

Image-Based Height Maps (*TAGE*)

...

```

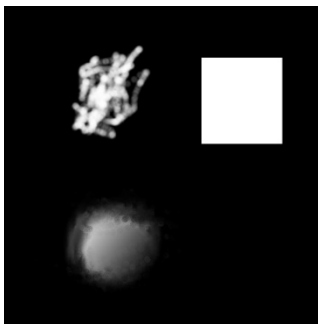
public class myGame extends VariableFrameRateGame
{
    ...
    private GameObject dolphin, terr;
    private ObjShape dolS, terrS;
    private TextureImage doltx, hills, grass;
    ...

    @Override
    public void loadShapes()
    {
        dolS = new ImportedModel("dolphinHighPoly.obj");
        terrS = new TerrainPlane(1000); // pixels per axis = 1000x1000
    }

    @Override
    public void loadTextures()
    {
        doltx = new TextureImage("Dolphin_HighPolyUV.png");
        hills = new TextureImage("hills.jpg");
        grass = new TextureImage("grass.jpg");
    }

    @Override
    public void buildObjects()
    {
        ...
        // build terrain object
        terr = new GameObject(GameObject.root(), terrS, grass);
        initialTranslation = (new Matrix4f()).translation(0f, 0f, 0f);
        terr.setLocalTranslation(initialTranslation);
        initialScale = (new Matrix4f()).scaling(20.0f, 1.0f, 20.0f);
        terr.setLocalScale(initialScale);
        terr.setHeightMap(hills);
    }
}

```

*hills.jpg:*

## Adjusting avatar position in Height Maps

...

```

@Override
public void update()
{
    ...
    // update altitude of dolphin based on height map
    Vector3f loc = dolphin.getWorldLocation();
    float height = terr.getHeight(loc.x(), loc.z());
    dolphin.setLocalLocation(new Vector3f(loc.x(), height, loc.z()));
    ...
}

```