**1. Perform basic Image Handling and processing operations on the image. • Read an image in python and Convert an Image to Grayscale**

**AIM:** To Perform Basic Operations to Read Image and Convert to Grayscale using Python .

**Program :**

```
import cv2
import numpy as np
kernel = np.ones((5,5),np.uint8)
print(kernel)
path ="C:\drive\OneDrive\Pictures\pass photo.jpg"
img =cv2.imread(path)
imgGray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
cv2.imshow("GrayScale",imgGray)
cv2.waitKey(0)
```

INPUT :

OUTPUT:

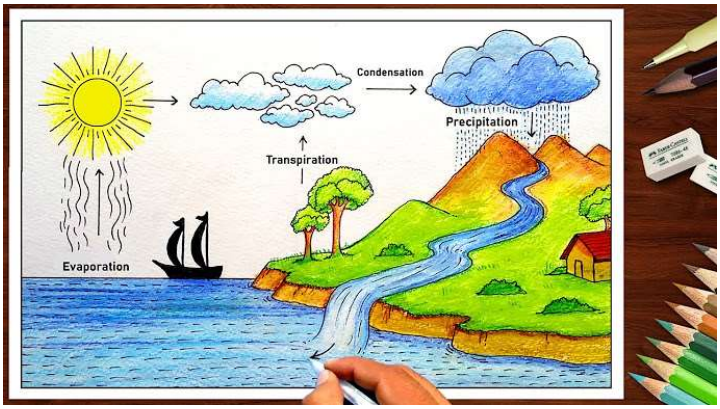
**2. Perform basic Image Handling and processing operations on the image.• Read an image in python and Convert an Image to Blur using GaussianBlur.**

**AIM:** To Perform Basic Operations to Read Image and Convert to Blur using GaussianBlur.

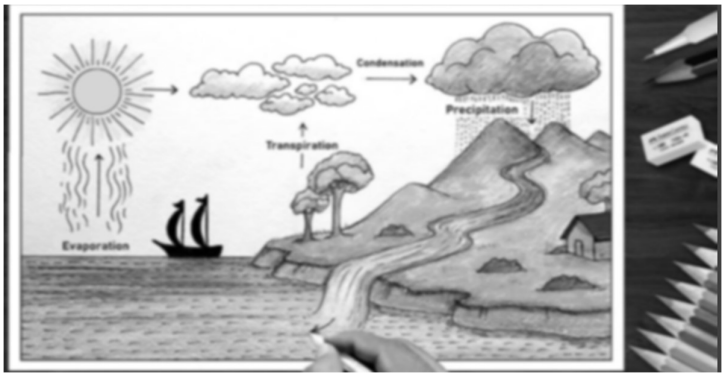
**PROGRAM :**

```
import cv2
import numpy as np
kernel = np.ones((5,5),np.uint8)
print(kernel)
path = "C:/Users/vempa/Downloads/lab 2.jpg"
img =cv2.imread(path)
imgGray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
imgBlur = cv2.GaussianBlur(imgGray,(7,7),0)
cv2.imshow("Img Blur",imgBlur)
cv2.waitKey(0)
```

INPUT :




OUTPUT :



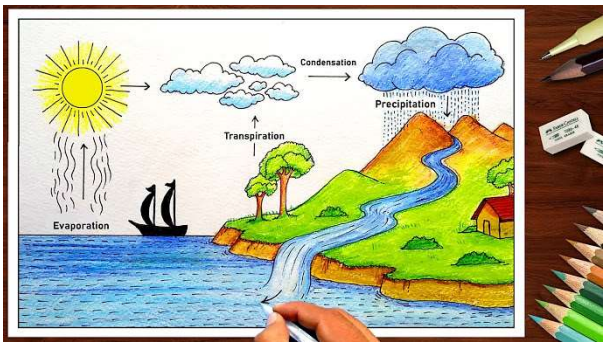
**3. Perform basic Image Handling and processing operations on the image• Read an image in python and Convert an Image to show outline using Canny function**

**AIM:** To Perform Basic Operations to Convert image to show outline Canny function in Python.

**PROGRAM:**

```
import cv2
import numpy as np
kernel = np.ones((5,5),np.uint8)
print(kernel)
path = "C:/Users/vempa/Downloads/lab 2.jpg"
img =cv2.imread(path)
imgGray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
imgBlur = cv2.GaussianBlur(imgGray,(7,7),0)
imgCanny = cv2.Canny(imgBlur,100,200)
cv2.imshow("Img Canny",imgCanny)
cv2.waitKey(0)
```

INPUT :




OUTPUT :

**4. Perform basic Image Handling and processing operations on the image• Read an image in python and Dilate an Image using Dilate function**

