

Basic Image Representation

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```
1 #include <opencv2/highgui/highgui.hpp>
2
3 using namespace cv;
4
5 int main(int argc, char **argv)
6 {
7     Mat img = imread(argv[1], -1);
8
9     if(img.empty())
10         return -1;
11
12     namedWindow("First Image", cv::WINDOW_AUTOSIZE);
13     imshow("First Image", img);
14
15     waitKey(0);
16
17     destroyWindow("First Image");
18
19     return 0;
20 }
```

```

sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/experiment/opencv$ cd ..
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/experiment$ ls
algorithm  control_theory  dsp  mcu      random_process  water_rocket_physics
android    device_driver   lsp  opencv   statistics      zynq
char_set   doc             math opencv   stm32f4
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/experiment$ cd ..
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project$ ls
am5728_linux-4.9.69  dsp_proj_bak  LICENSE          mission_planner  real_test
cur_present          experiment    mcu_proj         past_present     test
dsp_proj             fpga_proj    member_profile   README.md        zynq-zybo_linux-4.0
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project$ mkdir ocv_proj
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project$ cd ocv_proj/
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ ls
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ vi first.cpp
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ ls
first.cpp  sample.jpg
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ history | grep pkg-config
1903  g++ test.cpp 'pkg-config opencv --cflags --libs'
1904  g++ test.cpp `pkg-config opencv --cflags --libs`
1911  g++ adf.cpp 'pkg-config opencv --cflags --libs'
1912  g++ adf.cpp `pkg-config opencv --cflags --libs`
1913  pkg-config --modversion opencv
1946  pkg-config --modversion opencv
1951  sudo apt-get install pkg-config
1991  pkg-config --modversion opencv
1992  pkg-config --libs --cflags opencv
2039  history | grep pkg-config
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ g++ test.cpp `pkg-config openc
v --cflags --libs`
g++: error: test.cpp: No such file or directory
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ g++ first.cpp `pkg-config open
cv --cflags --libs`
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ █

```

```
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ ls  
a.out  first.cpp  sample.jpg  
sdr@sdr-Samsung-DeskTop-System:~/lecture/Project/ocv_proj$ ./a.out sample.jpg
```

