Wild Rabbit Chase – Click the wild rabbit with your pointer to score points. The rabbit runs faster and faster and the chase begins.

The rabbit is represented as a square for now. It will be a rabbit in future updates.

HTML5

```
<!DOCTYPE html>
<html>
<head>
<title>Wild Rabbit Chase</title>
<script type="text/javascript" src="script.js"></script>
</head>
<body>

<canvas id="viewport" width="640" height="480"></canvas>

</body>
</html>
```

Script.js

```
window.onload = function() {
//get canvas and context
    var canvas = document.getElementById("viewport");
    var context = canvas.getContext("2d");

    //timing fps
    var lastframe = 0;
    var fpstime = 0;
    var framecount = 0;
    var fps = 0;

//the level defines the area in which the rabbit can run around
    var level = {x:1,y:65,width:canvas.width-20,height:canvas.height - 20};

//wild rabbit
    var square = {x:0,y:0,width:0,height:0,xdir:0,ydir:0,speed:0};

//score
    var score = 0;
```

```
//-------------------------------------------------------------------------


    function init(){
        //add mouse events
        canvas.addEventListener("mousemove",onMouseMove);
        canvas.addEventListener("mousedown",onMouseDown);
        canvas.addEventListener("mouseup",onMouseUp);
        canvas.addEventListener("mouseout",onMouseOut);

    //initialize the running space
        square.width = 100;
        square.height = 100;
        square.x = level.x + (level.width  - square.width)/2;
        square.y = level.y + (level.height - square.height)/2;
        square.xdir = 1;
        square.ydir = 1;
        square.speed = 200;

    //initialize score
        score = 0;

    //enter main loop
        main(0);

    }//end function
//-------------------------------------------------------------------------

    //main loop
    function main(tframe){
        //request animation frames
        window.requestAnimationFrame(main);

        //update and render the game
        update(tframe);
        render();
    }//end function
//-------------------------------------------------------------------------
```

```
//update the game state
    function update(tframe){
        var dt = (tframe - lastframe)/1000;
        lastframe = tframe;
        updateFps(dt);

    //move the square, time-based
    square.x += dt * square.speed * square.xdir;
    square.y += dt * square.speed * square.ydir;

    //handle left and right collisions with the level
    if(square.x <= level.x){
        //left edge
        square.xdir = 1;
        square.x = level.x;
    } else if (square.x + square.width >= level.x + level.width){
        //right edge
        square.xdir = -1;
        square.x = level.x + level.width - square.width;
    }//end if


    //handle top and bottom collisions with the level
    if(square.y <= level.y){
        //top edge
        square.ydir = 1;
        square.y = level.y;
    } else if (square.y + square.height >= level.y + level.height){
        //bottom edge
        square.ydir = -1;
        square.y = level.y + level.height - square.height;
    }
    }//end function
//---------------------------------------------------------------------
    function updateFps(dt){
        if(fpstime > 0.25){
            //calculate fps
            fps = Math.round(framecount/fpstime);
```

```
            //reset time and framecount
            fpstime = 0;
            framecount = 0;
        }//end if

        fpstime += dt;
        framecount++;
    }//end function

//-------------------------------------------------------------------------
    //render the game
    function render(){
        drawFrame();

        //draw the rabbit
        context.fillStyle = "#ff0000";
        context.fillRect(square.x,square.y,square.width,square.height);


        //draw score inside rabbit
        context.fillStyle = "#ffffff";
        context.font = "30px Arial";
        var textdim = context.measureText(score);
        context.fillText(score,square.x + (square.width-textdim.width)/2,square.y + 65);
    }//end function
//-------------------------------------------------------------------------
    function drawFrame(){
        //draw bkg and border
        context.fillStyle = "#d0d0d0";
        context.fillRect(0,0,canvas.width,canvas.height);
        context.fillStyle = "#e8eaec";
        context.fillRect(1,1,canvas.width-20,canvas.height-20);

        //draw header
        context.fillStyle = "#0055ff";
        context.fillRect(0,0,canvas.width,65);

        //draw title
```

```
        context.fillStyle = "#ffffff";
        context.font = "24px Ariel";
        context.fillText("Wild Rabbit Chase-Catch the rabbit with your pointer",10,30);

        //display fps
        context.fillStyle = "#ffffff";
        context.font = "12px Ariel";
        context.fillText("Fps: " + fps, 13,50);
    }//end function
//-------------------------------------------------------
//mouse event handlers
    function onMouseMove(e){}

    function onMouseDown(e){
        //mouse position
        var pos = getMousePos(canvas,e);

        //check if player catches the rabbit
        if(pos.x >= square.x && pos.x < square.x + square.width &&
           pos.y >= square.y && pos.y < square.y + square.height){
            //if pos of mouse pointer inside target score one point
            score += 1;

            //increase the speed of the wild rabbit
            square.speed *= 1.1;

            //give the wild rabbit a random position within the game board
            square.x = Math.floor(Math.random()*(level.x + level.width - square.width));
            square.y = Math.floor(Math.random()*(level.y + level.height - square.height));

            //give the square a random direction
            square.xdir = Math.floor(Math.random() * 2) * 2 - 1;
            square.ydir = Math.floor(Math.random() * 2) * 2 - 1;

        }//end if
    }//end function
//-------------------------------------------------------------------------------------------
```

```
    function onMouseUp(e){}

    function onMouseOut(e){}

//---------------------------------------------------------
//get mouse position
    function getMousePos(canvas,e){
        var rect = canvas.getBoundingClientRect();
        return{
            x:Math.round((e.clientX - rect.left)/(rect.right - rect.left)*canvas.width),
            y:Math.round((e.clientY - rect.top )/(rect.bottom - rect.top)*canvas.height)
        };
    }//end function
//---------------------------------------------------------
 //call init to begin the game
    init();


//---------------------------------------------------------
};//end windowload function
```

GAMEBOARD

Contains a rapidly bouncing object in red. The current player score is displayed in white in the window of the object. Each time the rapidly moving object is clicked with the mouse a point is scored and the object moves even faster making it more difficult to catch.