Week 10: Assignment 10: P2 Physics

Due Nov 1 at 11:59pm **Points** 30 **Questions** 4
Available Oct 24 at 12am - Dec 14 at 11:59pm about 2 months **Time Limit** None

Instructions

Description

For this assignment, you may create an original game of your choosing, or extend examples found in the Phaser Examples at **http://phaser.io/examples (http://phaser.io/examples)**. You will use the Phaser JavaScript library to explore some of the possibilities of working with P2 physics to simulate the physical world. Many of the concepts are covered in the assigned reading from specific sections of Chapter 6 in *An Introduction to HTML5 Game Development with Phaser.js.* The assignment challenges you to integrate your own custom JavaScript code and external asset files.

Requirements

In this assignment, you will need to start a new game project. That game should take user input via keyboard or pointer (mouse). Your revised game must utilize at least four of the available P2 physics body properties (such as gravity, interia, velocity, and mass) on some of the game's sprites. Apply at least one custom P2 body shape to one or more sprites.

1. Use as many of the Phaser P2 physics properties for bodies and contact materials to introduce physical world simulation into your gameplay. A complete list of properties for the Phaser P2 physics Body class can be found here: **https://photonstorm.github.io/phaser-ce/Phaser.Physics.P2.Body.html (https://photonstorm.github.io/phaser-ce/Phaser.Physics.P2.Body.html)**. The properties for ContactMaterial class include: *friction, restitution, stiffness, relaxation, frictionStiffness, frictioRelaxation, and surfaceVelocity.*
2. Set the dimensions of your game world to any dimensions you wish.
3. Validate the JavaScript in your work and provide a screenshot: **http://esprima.org/demo/validate.html (http://esprima.org/demo/validate.html)**

Purpose

Begin working with advanced P2 physics system to simulate the forces of the physical world.

Tools

- Cloud9 IDE code editor and file manager
- Chrome browser with Chrome developer tools
- Phaser JavaScript library found at **http://phaser.io/ (http://phaser.io/)**

- PhysicsEditor from Code + Web found at https://www.codeandweb.com/physicseditor (https://www.codeandweb.com/physicseditor)
- JavaScript code validator found at http://esprima.org/demo/validate.html (http://esprima.org/demo/validate.html)
- OpenGameArt asset repository found at https://opengameart.org/ (https://opengameart.org/)

Submission Directions

1. If you have not already done so, share your Cloud9 workspace with the instructor's account, ***srjcewilde.*** For instructions on sharing a workspace, see https://docs.c9.io/docs/share-a-workspace (https://docs.c9.io/docs/share-a-workspace) .
2. Create a new folder inside of your Cloud9 workspace.
3. Name your folder "module10".
4. Complete all JavaScript coding needed to meet assignment requirements.
5. Make a screenshot of the validation confirmation screen. Upload the screenshot to question 10.1.
6. Preview your HTML file containing your JavaScript in Cloud9 using the running application, and copy the URL where your file can be viewed on the Internet. Enter the preview URL for your page for question 10.2.
7. Identify the P2 body properties you used in your code in your response to question 10.3.
8. Copy the contents of your custom JavaScript code and paste into your response to question 10.4.

This quiz was locked Dec 14 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	4 minutes	30 out of 30

Score for this quiz: **30** out of 30
Submitted Nov 5 at 7:29pm
This attempt took 4 minutes.

Question 1 — 10 / 10 pts

Upload the screenshot of the Esprima JavaScript Validator validation of your JavaScript code.

Ensure that no errors remain in the final validated code for full credit.

code_validation.png
(https://canvas.santarosa.edu/files/1750721/download)

Question 2

10 / 10 pts

Enter the Preview URL for the HTML file containing your JavaScript for this assignment in your Cloud9 workspace.

For full credit:

1. *Make sure you have shared your Cloud9 workspace with the instructor account srjcewilde.*
2. *Ensure your code accomplishes the requirements of the assignment, without errors.*

Your Answer:

https://cs74-42-srjc-fall-2018-joshbarnard.c9users.io/module10/Thirsty_Cowboy/thirsty_cowboy.html

Question 3

2 / 2 pts

Identify the P2 body properties you used in your code.

Your Answer:

```
cowboy.body.damping = 0.5;
cowboy.body.inertia = 5;
cowboy.body.mass = 5;
```

Question 4

8 / 8 pts

Copy the contents of your custom JavaScript code and paste into your response to this question.

