

DiceRoller



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142.58.215.240/dieRoller/
(Android Only)

JavaScript Libraries



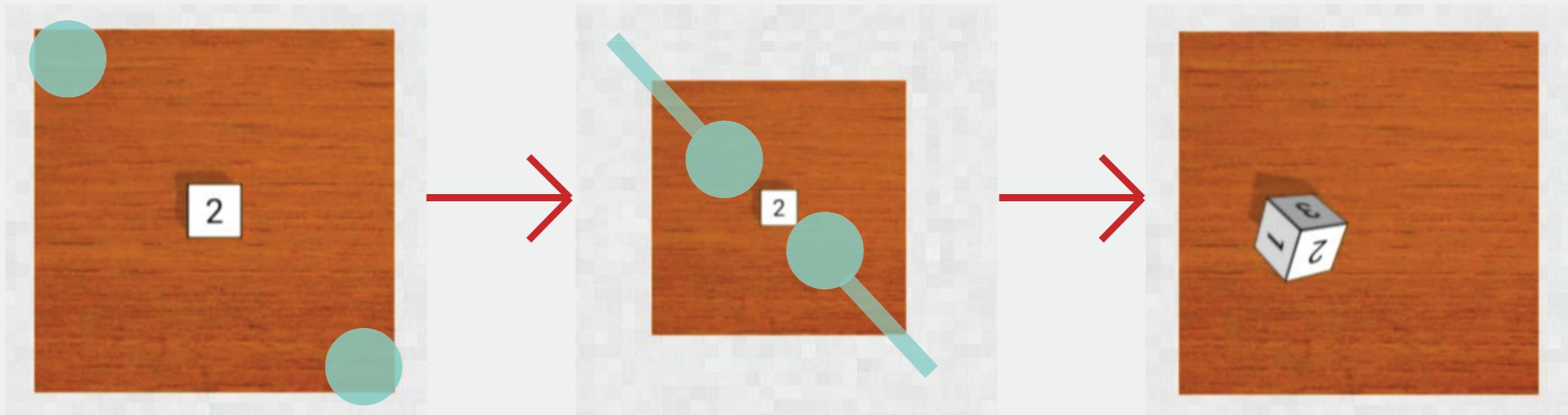
3D Effects - ThreeJS
Physics - PhysiJS, AmmoJS
Touch Controls - HammerJS
Updating Elements - jQuery

Interaction Inspiration



Implementation

Pinch Gesture



Implementation Cont.

Hammer Logic

```
27
28 mc.on("pinch rotate press pinchstart pinchend pandown", function(ev) {
29     var pinchScale = ev.scale;
30     var pinchReverse = ev.scale;
31     if(ev.type == "pinch" && pinchScale < 1){
32         var pinchReverse = 1-ev.scale;
33         camera.position.y = 700+pinchReverse*400;
34     }
35     if(ev.type == "pinchstart"){
36         onPinchStart(ev);
37     }
38     if(ev.type == "pinchend"){
39         onDocumentPinch(ev, pinchScale);
40         camera.position.y = 700;
41     }
42     if(ev.type == "pandown"){
43         controls.style.bottom = (-150)+"px";
44     }
45 });
46
```

Implementation Cont.

Accelerometer Logic

```
//device motion source: http://w3c.github.io/deviceorientation/spec-source-device-motion.html#event-device-motion
window.addEventListener("devicemotion", function(event) {
    // Process event.acceleration, event.accelerationIncludingGravity,
    // event.rotationRate and event.interval
    if ((lastPos-event.acceleration.y) > .5 && event.acceleration.y < -3){
        onPinchStart( event, .5 );
    }
    if ((lastPos-event.acceleration.y) < 0 && event.acceleration.y > 2){
        onDocumentPinch( event, .5 );
    }
    lastPos = event.accelerationIncludingGravity.y;
}, true);
```

Dice Physics Logic

Rolling the dice

- Start1-3 values are based on scale.
- Each multiplied by a random value to make it more random

```
//document.getElementById('total').textContent = '?';
for (i = 0; i < d6Array.length; i++){
    plusOrMinus = Math.random() < 0.5 ? -1 : 1
    randomVal = (1+(Math.random()*2))*plusOrMinus;
    testRotation = new THREE.Vector3((start.value*rotationMultiplier)*randomVal,
                                    (start2.value*rotationMultiplier)*randomVal,
                                    (start3.value*rotationMultiplier)*randomVal);
    d6Array[i].setAngularVelocity(testRotation);
}
```

User Feedback

Camera Position - Scales based on the pinch.

