Explanation

Title: OpenCV C++ Program to blur an image.
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The following is the explanation to the **C++** code to blur an Image in C++ using the tool **OpenCV**.
Things to know:
(1) The code will only compile in Linux environment.
(2) To run in windows, please use the executable file.
(3) Compile command: g++ -w article.cpp -o article `pkg-config --libs opencv`
(4) Run command: ./article
(5) The image bat.jpg has to be in the same directory as the code.
Before you run the code, please make sure that you have OpenCV installed on your // system.
Code area:

(1)
#include <opencv2/core/core.hpp>
core – Module to define basic data structures, example: Dense Multi-Dimensional array Mat and basic functions too.

(2)
#include <opencv2/highgui/highgui.hpp>
highgui - an interface to video and image capturing.

(3)
#include <opencv2/imgproc/imgproc.hpp>
imgproc - An image processing module that for linear and non-linear image filtering, geometrical image transformations, color space conversion and so on.

(4)
#include <stdio.h>
#include <iostream>
The header files for performing input and output.

(5)
using namespace cv;
Namespace where all the C++ OpenCV functionality resides.

(6)
using namespace std;
For input output operations.

(7)
int main()   // Main function
{

(8)
Mat image = imread("bat.jpg", CV_LOAD_IMAGE_UNCHANGED);
Read the image data in the file "bat.jpg" and store it in 'image'.
Mat object is a basic image container.

Imread:
first argument denotes the image to be loaded.
second argument specifies the image format as follows:
CV_LOAD_IMAGE_UNCHANGED (<0) loads the image as it is.
CV_LOAD_IMAGE_GRAYSCALE (0) loads the image in Gray scale.
CV_LOAD_IMAGE_COLOR (>0) loads the image in the BGR format.
If the second argument is not there, it is implied CV_LOAD_IMAGE_COLOR.

(9)
```
if(! image.data )        // Check for no data
{
     cout <<  "Could not open or find the image.\n";
     return -1;         // unsuccessful
}
```


(10)
```
blur(image,image,Size(10,10));                  // Function to blur the image
first argument: input source
second argument: output destination
third argument: blurring kernel size
```


(11)
```
namedWindow( "bat", CV_WINDOW_AUTOSIZE );     // Create a window
first argument: name of the window.
second argument: flag- types:
WINDOW_NORMAL : The user can resize the window.
WINDOW_AUTOSIZE : The window size is automatically adjusted to fitvthe displayed
image() ), and you cannot change the window size manually.
WINDOW_OPENGL : The window will be created with OpenGL support.
```


(12)
```
imshow( "bat", image );       // Displays an image in the specified  window.
first argument: name of the window.
second argument: image to be shown(Mat object).
```


(13)
```
waitKey(0);      // Wait infinite time for a key press.
```


(14)
```
return 0;         // Return from the main function.
}
```


End of explanation.