

23) Implement the Top hat technique as a Morphological operation to dilate the foreground regions based on Open CV.

CODE:

```
import cv2
import numpy as np
```

```
# Step 1: Load the image in grayscale
```

```
image = cv2.imread(r"C:\Users\harik\Downloads\CV LAB\mountaingrey.jpeg",
cv2.IMREAD_GRAYSCALE)
```

```
# Step 2: Optional - Apply threshold to get a binary image (only if needed)
```

```
# _, binary = cv2.threshold(image, 127, 255, cv2.THRESH_BINARY)
```

```
# Step 3: Define the structuring element (kernel)
```

```
kernel = cv2.getStructuringElement(cv2.MORPH_RECT, (5, 5))
```

```
# Step 4: Apply the Top Hat operation
```

```
tophat = cv2.morphologyEx(image, cv2.MORPH_TOPHAT, kernel)
```

```
# Step 5: Display the results
```

```
cv2.imshow("Original", image)
```

```
cv2.imshow("Top Hat", tophat)
```

```
cv2.waitKey(0)
```

```
cv2.destroyAllWindows()
```

OUTPUT:

