

6.837 Intro to Computer Graphics, Fall 2003

Assignment 1: Ray Casting

Scene description file grammar

```
file ::= camera background group

camera ::= orthographicCamera

orthographicCamera ::= OrthographicCamera {
    center Vec3f
    direction Vec3f
    up Vec3f
    size float
}

background ::= Background {
    color Vec3f
}

group ::= Group {
    num_objects int
    (object3D | material object3D) ^ num_objects
}

object3D ::= group | sphere

sphere ::= Sphere {
    center Vec3f
    radius float
}

material ::= Material {
    diffuse_color Vec3f
}

Vec3f ::= float float float
```

How to read a grammar:

Start with the top level rule, in this case **file**. To expand a rule, substitute the appropriate definitions for each of the elements in bold. Some special notation:

| means "OR"

n means "exactly n elements"