

CSCI E-23a

Introduction to Game Development

produced by CS50

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Assignment 6: “Angry Birds, The Tri-Shot Update”

Objectives

- Read and understand all of the Angry Birds source code from Lecture 6.
- Implement it such that when the player presses the space bar after they’ve launched an `Alien` (and it hasn’t hit anything yet), split the `Alien` into three `Aliens` that all behave just like the base `Alien` .

Getting Started

GitHub Classroom

In this course, we’ll use GitHub Classroom to distribute projects and collect submissions. To begin Assignment 5:

1. [Click here](#) to go to the GitHub Classroom page for starting the assignment.
2. Click the green “Accept this assignment” button. This will create a GitHub repository for your project. Recall that a git repository is just a location where your code will be stored and which can be used to keep track of changes you make to your code over time.

3. Click on the link that follows “Your assignment has been created here”, which will direct you to the GitHub repository page for your project. It may take a few seconds for GitHub to finish creating your repository.
4. In the upper-right corner of the repository page, click the “Fork” button, and then (if prompted) click on your username. This will create a fork of your project repository, a version of the repository that belongs to your GitHub account.
5. Now, you should be looking at a GitHub repository titled **username/assignment6-username**, where **username** is your GitHub username. This will be the repository to which you will push all of your code while working on your assignment. When working on the assignment, do not directly push to the **games50/assignment6-username** repository: always push your code to your **username/assignment6-username** repository.

Setup

Time to pull down the starting code for Angry Birds! First, on your main repository page (<https://github.com/username/assignment6-username>), click on the green “Clone or download” button. Copy the “Clone with HTTPS” link to your clipboard (if familiar with SSH, you can use that instead).

Then, in a terminal window (located in `/Applications/Utilities` on Mac or by typing `cmd` in the Windows task bar), move to the directory where you want to store your project on your computer (recall that the `cd` command can change your current directory), and run

```
git clone repository_url assignment6
```

where `repository_url` is the link you just copied from GitHub. You will be prompted for your GitHub username and password

Go ahead and run `cd assignment6` to enter your repository.

Three's Company

Welcome to your sixth assignment! This week, we took a look at the fundamentals of Box2D, one of the most widely-used 2D physics engines, and how it ties into LÖVE, with its built-in wrappers for it. This assignment will be a little simpler than some of the previous ones (indeed, there's only one core objective, albeit a reasonably complex one) but will still require knowledge of Box2D and the distro before we can dive in too quickly.

Your goal this assignment:

- *Implement it such that when the player presses the space bar after they've launched an `Alien` (and it hasn't hit anything yet), split the `Alien` into three `Aliens` that all behave just like the base `Alien`. The code for actually launching the `Alien` exists in `AlienLaunchMarker`, and we could naively implement most, if not all, of this code in the same class, since the `Alien` in question we want to split off is a field of this class. However, because we want to only allow splitting before we've hit anything, we need a flag that will get*

triggered whenever this `Alien` collides with anything else, so we'll likely want the logic for this in the `Level` itself here, since that is where we pass in the collision callbacks via `World:setCallbacks()`. The center `Alien` doesn't really need to be modified for the splitting process; really, all we need to do is spawn two new `Alien`s at the right angle and velocity so that it *appears* we've turned the single `Alien` into three, one above and one below. For this, you'll need to take linear velocity into consideration. Additionally, be aware that the `Alien` we want to launch has the `userData` of the string "Player", as opposed to the `Alien` we want to kill, which has just the `userData` of "Alien". Lastly, be sure that the launch marker doesn't reset until *all* of the `Alien`s we fling have slowed to nearly being still, not just the one `Alien` we normally check. In all, you should have all of the pieces at this point you need in order to make this happen; best of luck!

How to Submit

Step 1 of 1

1. Go to the GitHub page for your `username/assignment6-username` repository (note: this is different from the `games50/assignment6-username` repository).
2. On the right side of the screen, click the Pull request button.
3. Make sure that the "base fork" is `games50/assignment6-username`, and the "head fork" is `username/assignment6-username`.
4. Click "Create pull request".
5. On the next page, click the "Create pull request" button again.

Congratulations! You've completed Assignment 6.