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/*

The Game Project 4

Midterm

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*/


var gameCha_x;
var gameCha_y;
var floorP_y;

var isL;
var isR;
var isF;
var isP;

var cany;
var isF_cany;

var collectable;

var trees_x;
var clouds;
var mountains;
var cameraPosX;




function setup()
{
    createCanvas(1024, 576);
    floorP_y = height * 3/4;
    gameCha_x = width/2;
    gameCha_y = floorP_y;

    isL = false;
    isR = false;
    isF = false;
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        isP = false;

        isF_cany = false;
        //start
        cany = { x_pos: 200, width: 100 };

        collectable = {x_pos: 140, y_pos: floorP_y - 50, size: 50, isFound:false};

        //initialise underground variables
        trees_x = [100, 150, 180];
        clouds = {x_pos:[200, 400, 700], y_pos:[100, 80, 50],
                  width:[145, 120, 100], height:[45, 30, 20]};
        mountains = {x_pos:[620, 400, 150], height:[250, 200, 130],
                     width:[100, 80, 130]};

        cameraPosX = 0;

}

function draw()
{
        //modify camera's position
        cameraPosX = gameCha_x - width / 2;

        //do not allow second jump when the character is Plummeting
        if (gameCha_y <= 285){
                isP = false;
        }

        //do not allow move when the player has fallen in the cany
        if (isF_cany == true){
                isL = false;
                isR = false;
        }
        //end
        //////////DRAWING CODE//////////

        background(100,155,255);

        noStroke();
        fill(0,155,0);
        rect(0, floorP_y, width, height - floorP_y); //draw some green ground

        //start
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    //save state
    push();
    translate(-cameraPosX, 0);

    //draw the cany
    noStroke();
    fill(20,20,10);
    rect(cany.x_pos, floorP_y, cany.width, 144);

    //draw trees
    noStroke();
    fill(150,100,100);
    for(i in trees_x.length){
        rect(trees_x[i], treePos_y + 58, 40, 92);
    }

    //draw clouds
    fill(240);
    for(var i = 0; i < clouds.x_pos.length; i++) {
        ellipse(clouds.x_pos[i], clouds.y_pos[i],
            clouds.width[i], clouds.height[i]);
        ellipse(clouds.x_pos[i] - 15, clouds.y_pos[i],
            clouds.width[i] / 2, 4 * clouds.height[i] / 3);
        ellipse(clouds.x_pos[i] + 15,clouds.y_pos[i],
            clouds.width[i] / 2, 4 * clouds.height[i] / 3);
    }

    //draw mountains
    fill(100,100,0);
    for(var i = 0; i < mountains.x_pos.length; i++){
        triangle(mountains.x_pos[i], floorP_y - mountains.height[i],
            mountains.x_pos[i] - mountains.width[i] / 2, floorP_y,
            mountains.x_pos[i] + mountains.width[i] / 2, floorP_y
        );
        triangle(mountains.x_pos[i] - mountains.width[i] / 4, floorP_y - mountains.height[i]
* 0.75,
            mountains.x_pos[i] - 3 * mountains.width[i] / 4, floorP_y,
            mountains.x_pos[i] + mountains.width[i] / 4, floorP_y);
        triangle(mountains.x_pos[i] + mountains.width[i] / 4, floorP_y - mountains.height[i]
* 0.75,
            mountains.x_pos[i] + 3 * mountains.width[i] / 20, floorP_y,
            mountains.x_pos[i] + 3 * mountains.width[i] / 4, floorP_y);
    }
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    //if the character on the cany,fall into
    if(isF_cany){
        gameCha_y += 10;
    }

    //decide the isF variable
    if(gameCha_y < floorP_y){
        isF = true;
    }

    //change the 'isFound' variable if the collectable is found
    if(dist(gameCha_x, gameCha_y, collectable.x_pos, collectable.y_pos + 50) <
collectable.size ){
        collectable.isFound = true;
    }

    //draw the collectable
    if(!collectable.isFound){
        noStroke();
        fill(255,215,0);
        rect(collectable.x_pos, collectable.y_pos + collectable.size / 4,
            collectable.size / 2, collectable.size / 2);
        rect(collectable.x_pos - collectable.size / 4, collectable.y_pos + collectable.size / 2,
        collectable.size, collectable.size / 2)
    }



