LESSON 4: BOX2D GAME (ARKANOID)

Exercises

Download the “box2D_ARKANOID” sketch you will find in this folder. It is basically the same sketch we worked during the last class. Keep working on it, doing the following:

1) **Again, implement a status variable in our ARKANOID game** that will indicate following:

   Status = 0 => Waiting for Kick-Off. Ball is stopped. If we press <SPACE> and ball starts moving, status will change to value 1.

   Status = 1 => On the normal game. Ball moves freely. If player loses, then status must value 0 again.

2) **Change ball position on start**. It must be located over the player and joined to it (if player moves left/right, ball should move with it).

   HINT: You must apply a velocity to the ball in the same way we apply it to move the player. Remember we SHOULD NOT do it during the game, since it breaks the physics laws, so this velocity must be applied only if status = 0.

   REMEMBER WHAT WE DO TO MOVE PLAYER (MOVE METHOD IN PLAYER CLASS):

```
void move(float x, float y) {
  Vec2 pos = body.getWorldCenter();
  Vec2 target = box2d.coordPixelsToWorld(x, y);
  target.y = pos.y;

  // A vector pointing from the body position to the Mouse
  Vec2 v = target.sub(pos);
  v.mulLocal(10);
  body.setLinearVelocity(v);
}
```

3) **Kick-Off must be done only if status = 0**. Now, if we press <SPACE> during the game we apply a random force to the ball. Use status variable to apply the force only if status = 0.

4) **Declare a new global integer variable "points"** in main sketch. Do following:

    a. Increase points according to the game, whenever a brick is deleted, add 10 points to variable.
    b. Display points on the canvas, below "frameRate" and "elements".

5) **Change the BRICK class to make bricks more resistent. Now you will need 2 collisions to make a brick disappear.** This parameter will start with value 0. The behavior must be:

    a. At the beginning the "collisions" parameter will have a value of 0. The brick will have its normal color.
    b. When a collision has been detected, "collisions" will have a value of 1. The brick will change its color to grey.
    c. When a second collision has been detected, "collisions" will have a value of 2 and the brick must be deleted.