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Project Name: Physics Simulator
With this physics simulator, you're able to visualize physical phenomena in our Earth and even the Universe. Using classical physics, you're able to change what you want to change--mass, height, or velocity--depending on which scenario you pick. Additionally, you'll be able to see relevant graphs from the visualization.

Competitive Analysis
What inspired me to do this is visiting physics websites that give us a large piece of text about a physical concept and give us small animations. While that sure is useful, physics does require experimentation, and, with this simulator, you can experiment with different values and see how it varies. This is important because science always requires us to test with different values to verify their theory.

Structural Plan
I'm mostly relying on using 15-112's own graphics module to do this project, so that means I'm using every built-in function (like appStarted or redrawAll) that the module offers. The only files that will be in my term project folder is the cmu_112_graphics.py and my term project.

Algorithmic Plan
For me, the trickiest part is making sure that the physics is right. I've noticed that the implementing physics in tkinter tends to get weird due to how different tkinter coordinate system work (from bottom to top) and how the animations are being run in the python program. I had to do some guessing work because of both of these. But I've started to get the hang of it.

Timeline Plan
-   Try to get MVP by TP2 to use another module. **(DONE)**
-   Add conceptual information after an animation is played. **(DONE)**

Version Control Plan

```
from cmu_112_graphics import *
import math
import time
import string
"""
class MainMenu(mode):
    def appStarted(app):
        app.box1X = 200 #boxlength = 500, boxheight = 150
        app.box1Y = 350
        app.box2X = 900
        app.box2Y = 350
        app.box3X = 200
        app.box3Y = 550
        app.box4X = 900
        app.box4Y = 550
        app.mainMenuText = "Welcome to my Physics Simulator!"
        app.authorText = "Made by: David Bautista"
        app.pickText = "Pick a physics scenario to experiment with the simulation!"
        app.orbitText = "Newton's Law of Gravitation"
        app.pendulumText = "Pendulum Motion"
        app.projText = "Projectile Motion"
        app.inelasticText1 = "Conservation of Momentum"
        app.inelasticText2 = "(Perfectly Inelastic Collision)"
    def mousePressed(app, event):
        if (app.box1X < event.x < app.box1X + 500) and (app.box1Y < event.y < app.box1Y+150):
"""
def appStarted(app):
    ##########################PROJECTILE MOTION
ATTRIBUTES#######################
    ##########ATTRIBUTES###########
    app.ballX = 75+200
    app.ballSize = 25
    app.dt = 0.05
    app.g = 9.8
    app.elapsedTime = 0
    app.timerDelay = 0
    ##################################
```

I put in my Google Drive, in my personal email.

Module List

Originally, I wanted to use VPython, but I decided to only use cmu_112_graphics. If I ever use VPython, it would have to be a physical scenario that's too difficult for Tkinter to animated.

TP2 Update: NO UPDATE
TP3 Update: NO UPDATE