JAVASCRIPT example using TAGE (based on ex.01a)

```
. . .
import javax.script.Invocable;
. . .
public class MyGame extends VariableFrameRateGame
{  . . .
   private File scriptFile1, scriptFile2, scriptFile3;
   private long fileLastModifiedTime = 0;
   ScriptEngine jsEngine;
   . . .
   @Override
   public void buildObjects()
   {  . . .
      // build dolphin at center
      dol = new GameObject(GameObject.root(), dolS, doltx);
      initialTranslation = (new Matrix4f()).translation(0,0,0);
      initialScale = (new Matrix4f()).scaling(2.0f);
      dol.setLocalTranslation(initialTranslation);
      dol.setLocalScale(initialScale);
   }

   @Override
   public void initializeLights()
   {  // initialize the scripting engine
      ScriptEngineManager factory = new ScriptEngineManager();
      jsEngine = factory.getEngineByName("js");

      // add the light specified in the script to the game world
      scriptFile2 = new File("assets/scripts/CreateLight.js");
      this.runScript(scriptFile2);
      (engine.getSceneGraph()).addLight((Light)jsEngine.get("light"));

      // set up the script that associates the light color with the space bar
      scriptFile3 = new File("assets/scripts/UpdateLightColor.js");
      this.runScript(scriptFile3);

      //  add global ambient light
      Light.setGlobalAmbient(0.5f, 0.5f, 0.5f);
   }

   @Override
   public void initializeGame()
   {  prevTime = System.currentTimeMillis();
      startTime = System.currentTimeMillis();

      // use spin speed setting from the script to initialize dolphin rotation
      scriptFile1 = new File("assets/scripts/InitParams.js");
      this.runScript(scriptFile1);
      rc = new RotationController(engine, new Vector3f(0,1,0),
                        ((Double)(jsEngine.get("spinSpeed"))).floatValue());
      rc.addTarget(dol);
      (engine.getSceneGraph()).addNodeController(rc);
      rc.enable();
   }

   @Override
   public void update()
   {  . . .
      // run script again to demonstrate dynamic modification
      long modTime = scriptFile1.lastModified();
      if (modTime > fileLastModifiedTime)
      {  fileLastModifiedTime = modTime;
         this.runScript(scriptFile1);
         ((RotationController)rc).setSpeed(((Double)
                              (jsEngine.get("spinSpeed"))).floatValue());
   } }
```

```
   private void runScript(File scriptFile)
   {  try
      {  FileReader fileReader = new FileReader(scriptFile);
         jsEngine.eval(fileReader);
         fileReader.close();
      }
      catch (FileNotFoundException e1)
      {  System.out.println(scriptFile + " not found " + e1); }
      catch (IOException e2)
      {  System.out.println("IO problem with " + scriptFile + e2); }
      catch (ScriptException e3)
      {  System.out.println("ScriptException in " + scriptFile + e3); }
      catch (NullPointerException e4)
      {  System.out.println ("Null ptr exception reading " + scriptFile + e4);
   } }

   @Override
   public void keyPressed(KeyEvent e)
   {  switch (e.getKeyCode())
      {  case KeyEvent.VK_SPACE:
         {  Invocable invocableEngine = (Invocable) jsEngine;

            //get the light to be updated
            Light lgt = engine.getLightManager().getLight(0);

            // invoke the script function
            try
            {  invocableEngine.invokeFunction("updateAmbientColor", lgt);
            }
            catch (ScriptException e1)
            {  System.out.println("ScriptException in " + scriptFile3 + e1); }
            catch (NoSuchMethodException e2) { }  // etc.
            catch (NullPointerException e3)  { }  // etc.
      } }
      super.keyPressed(e);
} }
```

"CreateLight.js" (javascript file)

```
var JavaPackages = new JavaImporter(
   Packages.tage.Light,
   Packages.org.joml.Vector3f
   );

// actually creates a world object - in this case a light
with (JavaPackages)
{  var light = new Light();
   light.setLocation(new Vector3f(5.0, 4.0, 2.0));
   var plight = sm.createLight("testLamp1", Light.Type.POINT);
   plight.setAmbient(new Color(.3, .3, .3));
   plight.setDiffuse(new Color(.7, .7, .7));
   plight.setSpecular(new Color(1.0, 1.0, 1.0));
   plight.setRange(5);
}
```

"UpdateLightColor.js" (javascript file)

```
var JavaPackages = new JavaImporter(Packages.tage.Light);
with (JavaPackages)
{  function updateAmbientColor(thisLight)
   {  thisLight.setAmbient(0.0, 0.0, 1.0);
   }
}
```

"InitParams.js" (javascript file)

```
var spinSpeed = .001;
```