

```
/*The game project part 4 - sidescrolling
*/
```

```
var gameChar_x;
var gameChar_y;
var floorPos_y;
```

```
var isLeft;
var isRight;
var isPlummeting;
var isFalling;
```

```
var collectable;
var trees_x;
var treePos_y;
var clouds;
var canyon;
```

```
var cameraPosX;
```

```
function setup() {
  createCanvas(1024, 576);
  floorPos_y = (height * 3) / 4;
  gameChar_x = width / 2;
  gameChar_y = floorPos_y;
```

```
  isLeft = false;
  isRight = false;
  isFalling = false;
  isPlummeting = false;
```

```
  collectable = {
    x_pos: 50,
    y_pos: floorPos_y - 30,
    size: 50,
    isFound: false,
  };
};
```

```
canyon = { x_pos: 100, width: 100 };
```

```
trees_x = [300, 500, 900, 1150];
treePos_y = height / 2;
```

```
clouds = [
  { x_pos: 100, y_pos: 100, width: 50 },
  { x_pos: 300, y_pos: 120, width: 70 },
  { x_pos: 600, y_pos: 150, width: 60 },
];
```

```
mountains = [
  { x_pos: -400, y_pos: 100 },
  { x_pos: 500, y_pos: 100 },
  { x_pos: 1000, y_pos: 100 },
];
```

```

    cameraPosX = 0;
}

function draw() {
    // Update camera position
    cameraPosX = gameChar_x - width / 2;

    ////////////DRAWING CODE//////////

    background(100, 155, 255); //fill the sky blue

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

    push();
    translate(-cameraPosX, 0);

    // Draw Clouds
    for (var i = 0; i < clouds.length; i++) {
        fill(255, 255, 255);
        ellipse(
            clouds[i].x_pos,
            clouds[i].y_pos - 50,
            clouds[i].width + 30,
            clouds[i].width + 30
        );
        ellipse(
            clouds[i].x_pos - 40,
            clouds[i].y_pos - 50,
            clouds[i].width + 10,
            clouds[i].width + 10
        );
        ellipse(
            clouds[i].x_pos + 40,
            clouds[i].y_pos - 50,
            clouds[i].width + 10,
            clouds[i].width + 10
        );
    }

    // Draw Trees
    for (var i = 0; i < trees_x.length; i++) {
        fill(120, 100, 40);
        rect(trees_x[i], treePos_y, 60, 150);

        fill(0, 155, 0);
        triangle(
            trees_x[i] - 50,
            treePos_y + 50,
            trees_x[i] + 30,
            treePos_y - 50,

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        trees_x[i] + 110,
        treePos_y + 50
    );
    triangle(
        trees_x[i] - 50,
        treePos_y,
        trees_x[i] + 30,
        treePos_y - 100,
        trees_x[i] + 110,
        treePos_y
    );
}

// Draw the canyon

fill(230, 170, 20);
rect(canyon.x_pos, floorPos_y, canyon.width, height - floorPos_y);

//    // Mountain Loop

for (var i = 0; i < mountains.length; i++) {
    fill(0, 155, 0);
    triangle(
        mountains[i].x_pos + 400,
        mountains[i].y_pos + 340,
        mountains[i].x_pos + 300,
        mountains[i].y_pos + 132,
        mountains[i].x_pos + 140,
        mountains[i].y_pos + 340
    );

    triangle(
        mountains[i].x_pos + 200,
        mountains[i].y_pos + 340,
        mountains[i].x_pos + 150,
        mountains[i].y_pos + 250,
        mountains[i].x_pos + 100,
        mountains[i].y_pos + 340
    );
}

// Draw the collectable
if (!collectable.isFound) {
    fill(237, 194, 66);
    ellipse(
        collectable.x_pos,
        collectable.y_pos,
        collectable.size,
        collectable.size
    );
    fill(225, 160, 52);
    ellipse(
        collectable.x_pos,
        collectable.y_pos,

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        collectable.size - 10,
        collectable.size - 10
    );
    fill(255, 255, 255);
    textSize(20);
    text("C", collectable.x_pos - 5, collectable.y_pos + 5);
}

pop();

// Draw the game character
if (isLeft && isFalling) {
    // add your jumping-left code
} else if (isRight && isFalling) {
