index-1].xcor()
    y = segments[index-1].ycor()
    segments[index].goto(x, y)

# Move segment 0 to where the head is
if len(segments) > 0:
    x = head.xcor()
    y = head.ycor()
    segments[0].goto(x,y)

move()

# Check for head collision with the body segments
for segment in segments:
    if segment.distance(head) < 20:
        time.sleep(1)
        head.goto(0,0)
        head.direction = "stop"

        # Hide the segments
        for segment in segments:
            segment.goto(1000, 1000)

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# Clear the segments list
segments.clear()

# Reset the score
score = 0

# Reset the delay
delay = 0.1

# Update the score display
pen.clear()
pen.write("Score: {} High Score: {}".format(score, high_score),
align="center", font=("Courier", 24, "normal"))

    time.sleep(delay)

wn.mainloop()
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