In [1]:

```
# Python Program to blur image

# Importing cv2 module
import cv2

# bat.jpg is the batman image.
img = cv2.imread('parrots.jpg')

# make sure that you have saved it in the same folder
# You can change the kernel size as you want
blurImg = cv2.blur(img,(10,10))
cv2.imshow('blurred image',blurImg)

cv2.waitKey(0)
cv2.destroyAllWindows()

# image blurring technique called Averaging
```

In [ ]:

```
# There are some other options available as well - Gaussian Blurring, Median Blurring, Bi
lateral Filtering.
```

In [2]:

```
# importing opencv CV2 module
import cv2

# bat.jpg is the batman image.
img = cv2.imread('parrots.jpg')

# make sure that you have saved it in the same folder
# Averaging
# You can change the kernel size as you want
avging = cv2.blur(img,(10,10))

cv2.imshow('Averaging',avging)
cv2.waitKey(0)

# Gaussian Blurring
# Again, you can change the kernel size
gausBlur = cv2.GaussianBlur(img, (5,5),0)
cv2.imshow('Gaussian Blurring', gausBlur)
cv2.waitKey(0)

# Median blurring
medBlur = cv2.medianBlur(img,5)
cv2.imshow('Media Blurring', medBlur)
cv2.waitKey(0)

# Bilateral Filtering
bilFilter = cv2.bilateralFilter(img,9,75,75)
cv2.imshow('Bilateral Filtering', bilFilter)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

In [3]:

```
# Motion Blur of an image (optional)

# loading library
import cv2
import numpy as np

img = cv2.imread('parrots.jpg')
```

```
# Specify the kernel size.
# The greater the size, the more the motion.
kernel_size = 30

# Create the vertical kernel.
kernel_v = np.zeros((kernel_size, kernel_size))

# Create a copy of the same for creating the horizontal kernel.
kernel_h = np.copy(kernel_v)

# Fill the middle row with ones.
kernel_v[:, int((kernel_size - 1)/2)] = np.ones(kernel_size)
kernel_h[int((kernel_size - 1)/2), :] = np.ones(kernel_size)

# Normalize.
kernel_v /= kernel_size
kernel_h /= kernel_size

# Apply the vertical kernel.
vertical_mb = cv2.filter2D(img, -1, kernel_v)

# Apply the horizontal kernel.
horizonal_mb = cv2.filter2D(img, -1, kernel_h)

# Save the outputs.
cv2.imwrite('parrots_vertical.jpg', vertical_mb)
cv2.imwrite('parrots_horizontal.jpg', horizonal_mb)

# Display the image
cv2.imshow('parrots_vertical', vertical_mb)
cv2.imshow('parrots_horizontal', horizonal_mb)
```

In [ ]:

```
# cv2.blur() method


# Python program to explain cv2.blur() method

# importing cv2
import cv2

# path
path = r''

# Reading an image in default mode
image = cv2.imread(path)

# Window name in which image is displayed
window_name = 'Image'

# ksize
ksize = (10, 10)

# Using cv2.blur() method
image = cv2.blur(image, ksize)

# Displaying the image
cv2.imshow(window_name, image)
```