

7M836 - Animation and Rendering

Exercise 3: Transformations

In this exercise

- we will learn how to create simple scenes. Background information in the on-line documentation:
- *3.1.4 Describing an Object*
- *3.1.5 Adding Texture to an Object*
- *3.2 Basic Shapes up to and including 3.2.3 Cylinder Object*
- *6.3 POV-Ray coordinate system up to and including 6.3.2 Transformation Order*

Open the files `ch3/chess.pov` and `ch3/pawn.inc`. You will see a board that contains checks, and each check is one unit square. You can think of each check as being 1 centimetre on a side, if you wish. Travelling left and right on the board corresponds to changes in the x-coordinate. Travelling forward and back corresponds to changes in z.

- Add another pawn to the scene. Give it a color **Green** and add a translate statement to position it one unit to the right and one unit back from the blue pawn. What is the translate statement you used? Render the scene.
- Add another pawn and colour it **Aquamarine**. Place it two squares to the left and two squares forward of the blue pawn. Scale it so that it is twice as tall as the blue pawn, but still occupies a single square on the board. What scale and translate statements did you use? Render.
- Create yet another pawn and colour it **Magenta**. Rotate it so it falls over to the right, and position it to the right and in front of the blue pawn. Why is the following transformation not correct?

```
rotate <0, 0, -90>  
translate <1, 0, -1>
```

Render. Can you explain what happened?

What will you have to do to the translate statement to cause the magenta pawn to appear on the board?

- Adapt your POV-ray file to obtain an image that looks like the following figure.