Your Answer:

```
var game = new Phaser.Game(
800, 600, Phaser.CANVAS, 'phaser-example',
{ preload: preload, create: create, update: update, render: render }
);

function preload() {

game.load.tilemap('level1', 'assets/json/level1.json', null,
Phaser.Tilemap.TILED_JSON );
game.load.image('tiles-1', 'assets/images/tiles-1.png' );

game.load.spritesheet( 'cowboy', 'assets/images/Cowboy-sprite.png', 30, 42
);

this.load.bitmapFont('SMW_Font', 'assets/font/Super_Mario_World.png',
'assets/font/Super_Mario_World.fnt');

game.load.image( 'beer', 'assets/images/beerBottle-verticle_sprite_small.png'
);
game.load.image( 'whiskey', 'assets/images/whiskey-sprite_small.png' );
game.load.image( 'background', 'assets/images/desert-background.png' );

game.load.audio( 'music', 'assets/audio/spagetti_western.ogg' );
game.load.audio( 'slurp', 'assets/audio/slurping.wav' );

}

var map, tileset, layer, bg;
var score_Amount, score_Display, score_Style;
var cowboy, cursors;
var score = 0.0;

function create() {

game.physics.startSystem(Phaser.Physics.ARCADE);

game.stage.backgroundColor = '#000000';

bg = game.add.tileSprite(0, 0, 800, 600, 'background');
bg.fixedToCamera = true;

map = game.add.tilemap('level1');
```

```
map.addTilesetImage('tiles-1');

map.setCollisionByExclusion( [ 13, 14, 15, 16, 17, 46, 47, 48, 49, 50, 51 ] );

layer = map.createLayer('Tile Layer 1');

layer.resizeWorld();

game.physics.arcade.gravity.y = 250;

// Players character and physics
cowboy = game.add.sprite( 42, 30, 'cowboy' );
game.physics.enable( cowboy, Phaser.Physics.ARCADE );

cowboy.body.allowDrag = true;
cowboy.body.drag = 10;
cowboy.body.gravity.y = 250;
cowboy.body.bounce.y = 0.2;
cowboy.body.collideWorldBounds = true;
cowboy.body.damping = 0.5;
cowboy.body.inertia = 5;
cowboy.body.mass = 5;

cowboy.animations.add( 'standing', [ 4 ], 10, true );
cowboy.animations.add( 'walking_left', [ 0, 1, 2, 3 ], 10, true );
cowboy.animations.add( 'walking_right', [ 5, 6, 7, 8 ], 10, true );
cowboy.animations.add( 'jump', [ 9 ], 10, true );

game.camera.follow(cowboy);

style_score = { font: "25px Arial", fill: "#000" };
score_Display = game.add.text( 50, 50, "BAC: ", style_score );
score_Display.fixedToCamera = true;
score_Amount = game.add.text( 125, 50, score.toFixed( 2 ), style_score );
score_Amount.fixedToCamera = true;

cursors = game.input.keyboard.createCursorKeys();

// Game Music
music = game.add.audio( 'music' );
music.play();

beers = game.add.group();
beers.enableBody = true;
whiskeys = game.add.group();
whiskeys.enableBody = true;
slurp = game.add.audio( 'slurp' );
```

```
// Create collectables across the map with slight variance each time.
var index = Math.floor( Math.random() * 10 ) + 5;
for( var i = 0; i < index; i++ )
{
var beer = beers.create( game.world.randomX, game.world.randomY, 'beer'
);
var whiskey = whiskeys.create( game.world.randomX, game.world.randomY,
'whiskey' );
}

}

function update() {

game.physics.arcade.collide( cowboy, layer );
game.physics.arcade.collide( beers, layer );
game.physics.arcade.collide( whiskeys, layer );

game.physics.arcade.overlap( cowboy, beers, collectBeer, null, this);
game.physics.arcade.overlap( cowboy, whiskeys, collectWhiskey, null, this);

cowboy.body.velocity.x = 0;

if( cursors.left.isDown )
{
cowboy.body.velocity.x = -150;
cowboy.animations.play( "walking_left" );
//cowboy.scale.x = -1;
}
else if( cursors.right.isDown )
{
cowboy.body.velocity.x = 150;
cowboy.animations.play( "walking_right" );
//cowboy.scale.x = 1;
}
else {
cowboy.animations.play( "standing" );
}

if ( cursors.up.isDown && cowboy.body.onFloor() )
{
cowboy.body.velocity.y = -350;
cowboy.animations.play( "jump" );

if( cowboy.body.onFloor() )
{
```

```
cowboy.animations.play( "jump" );
}
}

function collectBeer( cowboy_Object, beer_Object )
{
beer_Object.kill();
slurp.play();

score = score + 0.02;
score_Amount.setText( score.toFixed( 2 ) );
}

function collectWhiskey( cowboy_Object, whiskey_Object )
{
whiskey_Object.kill();
slurp.play();

score = score + 0.05;
score_Amount.setText( score.toFixed( 2 ) );
}

}

function render () {

}
```

Quiz Score: **30** out of 30