

The aim of this work is to extend the existing image-rendering program based on ray-tracing. As this existing program is used to teach computer graphics at the Faculty of Mathematics and Physics of the Charles University, expanding tools provide the way to a simpler understanding of the substance. This includes statistics, analytical maps and especially the ability to track the rendering ray directly in the 3D scene. The last mentioned extension is essential and most useful for understanding deeper ray-tracing principles.

In addition to facilitating the understanding of one of the main rendering techniques in computer graphics, these extensions will also help create homework for computer graphics subjects.