**C++**

#include <string>

#include <opencv2/opencv.hpp>

#include <opencv2/highgui.hpp>

#include <cassert>

int main(void)

{

// load image

std::string filename = "lena\_color\_512.png";

cv::Mat image\_orig = cv::imread(filename);

if (image\_orig.empty())

{

std::cout << "Cannot find or load image: " << filename << std::endl;

return -1;

}

cv::Mat image = image\_orig.clone();

// convert image to grayscale

if (image.channels() > 1)

cv::cvtColor(image\_orig, image, cv::COLOR\_RGB2GRAY);

// apply canny edge detector

cv::Mat edges;

cv::Canny(image, edges, 92, 128);

// visualize image

cv::imshow("image", image\_orig);

cv::imshow("edges", edges);

cv::waitKey(0);

cv::destroyAllWindows();

// save image

cv::imwrite("edges.png", edges);

return 0;

}