Антонов Егор ПР-21.102,пр 35

Листинг main:

from kivy.app import App  
from kivy.uix.widget import Widget  
from kivy.properties import (  
 NumericProperty, ReferenceListProperty, ObjectProperty  
)  
from kivy.vector import Vector  
from kivy.clock import Clock  
  
  
class PongPaddle(Widget):  
 score = NumericProperty(0)  
  
 def bounce\_ball(self, ball):  
 if self.collide\_widget(ball):  
 vx, vy = ball.velocity  
 offset = (ball.center\_y - self.center\_y) / (self.height / 2)  
 bounced = Vector(-1 \* vx, vy)  
 vel = bounced \* 1.1  
 ball.velocity = vel.x, vel.y + offset  
  
  
class PongBall(Widget):  
 velocity\_x = NumericProperty(0)  
 velocity\_y = NumericProperty(0)  
 velocity = ReferenceListProperty(velocity\_x, velocity\_y)  
  
 def move(self):  
 self.pos = Vector(\*self.velocity) + self.pos  
  
  
class PongGame(Widget):  
 ball = ObjectProperty(None)  
 player1 = ObjectProperty(None)  
 player2 = ObjectProperty(None)  
  
 def serve\_ball(self, vel=(4, 0)):  
 self.ball.center = self.center  
 self.ball.velocity = vel  
  
 def update(self, dt):  
 self.ball.move()  
  
 # bounce off paddles  
 self.player1.bounce\_ball(self.ball)  
 self.player2.bounce\_ball(self.ball)  
  
 # bounce ball off bottom or top  
 if (self.ball.y < self.y) or (self.ball.top > self.top):  
 self.ball.velocity\_y \*= -1  
  
 # went off to a side to score point?  
 if self.ball.x < self.x:  
 self.player2.score += 1  
 self.serve\_ball(vel=(4, 0))  
 if self.ball.right > self.width:  
 self.player1.score += 1  
 self.serve\_ball(vel=(-4, 0))  
  
 def on\_touch\_move(self, touch):  
 if touch.x < self.width / 3:  
 self.player1.center\_y = touch.y  
 if touch.x > self.width - self.width / 3:  
 self.player2.center\_y = touch.y  
  
  
class PongApp(App):  
 def build(self):  
 game = PongGame()  
 game.serve\_ball()  
 Clock.schedule\_interval(game.update, 1.0 / 60.0)  
 return game  
  
  
if \_\_name\_\_ == '\_\_main\_\_':  
 PongApp().run()

файл pong.kv:

< PongBall >:  
size: 50, 50  
canvas:  
Ellipse:  
pos: self.pos  
size: self.size  
  
< PongPaddle >:  
size: 25, 200  
canvas:  
Rectangle:  
pos: self.pos  
size: self.size  
  
< PongGame >:  
ball: pong\_ball  
player1: player\_left  
player2: player\_right  
  
canvas:  
Rectangle:  
pos: self.center\_x - 5, 0  
size: 10, self.height  
  
Label:  
font\_size: 70  
center\_x: root.width / 4  
top: root.top - 50  
text: str(root.player1.score)  
  
Label:  
font\_size: 70  
center\_x: root.width \* 3 / 4  
top: root.top - 50  
text: str(root.player2.score)  
  
PongBall:  
id: pong\_ball  
center: self.parent.center  
  
PongPaddle:  
id: player\_left  
x: root.x  
center\_y: root.center\_y  
  
PongPaddle:  
id: player\_right  
x: root.width - self.width  
center\_y: root.center\_y





