

Gamebox day 2

***your partner can be in any lab
***exam 2 scores posted in Collab
***tpegs is an overview of your specific test
 <https://tpegs.cs.virginia.edu/>
***regrade requests accepted until the 15th

Can't start designing a game without a goal for the player and feedback to show if they've achieved it

Will be working with yesterday's game, adding features:

```
import pygame
import gamebox
import random
camera = gamebox.Camera(800, 600)
character = gamebox.from_color(camera.x, camera.y, 'red', 20, 40)
time = 9000
# let's add a ground in a list of walls displayed on the screen
# from_color works when you just want a rectangular object
# from_text displays strings on the screen
walls = [
    gamebox.from_color(400, 600, 'black', 802, 100)
]
character.yspeed = 0
# add some coins to collect -- one hard-coded, and the rest randomized
def random_coin():
    return gamebox.from_color(random.randint(10, 790), random.randint(450, 550), 'yellow',
12, 12)
coins = [
    gamebox.from_color(300, 450, 'yellow', 12, 12)
]
score = 0
def tick(keys):
    global time
    global score
    camera.clear("blue")
    if time > 0:
        time -= 1
    frac = str(int((time%ticks_per_second)/ticks_per_second*10))
    sec = str(int((time/ticks_per_second)%60)).zfill(2)
    min = str(int((time/ticks_per_second)/60))
    timer = gamebox.from_text(650, 100, "Time remaining " + min + ":" + sec + "." + frac,
"Arial", 24, "white")
    # let's make him move a different speed in different directions -- maybe there's wind?
    if pygame.K_RIGHT in keys:
        character.x += 5
    if pygame.K_LEFT in keys:
        character.x -= 15
```

```

# don't want our guy just flying--let's add gravity
character.yspeed += 1
character.y = character.y + character.yspeed
# now, he falls off the screen. need to make him stop when he hits the ground
for wall in walls:
    if character.bottom_touches(wall):
        character.yspeed = 0
        # this will make it stop only briefly
        if pygame.K_SPACE in keys:
            character.yspeed -= 20
            # this lets it jump if we hit the space bar, but only when on the ground
            # if we put this code outside of this function, it could jump in the air
        if character.touches(wall):
            character.move_to_stop_overlapping(wall)
            # this will make that stop permanent
# what if our guy goes off the screen? let's bring him back with some booleans
if character.x < 0:
    character.x = 800
if character.x > 800:
    character.x = 0
if character.y < 0:
    character.y = 600
if character.y > 600:
    character.y = 0
# keeping track of the score
scorer = gamebox.from_text(150, 100, "Score: " + str(score), 'Arial', 24, 'white')
# nothing shows up unless you draw it
camera.draw(timer)
camera.draw(character)
camera.draw(scorer)
for coin in coins:
    camera.draw(coin)
    if character.touches(coin):
        score += 10
        coins.remove(coin)
        coins.append(random_coin())
for wall in walls:
    camera.draw(wall)
# let's make it game over when you run out of time
if time <= 0:
    camera.draw(gamebox.from_text(400, 300, "Game over !!!", 'Arial', 70, "white"))
    camera.display()
ticks_per_second = 30
gamebox.timer_loop(ticks_per_second, tick)

```

try including the following code
when detecting the game over
gamebox.pause()