Canvas + Box2D

codelab instructions

Goal 1: create a canvas and draw a square onto it

```
cnv = document.getElementByID('canvas')
                                        .getContext('2d');
cnv.lineWidth = 3;
cnv.strokeStyle = #RRGGBB;
cnv.beginPath();
cnv.moveTo(x, y);
cnv.LineTo(x, y);
cnv.stroke();
```

Goal 2: draw a tile with a custom rotation angle

```
var tile = new Image();
tile.src = “img/tile_world.png”;
cnv.save();
cnv.translate(x, y);
cnv.rotate(0.1);  // radians!
cnv.drawImage(tile, xi, yi);
cnv.restore();
```

Goal 3: initialize the world and draw it

```
function setupWorld()
{
   createWorldWithGravity(); // Box2d helper
   tile = createBox(...); // Box2d helper
}
function drawWorldIn(world, canvas)
{
   canvas.clearRect(...);
   drawWorldWireframe(world, canvas); // Box2D helper
}
```

Goal 4: prepare 2 animation loops and launch them!

```
var world, canvas;  // + initialization of the world and the canvas
...
function runWorld ()
{
   world.Step (1/50, 1);
   setTimeout (runWorld, 1000/50);
}
function runAnimation ()
{
   draw (world, canvas);
   webkitRequestAnimationFrame (runAnimation);
}
```

Goal 5: add a ground and other objects

ground:

```
var fixed = true;
createBox(world, x_center, y_center, w, h, fixed);
...
```

box:

```
tile = createBox(world, x, y, w, h);
// to rotate the box in box2d (a in radians)
tile.setCenterPosition(tile.getCenterPosition(), a);
// to render as an image
tile.image = "img/tile_world.png";
...
```

ball:

```
createBall(world, x, y, r /*, fixed*/);
```

Goal 6: go crazy!

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