Project Journal

## Wednesday December 7:

* Abhi - I tried using the [wiki on the Orthographic Camera](https://github.com/libgdx/libgdx/wiki/Orthographic-camera) to display the same ratio of “world units” when the window is resized in the “scrollingCamera” scratch It does not seem to work however, because in the wiki it renders as Sprite.draw(batch), while in your’s/our’s it renders as batch.draw(Sprite). So, I got rid of world units (commented it out).
* Matt - I made a hit detection scratch without gravity using bounding rectangles

## Thursday December 8:

* Matt - I have been editing my scratch for hit detection to work with gravity and needed to make a class Sprite2 that extends Sprite to get it to slightly work. Now it either likes moving side to side on platforms or jumping but never both.
  + Later update - after many hours of messing around with the program everything works and you can do single, double, or however many jumps by changing one number
  + Update part 2 - new glitch found with jumping underneath the box and hitting it teleports you upwards
* Abhi - Using [Games from Scratch](http://www.gamefromscratch.com/post/2014/12/09/LibGDX-Tutorial-Part-17-Viewports.aspx) and the [Camera doc](https://libgdx.badlogicgames.com/nightlies/docs/api/com/badlogic/gdx/graphics/Camera.html), I found that there is a function to translate world-coordinates to screen coordinates, and vice versa. We can use this to make the camera translate only when the sprHero is half past the screen

## Friday December 9:

* Matt - Hit detection completely works
* Abhi - Using the camera.project(Vector3) method, I was able to translate in world coordinates of the hero into on-screen coordinates (where on the window he was). Based on that, we’ve setup an if statement to translate the camera by fVx only if Mario is half past the window.
* We are planning on using Tiled to create a map for our game instead of Overlap2D

## Monday December 12:

* Abhi - I worked on and created a scratch called “TiledMap” over the weekend using [GamesFromScratch](http://www.gamefromscratch.com/post/2014/05/01/LibGDX-Tutorial-11-Tiled-Maps-Part-2-Adding-a-character-sprite.aspx) and a [stackoverflow question](http://stackoverflow.com/questions/20063281/libgdx-collision-detection-with-tiledmap). I have the tmx file load, and also check for collisions against the rectangles in the collision layer. Right now, it checks against all objects in the collision layer. Ideally, later, it should check only those near to the sprite
* Matt -

## Tuesday December 13:

* Abhi - I updated the “TiledMap” scratch. It now loads polygon and polyline objects, but I’m having some trouble with checking collisions against them. I have, however, am able to load another object layer I’ve named “SpawnPoint”, and load points where the player and enemies spawn from by getting some properties of the object.
* We’ve decided to use Box2D instead. We’ve found some sources and are going to start looking into it; won’t need those detection scratches anymore :/

## Wednesday December 14:

* Abhi - I created a scratch for creating a basic Box2D world and understanding how it all works. I’ve also updated the TiledMap scratch to now use Box2D, and it WORKS!! Much easier than manual hit detection. I added camera boundaries to the TiledMap so that the camera doesn’t translate off the map, and I moved the Camfunctions to a CameraStyleUtil class.
* Matt - Added lighting to Abhi’s scratch TiledMap using box2dlights. There is a point light that is static near the players spawn and a cone light that stays on top of the character as it moves. There are also several functions that can be used which are currently commented out inside of it.
* We made the first version of our game: Alpha Hydranoid

## Thursday December 15:

* We cleaned up and finished Alpha Hydranoid
* NOTE: there is a slight glitch in the rendering of box2d/tiled; at certain locations black vertical lines appear. Will need to look at later.
* We’ve realized that if we ever want to die when he hits a certain object/body, we will need to use collision filtering. We’ve been using [Connor Anderson’s videos](https://www.youtube.com/watch?v=_y1RvNWoRFU&list=PLD_bW3UTVsElsuvyKcYXHLnWb8bD0EQNI) on Box2D and Box2dLights, and there seems “decent enough” lessons for contact listeners and collision filtering

## Friday December 16:

* We added box2dlights into our game; made version 2.0 Apollonir

## Tuesday December 20:

* We made a scratch for contact listening in Box2D. It’s called “Box2DContactListening”... go figure…
* This will allow us to stop infinitely jumping, and also “die” when hitting certain types of objects.
* We started adding animations into release 2.1 Blade Tigrerra

## Wednesday December 21:

* We finished animations in release Blade Tigrerra
* We integrated contact listening into release Clayf, and finished it. It took a while to add a box2d body to the SpriteExtended file, but it worked out
* For some reason, netbeans loads the project fine. But IntelliJ no longer is able to parse the map??? Not sure what’s causing the error.

