– List of known problems with your prototype

   • Specify

      – How to trigger failure (input/action)

      – Location of fault

      – possible remedy

– None of the listed problems will hurt you in acceptance test

   • Problems not listed but encountered in acceptance test will

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Marine Mod: Problem Report

Elephant Seal Problems

   The problems with this entity correspond to its failing of test 6, 7, and 8 of the test document...

      Test 6

         How to trigger failure

            Spawn entity in a beach biome and then enter F3 + B to see its hitbox. The hitbox is too small.

         Location of failure

            /Minecraft/src/main/java/com/makersfactory/marinemod/entity/EntityElephantSeal.java

         Possible remedy and information about cause of the failure

            Many attempts were made to correct the hitbox but it is not easy to do within the Forge framework. This is problematic as the hitbox is used in other portions of the framework (particularly this is an issue in the Forge navigation code as it prevents the navigator from detecting the entity reaching a waypoint in the path). The framework assumes length is equal to width but this is not true. Not sure of a possible remedy. I attempted offsetting and other modification of the hitbox many times. Possibly there are more methods in the Framework that can

be overwritten so the hitbox can be more directly modified (just extend the HitBox class?).

Test 7
How to trigger failure
Spawn the entity in a beach biome and it should start to swim. Eventually it will get stuck.
Location of failure
/Minecraft/src/main/java/com/makersfactory/marinemod/ai/EntityAISwim.java
Possible remedy and information about cause of the failure
It gets stuck because the entity slowly sinks and doesn't seem to be able to swim upwards. A possible remedy is to look more into the Framework to understand how to stop the entity from sinking every game tick. Then to use this mechanism when the EntityAISwim AI is being used by the Elephant Seal.

Test 8
How to trigger failure
Spawn entity in beach biome in the water near the border of another biome (if possible). Observe the entity and it will sometimes get stuck before it makes it back to the beach biome.
Location of failure
/Minecraft/src/main/java/com/makersfactory/marinemod/ai/EntityAISwim.java
Possible remedy and information about cause of the failure
It gets stuck because the entity slowly sinks and doesn't seem to be able to swim upwards. So even though the entity is headed towards the proper location it gets stuck on a block it can't swim over. A possible remedy is to look more into the Framework to understand how to stop the entity from sinking every game tick. Then to use this mechanism when the EntityAISwim AI is being used by the Elephant Seal.

Garibaldi Fish Problems
Test 2
How to trigger failure
Spawn entity in a low water area, three blocks or less of water. Observe how the fish moves, it might hop above the water every now and then. Ideally the fish shouldn't rise above the water and probably won't, but it does have a tendency to do it every now and then.
Location of failure
minecraft.entity.ai.EntityAISwimming
minecraft.entity.passive.EntitySquid

Possible remedy

These swiming imports are good for squid, but the fish needs its own AI beyond the squid for proper swimming.

Test 6
How to trigger failure
Spawn entity and kill the entity with whatever you choose. Pick up the item that is dro

Gray Whale Problems
Test 1
How to trigger failure
Spawn entity and observe that it keeps executing 'Submerge' near the surface but it does not dive down. Ideally the entity should dive when it reaches the surface and surface when it reaches a certain depth.
Location of failure

/Minecraft/src/main/java/com/makersfactory/marinemod/ai/EntityAISubmerge.java
/Minecraft/src/main/java/com/makersfactory/marinemod/ai/EntityAISurfaceForAir.java
Possibly remedy
Need more time figuring out how different AI tasks interact in real time

Test 2
How to trigger failure
Spawn entity and observe that the pathfinding of the whale is off. It also swims in a diagonal direction. Based on research, Minecraft mobs will generally move diagonally.
Location of failure

/Minecraft/src/main/java/com/makersfactory/marinemod/ai/EntityAISubmerge.java
Possibly remedy
The weird pathfinding may be a result of the frequency of ticks that cause it to update its path too often, causing it to change directions too frequently.

Dolphin Problems
Test 2
How To Trigger Failure
Spawn entity and observe that it immediately dives and comes back up and stays up.
Location of Failure
/Minecraft/src/main/java/com/makersfactory/marinemod/ai/EntityAIDive.java
Possible Remedy
A lot of this has to do with the Hit box location, path finding, and timing. The hitbox is located below the entity as a perfect cube. It is not clear how to change this within the framework.

Test 3
How To Trigger Failure
Spawn entity and observe that it has no animations.
Location of Failure
/Minecraft/src/main/java/com/makersfactory/marinemod/ai/Dolphin.java
Possible Remedy
Add animations. Never got around to doing animations for the dolphin.

Test 3
How To Trigger Failure
Spawn multiple dolphins and observe that they don't travel in pods
Location of Failure
/Minecraft/src/main/java/com/makersfactory/marinemod/ai/Dolphin.java
Possible Remedy
Add AI support for traveling pods. Right now there is no AI support for traveling pods.

Starfish Problems
Test 3:
How To Trigger Failure:
Spawn entity manually or naturally and verify hitbox dimensions using F3 + B. Observe that the hitbox is much larger than the entity
Location Of Failure:
/Minecraft/src/main/java/com/makersfactory/marinemod/entity/EntityStarfish.java
Possible Remedy:
For some reason, the method set_Position does not seem to affect the hitbox. I've looked long and hard for an alternative, but this was the only one I could find.

Seagull Problems
Test 2
How to trigger failure
Spawn entity and observe that flight pattern tends upward too much.
Location of failure
/Minecraft/src/main/java/com/makersfactory/marinemod/entity/EntitySeagull.java
Possible remedy and information about cause of the failure
This error seems like it would be easily fixed by changing the constants which cause the entity to fly upward, however lowering these constants cause the Seagull to fly very low or even stay on the ground unrealistically. Also the onGround function seems to be conflicting with the updating the entity course. Simply put, the seagull take a very long time to land since the random upward tendency more or less forces the seagull to fly and not land. To remedy the issue, I

believe the next step would be to create a function which measures altitude and have the entity react accordingly.