Mestrado em
Engenharia Informática

VI-RT structure

Visualização e Iluminação

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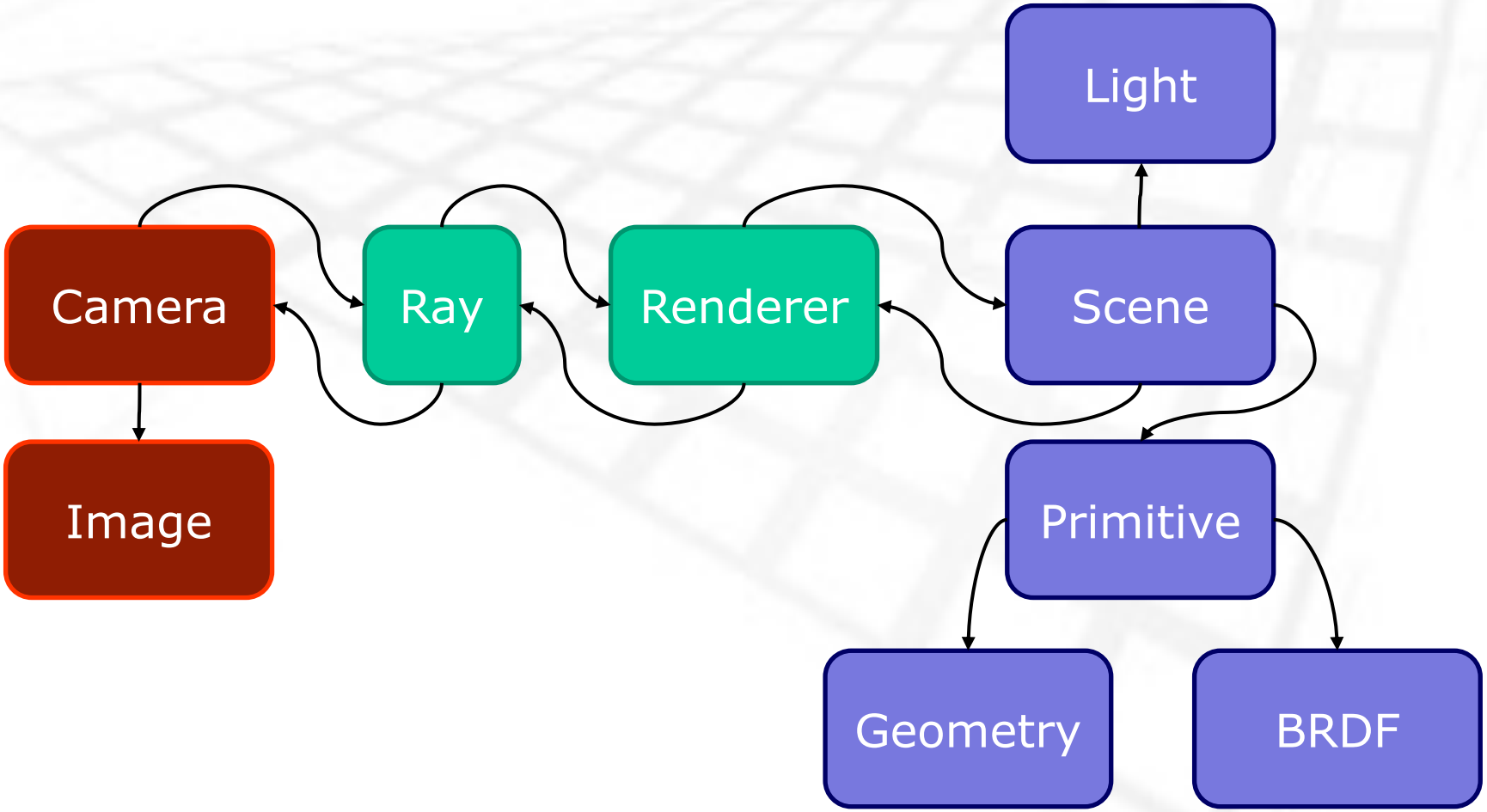
VI-RT

```
git clone https://github.com/luisps/VI-RT.git
```

Classes


Light
Camera
Ray
Renderer
Scene
Image
Primitive
Geometry
BRDF

Main Program (I)

```
int main(int argc, const char * argv[]) {
    Scene scene;
    Perspective *cam; // Camera
    ImagePPM *img;    // Image
    Shader *shd;
    bool success;

    success = scene.Load( <path to .obj file>);

    // add an ambient light to the scene
    AmbientLight ambient(RGB(0.9,0.9,0.9));
    scene.lights.push_back(&ambient);
    scene.numLights++;
    ...
```

Main Program (II)

```
    ...
    // Image resolution
    const int W= 640;
    const int H= 480;
    img = new ImagePPM(W,H);

    // Camera parameters
    const Point Eye ={0,0,0}, At={0,0,1};
    const Vector Up={0,1,0};
    const float fovW = 60.f;
    const float fovH = fovW * (float)H/(float)W;  // in degrees
    const float fovWrad = fovW*3.14f/180.f, fovHrad =
fovH*3.14f/180.f;    // to radians
    cam = new Perspective(Eye, At, Up, W, H, fovWrad, fovHrad);
    ...
```

Main Program (III)

```
    ...
    // create the shader
    shd = new AmbientShader(&scene, RGB (0.05, 0.05, 0.55));

    // declare the renderer
    StandardRenderer myRender (cam, &scene, img, shd);
    // render
    myRender.Render();

    // save the image
    img->Save("MyImage.ppm");

    std::cout << "That's all, folks!" << std::endl;
    return 0;
}
```