

# Computer Graphics Assignment #2

## Lighting and shading

### Implementing Lighting and Shading

Part 2 of the second assignment will have you complete the renderer by adding lights and displaying a shaded model. For this part please create a markdown file with the name 'Assignment2Report/Assignment2Report\_part2.md', and do the following:

1. Implement the ability to add point lights to the scene and allow the user to change their position. Each light source should have three RGB components, for the ambient, diffuse and specular reflections, so 9 values in total. In addition, allow the user to specify a material for each model. Similarly to light, each material should have RGB values for ambient diffuse and specular reflections. Compute the lighting for the ambient light and show the result in the report. Specify the colors you chose and why you got the result that you got.
2. Compute the diffuse component with flat shading and show the result using the same scene.
3. For pairs only: Compute Gouraud shading and compare the result to the previous result.
4. Implement the function that computes the reflection vector used for specular lighting. Show the direction of the light from the center of each face and the direction of the reflected light as short lines (similar to how normal vectors were drawn in the first assignment).
5. Compute the specular light with Phong shading and show a result.
6. Demonstrate different models, lights and shadings and show the results in the report.
7. Bonus: implement texture mapping using nearest neighbour interpolation.