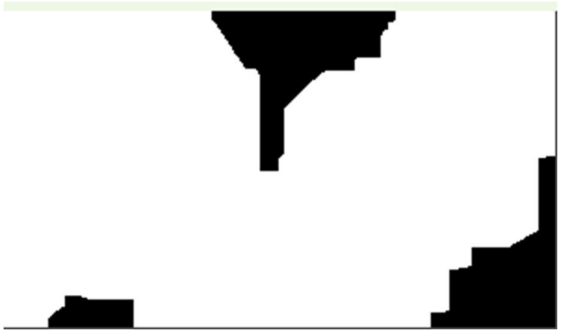
**AIM:** To Perform Basic Operations to Read Image and Dilate an Image using Python

**PROGRAM:**

```
import cv2
import numpy as np
kernel = np.ones((5,5),np.uint8)
print(kernel)
path = "C:/Users/vempa/Downloads/LAB4.jpg"
img =cv2.imread(path)
imgGray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
imgBlur = cv2.GaussianBlur(imgGray,(7,7),0)
imgCanny = cv2.Canny(imgBlur,100,200)
imgDilation = cv2.dilate(imgCanny,kernel , iterations = 10)
imgEroded = cv2.erode(imgDilation,kernel,iterations=2)
cv2.imshow("Img Erosion",imgEroded)
cv2.waitKey(0)
```

**INPUT :**

**OUTPUT:**



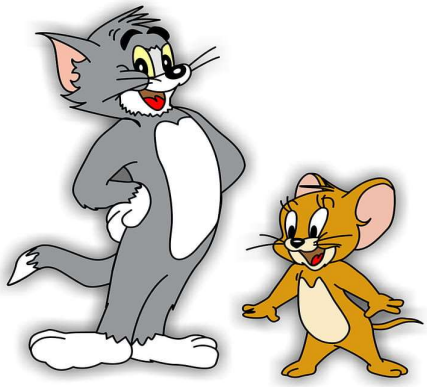
**5. Perform basic Image Handling and processing operations on the image• Read an image in python and Erode an Image using erode function**

**AIM:** The Aim of the experiment is to Read an image in python and Erode an Image using erode function

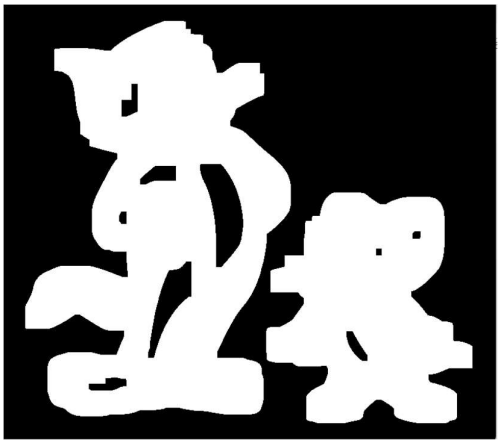
**PROGRAM:**

```
import cv2
import numpy as np
kernel = np.ones((5,5),np.uint8)
print(kernel)
path ="C:/Users/vempa/Downloads/HD-wallpaper-tom-and-jerry-cartoons.jpg"
img =cv2.imread(path)
imgGray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
imgBlur = cv2.GaussianBlur(imgGray,(7,7),0)
imgCanny = cv2.Canny(imgBlur,100,200)
imgDilation = cv2.dilate(imgCanny,kernel , iterations = 10)
imgEroded = cv2.erode(imgDilation,kernel,iterations=2)
cv2.imshow("Img Erosion",imgEroded)
```

**INPUT :**



**OUTPUT:**



**6. Perform basic video processing operations on the captured video• Read captured video in python and display the video, in slow motion and in fast motion.**

**AIM:** The Aim of the Experiment is to Read captured video in python and display the video, in slow motion and in fast motion

**PROGRAM:**

```
import cv2
def play_video(video_path, speed=1.0):
    cap = cv2.VideoCapture(video_path)
    if not cap.isOpened():
        print("Error opening video file")
        return
    fps = cap.get(cv2.CAP_PROP_FPS)
    new_fps = fps * speed
    while cap.isOpened():
        ret, frame = cap.read()
        if not ret:
            break
        cv2.imshow('Video Player', frame)
        if cv2.waitKey(int(1000 / new_fps)) & 0xFF == 27:  # Press 'Esc' to exit
            break
    cap.release()
    cv2.destroyAllWindows()
video_path = "C:/drive/OneDrive/Pictures/Slide Shows/Ram's/WA-VID-20200720-9aa8edb7.mp4"
play_video(video_path, speed=0.5)
play_video(video_path, speed=2.0)
```

**INPUT :**

**OUTPUT :**