    //the game character
    if(isL && isF)
    {
        // add your jumping-left code
        fill(100,0,200);//head
        ellipse(gameCha_x - 11, gameCha_y - 60, 24, 24);

        fill(200,0,0);//body
        rect(gameCha_x - 20, gameCha_y - 48, 18, 20);

        fill(0);//right foot
        rect(gameCha_x - 4, gameCha_y - 28, 10, 10);

        rect(gameCha_x - 22, gameCha_y - 28, 10, 10);//left foot

        rect(gameCha_x - 2, gameCha_y - 40, 10, 3);//arm
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}
else if(isR && isF)
{
	// add your jumping-right code
	fill(100,0,200);//head
	ellipse(gameCha_x + 11, gameCha_y - 60, 24, 24);

	fill(200,0,0);//body
	rect(gameCha_x + 2, gameCha_y - 48, 18, 20);

	fill(0);//right foot
	rect(gameCha_x + 12, gameCha_y - 28, 10, 10);

	rect(gameCha_x - 6, gameCha_y - 28, 10, 10);//left foot

	rect(gameCha_x - 8, gameCha_y - 43, 10, 3);
}
else if(isL)
{
	// add your walking left code
	fill(100,0,200);//head
	ellipse(gameCha_x - 11, gameCha_y - 50, 24, 24);

	fill(200,0,0);//body
	rect(gameCha_x - 20, gameCha_y - 38, 18, 30);

	fill(0);//right foot
	rect(gameCha_x - 4, gameCha_y - 8, 10, 10);

	rect(gameCha_x - 22, gameCha_y - 8, 10, 10);//left foot

}
else if(isR)
{
	// add your walking right code
	fill(100,0,200);//head
	ellipse(gameCha_x + 11, gameCha_y - 50, 24, 24);

	fill(200,0,0);//body
	rect(gameCha_x + 2, gameCha_y - 38, 18, 30);

	fill(0);//right foot
	rect(gameCha_x + 12, gameCha_y - 8, 10, 10);
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        rect(gameCha_x - 6, gameCha_y - 8, 10, 10);//left foot

}
else if(isF || isP)
{
        // add your jumping facing forwards code
        fill(100,0,200);//head
        ellipse(gameCha_x, gameCha_y - 60, 24, 24);

        fill(200,0,0);//body
        rect(gameCha_x - 9, gameCha_y - 48, 18, 20);

        fill(0);//right foot
        rect(gameCha_x + 4, gameCha_y - 28, 10, 10);

        rect(gameCha_x - 14, gameCha_y - 28, 10, 10);//left foot

        rect(gameCha_x + 9, gameCha_y - 40, 10, 3);//right arm
        rect(gameCha_x - 19, gameCha_y - 40, 10, 3);//left arm
}
else
{
        // add your standing front facing code
        fill(100,0,200);//head
        ellipse(gameCha_x, gameCha_y - 50, 24, 24);

        fill(200,0,0);//body
        rect(gameCha_x - 9, gameCha_y - 38, 18, 30);

        fill(0);//right foot
        rect(gameCha_x + 4, gameCha_y - 8, 10, 10);

        rect(gameCha_x - 14, gameCha_y - 8, 10, 10);//left foot

}

//////////INTERACTION CODE/////////
//Put conditional statements to move the game character below here
if(isL){
        gameCha_x -= 5;
}

if(isR){
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            gameCha_x += 5;
        }

        if(isP){
            gameCha_y -= 25;
            if(gameCha_y < 280){
                gameCha_y = 280;
            }
        }

        if(isF){
            gameCha_y += 5;
            if(gameCha_y >= floorP_y){
                gameCha_y = floorP_y;
                isF = false;
            }

        }

        if(gameCha_x < cany.x_pos + cany.width - 10
            && gameCha_x > cany.x_pos + 10
            && gameCha_y == floorP_y){
                isF_cany = true;
            }


        //restore state
        pop();
}



function keyPressed()
{
        // if statements to control the animation of the character when
        // keys are pressed.

        if(!isF_cany){
            if(key == 'a'){
                isL = true;
            }

            if(key == 'd'){
                isR = true;
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            }

            if(key == 'w'){
                if(isP){
                    isF = true;
                }
                if(!isF){
                    isP = true;
                }
            }
        }

}
function keyReleased()
{
        // if statements to control the animation of the character when
        // keys are released.

        if(key == 'a'){
            isL = false;
        }

        if(key == 'd'){
            isR = false;
        }

        if(key == 'w'){
            isP = false;

        }


}

//end
```