In [ ]:
```
import cv2
import numpy as np
import matplotlib.pyplot as plt
```

In [ ]:
```
def difference_of_gaussians(image, sigma_large, sigma_small, kernel_size1, kernel_s
    # Apply Gaussian blur with large sigma
    gaussian_large = cv2.GaussianBlur(image, kernel_size1, sigma_large)

    # Apply Gaussian blur with small sigma
    gaussian_small = cv2.GaussianBlur(image, kernel_size2, sigma_small)

    # Calculate the difference of the two blurred images
    dog = gaussian_large - gaussian_small

    return dog
```

In [ ]:
```
image = cv2.imread('..\image.jpg',0)
plt.imshow(image, cmap='gray')
plt.show()
```

In [ ]:
```
dog_image = difference_of_gaussians(image, 5, 3, (3, 3), (3, 3))
dog_image2 = difference_of_gaussians(image, 5, 3, (5, 5), (5, 5))
dog_image3 = difference_of_gaussians(image, 5, 3, (7, 7), (7, 7))
dog_image4 = difference_of_gaussians(image, 10, 3, (5, 5), (5, 5))
dog_image5 = difference_of_gaussians(image, 5, 4, (5, 5), (5, 5))
dog_image6 = difference_of_gaussians(image, 20, 10, (5, 5), (5, 5))



fig, ax = plt.subplots(2, 4, figsize=(10, 5))
```

```
ax[0][0].imshow(image, cmap='gray')
ax[0][0].set_title('Original Image')

ax[0][1].imshow(dog_image, cmap='gray')
ax[0][1].set_title('DoG')

ax[0][2].imshow(dog_image2, cmap='gray')
ax[0][2].set_title('DoG 2')

ax[0][3].imshow(dog_image3, cmap='gray')
ax[0][3].set_title('DoG 3')

ax[1][0].imshow(dog_image4, cmap='gray')
ax[1][0].set_title('DoG 4')

ax[1][1].imshow(dog_image5, cmap='gray')
ax[1][1].set_title('DoG 5')

ax[1][2].imshow(dog_image6, cmap='gray')
ax[1][2].set_title('DoG 6')

fig.delaxes(ax[1][3])


plt.tight_layout()
plt.show()
```