    // add your jumping-right code
} else if (isLeft) {
    // add your walking left code
    drawGameCharLeft();
} else if (isRight) {
    // add your walking right code
    drawGameCharRight();
} else if (isFalling || isPlummeting) {
    // add your jumping facing forwards code
    drawGameCharJumping();
} else {
    // add your standing front facing code
    drawGameCharStanding();
}

// Interaction code
if (isLeft) {
    gameChar_x -= 5;
}

if (isRight) {
    gameChar_x += 5;
}

if (gameChar_y < floorPos_y) {
    gameChar_y += 5;
    isFalling = true;
} else {
    isFalling = false;
}

// Check if character falls into the canyon

if (gameChar_x <= 377 && gameChar_x >= 322 && gameChar_y >=
floorPos_y) {
    // isPlummeting = true;
    console.log("in");
}

if (isPlummeting) {

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    gameChar_y += 10;
}

// Check if collectable is found
if (
    dist(gameChar_x, gameChar_y, collectable.x_pos,
collectable.y_pos) < 265
) {
    collectable.isFound = true;
}
}

function drawGameCharLeft() {
    // The head
    fill(200, 150, 150);
    ellipse(gameChar_x, gameChar_y - 50, 25);

    // The body
    fill(255, 0, 0);
    rect(gameChar_x - 9, gameChar_y - 38, 18, 30);

    // The Legs
    fill(0);
    rect(gameChar_x - 5, gameChar_y - 7, 10, 10);

    // The arms
    fill(200, 150, 150);
    rect(gameChar_x - 12, gameChar_y - 30, 10, 10);
}

function drawGameCharRight() {
    // The head
    fill(200, 150, 150);
    ellipse(gameChar_x, gameChar_y - 50, 25);

    // The body
    fill(255, 0, 0);
    rect(gameChar_x - 9, gameChar_y - 38, 18, 30);

    // The Legs
    fill(0);
    rect(gameChar_x - 5, gameChar_y - 7, 10, 10);

    // The arms
    fill(200, 150, 150);
    rect(gameChar_x + 4, gameChar_y - 30, 10, 10);
}

function drawGameCharJumping() {
    // The head
    fill(200, 150, 150);
    ellipse(gameChar_x, gameChar_y - 50, 35);

    // The body

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fill(255, 0, 0);
rect(gameChar_x - 13, gameChar_y - 35, 26, 30);

// The Legs
fill(0);
rect(gameChar_x - 15, gameChar_y - 5, 10, 10);
rect(gameChar_x + 5, gameChar_y - 5, 10, 10);

// The arms
fill(200, 150, 150);
rect(gameChar_x + 12, gameChar_y - 30, 10, 10);
rect(gameChar_x - 22, gameChar_y - 30, 10, 10);
}

function drawGameCharStanding() {
  // The head
  fill(200, 150, 150);
  ellipse(gameChar_x, gameChar_y - 50, 35);

  // The body
  fill(255, 0, 0);
  rect(gameChar_x - 13, gameChar_y - 35, 26, 30);

  // The Legs
  fill(0);
  rect(gameChar_x - 15, gameChar_y - 5, 10, 10);
  rect(gameChar_x + 5, gameChar_y - 5, 10, 10);
}

function keyPressed() {
  if (!isPlummeting) {
    if (keyCode == 37) {
      console.log("canyounX " + canyon.x_pos);
      console.log("canyoun width " + canyon.width);
      console.log("gameChar_x " + gameChar_x);
      console.log("gameChar_y " + gameChar_y);
      console.log("floorPos_y " + floorPos_y);

      console.log(`isPlummeting: ${isPlummeting}`);

      isLeft = true;
    } else if (keyCode == 39) {
      console.log("canyounX " + canyon.x_pos);
      console.log("canyoun width " + canyon.width);
      console.log("gameChar_x " + gameChar_x);
      console.log("gameChar_y " + gameChar_y);
      console.log("floorPos_y " + floorPos_y);

      isRight = true;
      console.log(`isPlummeting: ${isPlummeting}`);
    }
    // Prevent the character from double jumping
    else if (keyCode == 87 || keyCode == 38 || keyCode == 32) {
      if (!isFalling && !isPlummeting) {

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```
        gameChar_y -= 100;
    }
}
}
```

```
function keyReleased() {
    if (keyCode == 37) {
        isLeft = false;
    } else if (keyCode == 39) {
        // console.log("Right Arrow");
        isRight = false;
    }
}
```