

14_joystick_input.py

```
"""
Richlib has a gamepad API that is a bit different from Pygame's
"""
from richlib import *

alien = Actor('trooper')
alien.size = (20, 20, 20)
alien.pos = (0, 10, 10)

def draw():
    clear()
    alien.draw()

def update():
    if gamepad.up:
        print("up")
    if gamepad.y:
        print("Y")
    if gamepad.left_stick.x > 0.3:
        alien.x = alien.x + 1
    elif gamepad.left_stick.x < -0.3:
        alien.x = alien.x - 1

run()

"""TODO
make the alien move up/down and forward/back as well as left/right
"""
```

15_collisions.py

```
"""
Most of this code is copied from programs 12 and 13
"""

from richlib import *

cube = Cube((0, 10, 0), (10, 20, 10), 'blue')
alien = Actor('trooper')
alien.size = (20,20,20)
alien.collision_radius = 20

def draw():
    clear()
    alien.draw()
    cube.draw()

def update():
    if keyboard.right:
        alien.x += 1
    elif keyboard.left:
        alien.x -= 1
    cube.x += 1
    if cube.x > 100:
        cube.x = -100
    if alien.check_collision(cube):
        alien.color = RED
    else:
        alien.color = WHITE

run()

""" TODO
joystick input (again), vertical movement (again)
make the box chase the alien
print number of times hit (the score)"""
```

16_mouse.py

```
"""
    """ get the mouse position and test if mouse buttons are pressed
    """
from richlib import *

cube = Cube((0, 10, 0), (10, 20, 10), 'blue')

def draw():
    clear()
    cube.draw()

def update():
    cube.pos = mouse.ground_position

    if mouse.left_button:
        print("button held down")
    if mouse.clicked:
        print("mouse click")

run()

""" TODO
    Make the cube jump up when the mouse button is clicked
    Make the cube change colour when the mouse button is held down
    """
```

17_mouse_collisions.py

```
"""
    """ we can check if the mouse pointer is touching a 3d object
    """
from richlib import *

cube = Cube((0, 10, 0), (10, 20, 10), 'blue')

def draw():
    clear()
    cube.draw()

def update():
    cube.x = cube.x + 1
    if cube.x > 100:
        cube.x = -100
    if mouse.clicked:
        if mouse.check_collision(cube):
            print("hit")
        else:
            print("miss")

run()

""" TODO
    increase player score every time he clicks on cube
    make cube get smaller each time he clicks on it
    make it move to a random place after it is clicked on, e.g.
    import random
    x = random.randint(0, 100)
    """
```