Exercise 4.1 Render a cube on the screen and add a spot light, point light and ambient (parallel) light to the scene. The lighting.fx and lighhelper.fx files has been provided to you. Also the header file for Lighting has been given. Your application must toggle between the light sources.

For example, press 1 for ambient, 2 for spot, 3 for point

You must update the Vertex structure to add position, normal, diffuse and specular.

In lighting.cpp, you must set some of the shader variables as given below:

```
// Set per frame constants.

mfxEyePosVar->SetRawValue(&mEyePos, 0, sizeof(D3DXVECTOR3));

mfxLightVar->SetRawValue(&mLights[mLightType], 0, sizeof(Light));

mfxLightType->SetInt(mLightType);
```

Exercise 4.2: The shading method that has been provided to you is the Phong lighting reflection model. Find out what is the Blinn-Phong Lighting reflection and implement the shading using the Blinn-Phong model.

Exercise 4.3: Implement the Phong lighting reflection model through the vertex shader (Goraud Shading). Compare the result with what you got from Exercise 4.1.

Exercise 4.4: Toon shading, this is a cartoon styled lighting. Research more into what the toon shading is about. Next implement "toon" shading. Change the way specular lighting and diffuse lighting works to achieve the result.