## Thursday December 22:

* We finished release 2.3 Dragonoid. We did this by creating a spikes class that extended TileObjectUtil. This way, when we check for contact listening, we can see if one of the fixtures are part of the Spikes class, so that we can “kill” the hero.

## Friday December 23:

* We started adding bullets to our game through an arraylist
* Abhi figured out the IntelliJ problem was caused by not setting the working directory to core/assets. It works now, so it’s useful to remember
* We started a scratch for “RemovableTiles”. In this scratch, we are trying to create a box2d body wherever the mouse is clicked, and once that body collides with a tile, the box, the tile, and the collision box over the tile gets removed

## Friday December 30:

* Abhi - Using sources, I have been able to remove the right tile when a box2d body hits it. I’ll work on removing the body at that location later

## Saturday January 7:

* Matt - I made a bullet class that extends Sprite to make bullets that are stored in an arrayList. These bullets move in whatever direction the hero is facing when they are shot. They are never removed. You can also shoot them as fast as you can hit the spacebar.

## Sunday January 8:

* I don’t even know how to do this anymore. The body that needs to be destroyed (box), somehow gets the coordinates of the “bullet” even though there is no such line. How it works right now is that in ContactListenerUtil, once hit, it sets a static TiledObjectUtil from RemovableTiles.java to the body that was hit. Theoretically, this should give the static variable the coordinates of the box that needs to be destroyed. Later, when the destroy function is called, it doesn’t actually destroy the body??

## Monday January 9:

* world.destroyBody(tou.body); doesn’t work at school ???? None of the grade 12’s know how to remove box2d bodies upon collision either. I can’t get the code I found online to work right. I’ll start fresh again.

## Tuesday January 10:

* Abhi
  + I made a scratch for a moving/falling platform. It works by using kinematic instead of dynamic bodies. When the hero hits the platform, it falls after a certain delay. Later, I might have to add: activating the falling of the platform when hit from on-top, and moving along with a sideways platform.
  + I started fresh for the bullets scratch. I got it to work by having two separate arraylists: one for active bullets, one for dead ones. Upon collision, bullets would be moved from the active to the dead arraylist. I will work on integrating this into OS-DualHydranoid (bullets).
* Matt - I started looking into the AI library. Guess who’s got great videos? That’s right. Conner Anderson.

## Wednesday January 11:

* The RemovableTile scratch is now solely for testing the concept of removing a tile based on where the mouse was clicked.The old version of this scratch is in Failed\_notWorking
* Made the bullets in DualHydranoid removable by integrating the scratch. Everything seems to work fine. We’re really glad it works; we were about to scrap the entire game
* Added a menu to Exedra, using the updated MenuG scratch.

## Thursday January 12:

* Matt - Made a scratch that has one box follow another one using the AI library
* Abhi - Integrated the removable tiles scratch into ver Fourtress. Had some difficulties integrating: turns out the position of the tiled body was never set, and this took a while to figure out. But now, it works if the destructible tile is a rectangle; I’m not sure how to set the position of a body if it is a polyline(will try to figure it out later)

## Friday January 13:

* We added falling platforms to release Frosch

## Sunday January 15:

* Added a reset function to falling platforms so that when the player dies and presses play again, the platforms are back where they should be.

## Monday January 16:

* Started adding sprites to falling platforms
* Tried looking into what “Arrivial” actually does in gdx-ai

## Tuesday January 17:

* Finished adding a sprite to falling platforms. Falling platforms spawn at the points indicated by the tiled map file, and fall when the user touches them after a certain amount of delay.
* The LibGDX AI library is overly complicated and will take more time to learn than we have left to make the game. Our game also does not require overly advanced AI. For these reasons we have decided to abandon the AI library and create our own basic AI.
  + <https://libgdx.badlogicgames.com/gdx-ai/docs/> javadocs for AI library
  + <https://github.com/libgdx/gdx-ai/tree/master/gdx-ai/src/com/badlogic/gdx> GitHub repository of the library

## Wednesday January 18:

* Matt - starting a fresh AI scratch that doesn’t use the gdx-ai library
* Abhi - starting a scratch for unlockable weapons - shooting different types of bullets based on number pressed.

## Thursday January 19:

* Matt - forget making an AI scratch. I’m just implementing it right away

## Friday January 20:

* Added a sprExtendedAI, that just moves back and forth between a range

## Saturday January 21:

* The ai can shoot bullets now

## Sunday January 22:

* We added that when the enemy sees the hero, it stops moving back and forth
* Added an arraylist for enemies
* We added sound effects, and background music
* Added some comments throughout code for possible clarity

## Monday January 23:

* Completed documents for submission