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Aim: To study and implement image edge detection techniques using python for processing image data

Edge Detection deals with the contours of an image usually denoted as an outline of a specific object in an image.

The goal of an edge detector is to enhance the connected gradients in an image, which may take the form of an edge, contour, line, or some connected set of edges. Many edge detectors are simply implemented as kernel operations, or convolutions

In [1]:

```
import numpy as np
import pandas as pd
import cv2
import matplotlib.pyplot as plt
```

In [2]:

```
image = cv2.imread(r"C:\Users\saura\Desktop\Ongoing\Notes\01.LAB_ass\Computer_vision_basics
image2 = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
plt.figure(figsize=(10,10))
plt.imshow(image2)
```

Out[2]:

```
<matplotlib.image.AxesImage at 0x153de63d940>
```

In [3]:

```
# hsv = cv2.cvtColor(image2, cv2.COLOR_RGB2HSV)

# lower_red = np.array([30,  150, 50])
# upper_red = np.array([255, 255, 180])

# mask = cv2.inRange(hsv, lower_red, upper_red)
# result = cv2.bitwise_and(hsv,hsv, mask=mask)

# plt.figure(figsize= (20,20))
# plt.imshow(hsv)
```

In [4]:

```
edges = cv2.Canny(image2, 100 , 200)

fig, ax = plt.subplots(1,2, figsize =(20,20))

ax[0].imshow(image)
ax[0].set_title('Original Image')
ax[1].imshow(edges)
ax[1].set_title('Edge detected image')
```

Out[4]:

```
Text(0.5, 1.0, 'Edge detected image')
```