**Status Report 5**

**Game Name:** PEETY THE BEEFY

**Developers:** Benny Lam & Thomas Nuhn (aka The GOD Squad)

List of programs. Clearly describe the problem that you are solving. Please put the date that you worked on it:

* Peety the Beefy / PTB 5.0
  + We changed a lot since release 4.0 and have made major progress on the direction of the game. We now have something that resembles a game after we were able to move past our architectural flaws of our other releases. We fixed up how our sprite animation was created and used, and now it utilizes the class instead of calling it in the main screen. On top of that we combined all of our entity creation (enemy creation, player creation, bullet creation) + our sprite creation into one class, so now it creates the sprites along with the player. We’ve also added a lot of gameplay and artwork to the game including a control screen, GUI, level 1 and 2 tmx files + background and bullet textures.
* Contact Filtering
  + We made a contact filtering scratch that allows the bullets to pass through the player every time they shoot. This scratch also uses contact listener. We needed this for shooting because we didn’t want the bullets to collide with the player (else the shooting wouldn’t be accurate)

Major Challenges/setbacks( reference specific code please):

* Had a problem with destroying Box2D bodies. Everytime we destroyed a certain amount of bodies, we got an error. (fixed)
  + Changed where we destroyed the bodies. We only destroy them in ScrLvl1 and not in EntityCreation
    - (In ScrLvl1.java and in EntityCreation.java)
* Combining the Sprites and Box2D creation into “Entity Creation” required a lot of problem solving and adding a lot of variables to pass into the creation but we figured it out (In EntityCreation.java)

Source any web site/book that helped you with that concept:

* Water gun rotation towards mouse
  + <https://gamedev.stackexchange.com/questions/88317/sprite-rotation-libgdx?utm_medium=organic&utm_source=google_rich_qa&utm_campaign=google_rich_qa>
* Conner anderson “collision filtering”:
  + <https://www.youtube.com/watch?v=IIZ7XI6L7IA>
* Conner anderson “Averaging between targets”:
  + <https://www.youtube.com/watch?v=hCiqh6cG7gE>

Describe the code and the lesson that you learned from it:

* Sprite Animation Fix: We combined everything that we create (enemies, bullets, player) into one class along with our sprite creation class. So we now have one file handling all creation
* Camera Interpolation / changes: Instead of having the camera fixed on the center of the level, we now have the camera average between the center of the level and the player. Now you can notice a bit of subtle movement between the player and the stage. We also had it clamp to a certain boundary or else you could see outside the map. With that we learned about the MathUtils.clamp function. We also made the camera global so that we can change the zoom between the main menu screen and the ScrLvl1 screen.
* Contact Filtering: Contact filtering required us to set the category bits and mask bits for the bodies. The category bits is what the body identifies as and the mask bits are what the bodies can come in contact with. The only downside to this method is that we have to tell it every single type of bodies it can collide with including the tiledmap. Also we can’t use contact listener for all the objects that don’t collide with each other, so we have to use the old way of hit detection.
* Bullets / Enemy death: To destroy bodies safely from an arraylist, the body will have to be destroyed first with world.destorybody(whatever body you want to be destroyed) and it would have to then be removed from the arraylist.
* Parallax Background / GUI: We learned about creating a “fixed batch” and the benefits of doing this. The problem was that the player had to go to the bottom corner of the screen to see the back button, because it was being drawn on the regular batch. We created a fixed batch and DID NOT project it to the camera, so that way it would stay on the screen in a fixed position. With this we also drew the GUI onto the fixed batch and it would look like a GUI. We also drew the sky background to this fixed batch to create a bit of separation between the level background and the sky, giving a 3D parallax effect.