

Sound – RAGE / JOAL

```

...
import ray.audio.*;
import com.jogamp.openal.ALFactory;

public class MyGame extends VariableFrameRateGame
{
    ...
    private Tessellation tessTest;
    private float movemt = 0.01f;

    IAudioManager audioMgr;
    Sound oceanSound, hereSound;

    // constructor, setupWindow, setupCamera, and main as before

    protected void setupScene(Engine eng, SceneManager sm)
        throws IOException
    {
        // make dolphin avatar
        ...

        // make robot and load animation
        ...

        // make waterfall object
        ...

        // set up lights
        ...

        // set up orbit camera
        ...

        // set up terrain
        tessTest = sm.createTessellation("tessTest", 7);
        tessTest.setSubdivisions(4f);
        SceneNode tessTestNode =
            sm.getRootSceneNode().createChildSceneNode("node_tessTest");
        tessTestNode.attachObject(tessTest);
        tessTestNode.scale(10, 3, 10);
        tessTest.setHeightMap(this.getEngine(), "smallMoonHeight.jpg");
        tessTest.setTexture(this.getEngine(), "smallMoonTexture.jpg");

        // tile the terrain
        tessTest.getTextureState().setWrapMode(
            WrapMode.REPEAT_MIRRORED);

        tessTest.setHeightMapTiling(4);
        tessTest.setTextureTiling(4);
        tessTest.setNormalMapTiling(4);

        initAudio(sm);
    }

    public void setEarParameters(SceneManager sm)
    {
        SceneNode dolphinNode = sm.getSceneNode("dolphinNode");
        Vector3 avDir = dolphinNode.getWorldForwardAxis();

        // note - should get the camera's forward direction
        // - avatar direction plus azimuth

        audioMgr.getEar().setLocation(dolphinNode.getWorldPosition());
        audioMgr.getEar().setOrientation(avDir, Vector3f.createFrom(0,1,0));
    }

```

```

protected void update(Engine engine)
{
    // update the inputmanager, controllers, AI, animation, etc.
    ...

    SceneManager sm = engine.getSceneManager();
    SceneNode robotN = sm.getSceneNode("robotNode");
    SceneNode earthN = sm.getSceneNode("earthNode");

    // move robot
    ...

    hereSound.setLocation(robotN.getWorldPosition());
    oceanSound.setLocation(earthN.getWorldPosition());
    setEarParameters(sm);
}

public void initAudio(SceneManager sm)
{
    AudioResource resource1, resource2;
    audioMgr = AudioManagerFactory.createAudioManager(
        "ray.audio.joal.JOALAudioManager");
    if (!audioMgr.initialize())
    {
        System.out.println("Audio Manager failed to initialize!");
        return;
    }
    resource1 = audioMgr.createAudioResource("here.wav",
        AudioResourceType.AUDIO_SAMPLE);
    resource2 = audioMgr.createAudioResource("ocean.wav",
        AudioResourceType.AUDIO_SAMPLE);
    hereSound = new Sound(resource1,
        SoundType.SOUND_EFFECT, 100, true);
    oceanSound = new Sound(resource2,
        SoundType.SOUND_EFFECT, 100, true);
    hereSound.initialize(audioMgr);
    oceanSound.initialize(audioMgr);
    hereSound.setMaxDistance(10.0f);
    hereSound.setMinDistance(0.5f);
    hereSound.setRollOff(5.0f);
    oceanSound.setMaxDistance(10.0f);
    oceanSound.setMinDistance(0.5f);
    oceanSound.setRollOff(5.0f);

    SceneNode robotN = sm.getSceneNode("robotNode");
    SceneNode earthN = sm.getSceneNode("earthNode");
    hereSound.setLocation(robotN.getWorldPosition());
    oceanSound.setLocation(earthN.getWorldPosition());
    setEarParameters(sm);

    hereSound.play();
    oceanSound.play();
}

```