```
import cv2
import numpy as np
import matplotlib.pyplot as plt
from google.colab import files

# Upload the image file
uploaded = files.upload()

# Load the uploaded image
image = cv2.imread(next(iter(uploaded)))

# Convert the image from BGR (OpenCV default) to RGB (for displaying with Matplotlib)
image_rgb = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)

# Function to apply Mean Filter
def mean_filter(image, kernel_size=3):
    """
    Apply mean filter to the given image.

    Parameters:
    - image: Input image (numpy array).
    - kernel_size: The size of the kernel (odd integer, e.g., 3, 5, 7).

    Returns:
    - filtered_image: Image after applying the mean filter.
    """
    # Create the mean kernel (uniform filter)
    kernel = np.ones((kernel_size, kernel_size), np.float32) / (kernel_size * kernel_size)

    # Apply filter to the image using OpenCV filter2D function
    filtered_image = cv2.filter2D(image, -1, kernel)

    return filtered_image

# Apply the mean filter
filtered_image = mean_filter(image, kernel_size=3)

# Convert the filtered image to RGB for display
filtered_image_rgb = cv2.cvtColor(filtered_image, cv2.COLOR_BGR2RGB)

# Display the original and filtered images
plt.figure(figsize=(10, 5))

plt.subplot(1, 2, 1)
plt.imshow(image_rgb)
plt.title("Original Image")
plt.axis('off')

plt.subplot(1, 2, 2)
plt.imshow(filtered_image_rgb)
plt.title("Filtered Image (Mean Filter)")
plt.axis('off')

plt.show()
```

Choose Files suhas2004.jpg

- **suhas2004.jpg**(image/jpeg) - 11449 bytes, last modified: 2/12/2025 - 100% done

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Saving suhas2004.jpg to suhas2004.jpg
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Original Image

Filtered Image (Mean Filter)