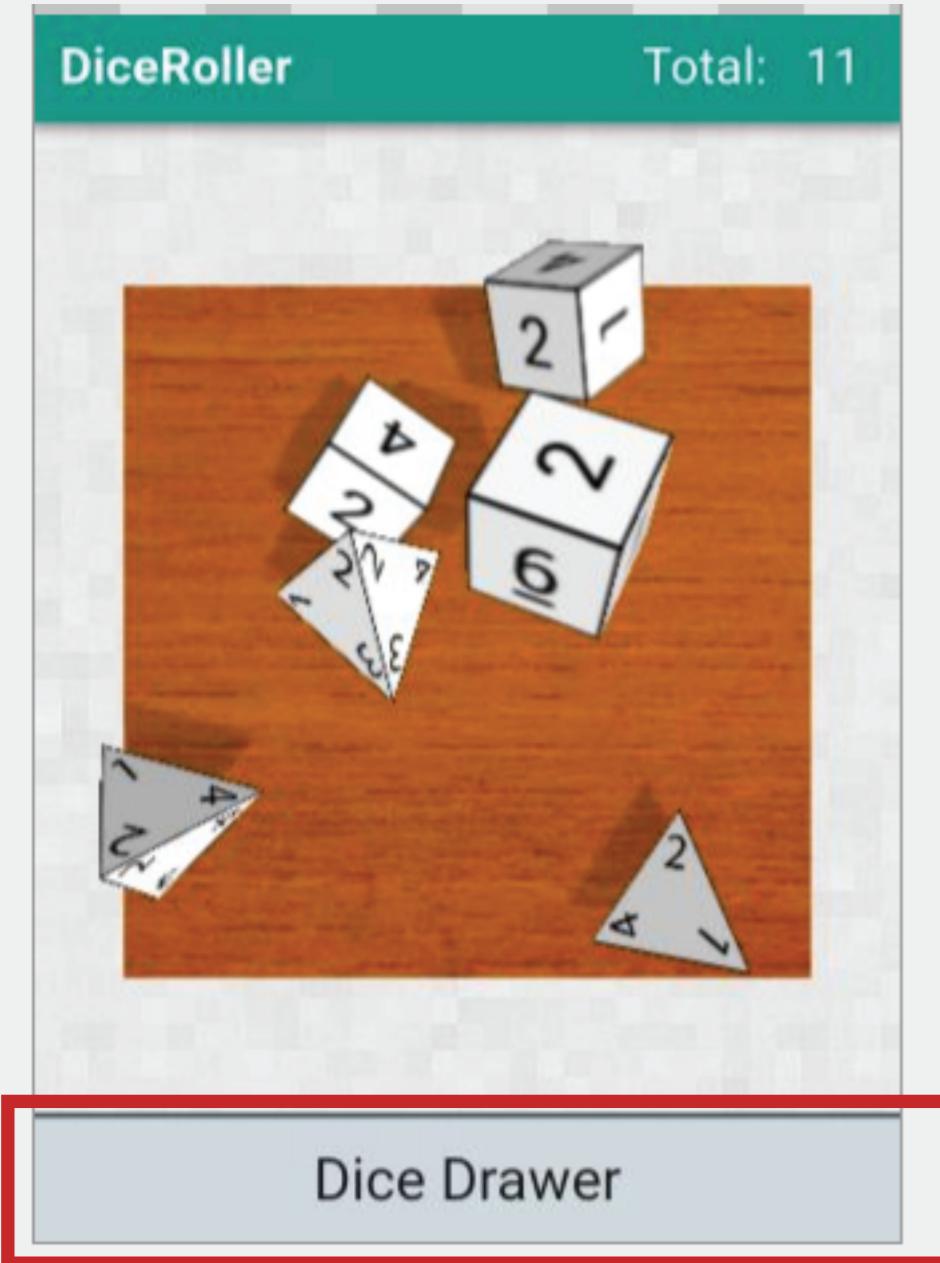
Sound - Plays on pinch start / end.

- Volume of the end pop is also scaled based on the pinch.

```
//play the sound, and adjust the volume based on the scale of the pinch
document.getElementById('pop-up').volume = 1-scale;
document.getElementById('pop-up').play();
```

- Couldn't preload audio on mobile (disabled for data-usage)
- Audio lags a bit when first loaded, works fine after.

More Troubles



Dice Drawer Pan-up/down

- Pan-up sometimes conflicted with pinch.
- Touch Events seemed buggy between threeJS and Angular

Accelerometer

- Not fine tuned, could use some logic to prevent events from firing too often.
- Would like to have added an option to toggle which mode (pinch / shake).

Final Thoughts

Shoulda-coulda-woulda

- Settings panel to toggle roll type, audio, and force multiplier.

Interactions

- Pinch works really well, creates a fun way to interact with the dice.
- Shake not as practical, could use some calibration and fine tuning.

Questions / Comments?