**CODE**

import tensorflow as tf

import numpy as np

import matplotlib.pyplot as plt

import math

# import VGG 19 model and keras Model API

from tensorflow.keras.applications.vgg19 import VGG19, preprocess\_input

from tensorflow.keras.preprocessing.image import load\_img, img\_to\_array

from tensorflow.keras.models import Model

def load\_and\_process\_image(image\_path):

    img = load\_img(image\_path)

    # convert image to array

    img = img\_to\_array(img)

    img = preprocess\_input(img)

    img = np.expand\_dims(img, axis=0)

    return img

# Image Credits: Tensorflow Doc

content\_path = tf.keras.utils.get\_file(

'content.jpg',

'https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcT4KKk7bLvRxv8TT678DGkDEbVEl9DEh8FE2g&s')

style\_path = tf.keras.utils.get\_file(

'style.jpg',

'https://storage.googleapis.com/download.tensorflow.org/example\_images/Vassily\_Kandinsky%2C\_1913\_-\_Composition\_7.jpg')

# code to load and process image

def load\_and\_process\_image(image\_path):

    img = load\_img(image\_path)

    # convert image to array

    img = img\_to\_array(img)

    img = preprocess\_input(img)

    img = np.expand\_dims(img, axis=0)

    return img

def deprocess(img):

    # perform the inverse of the pre processing step

    img[:, :, 0] += 103.939

    img[:, :, 1] += 116.779

    img[:, :, 2] += 123.68

    # convert RGB to BGR

    img = img[:, :, ::-1]

    img = np.clip(img, 0, 255).astype('uint8')

    return img

def display\_image(image):

    # remove one dimension if image has 4 dimension

    if len(image.shape) == 4:

        img = np.squeeze(image, axis=0)

    img = deprocess(img)

    plt.grid(False)

    plt.xticks([])

    plt.yticks([])

    plt.imshow(img)

    return

content\_img = load\_and\_process\_image(content\_path)

display\_image(content\_img)

# load style image

style\_img = load\_and\_process\_image(style\_path)

display\_image(style\_img)

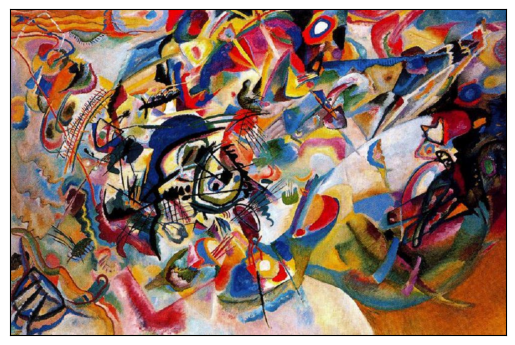
**OUTPUT**

Downloading data from <https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcT4KKk7bLvRxv8TT678DGkDEbVEl9DEh8FE2g&s>

**7541/7541** ━━━━━━━━━━━━━━━━━━━━ **0s** 1us/step

Downloading data from <https://storage.googleapis.com/download.tensorflow.org/example_images/Vassily_Kandinsky%2C_1913_-_Composition_7.jpg>

**195196/195196** ━━━━━━━━━━━━━━━━━━━━ **0s** 0us/step

****