RINEX

MINI PROJECT 2

8x8 CHECKER BOARD

Submitted by,

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(Final year)

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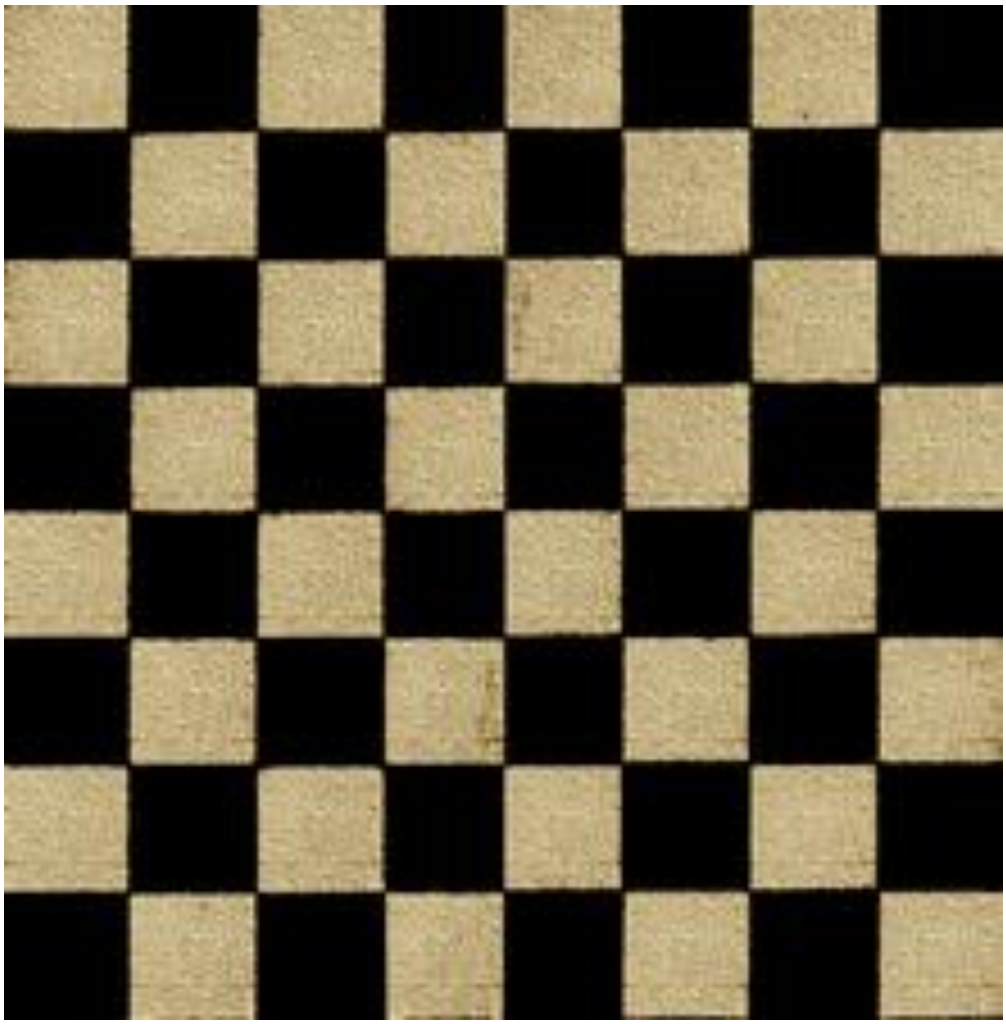
AND SCIENCE, OOTY ROAD,

MYSORE.

CONTENT

INTRODUCTION

A **checkerboard** or **chequerboard** is a board of checkered pattern on which checkers (also known as English draughts) is played. Most commonly, it consists of 64 squares (8×8) of alternating dark and light color, typically green and buff (official tournaments), black and red (consumer commercial), or black and white. An 8×8 checkerboard is used to play many other games, including chess, whereby it is known as a chessboard. Other rectangular square-tiled boards are also often called checkerboards.



Python program to print checkerboard pattern of nxn using numpy

Given n, print the checkboard pattern for a n x n matrix

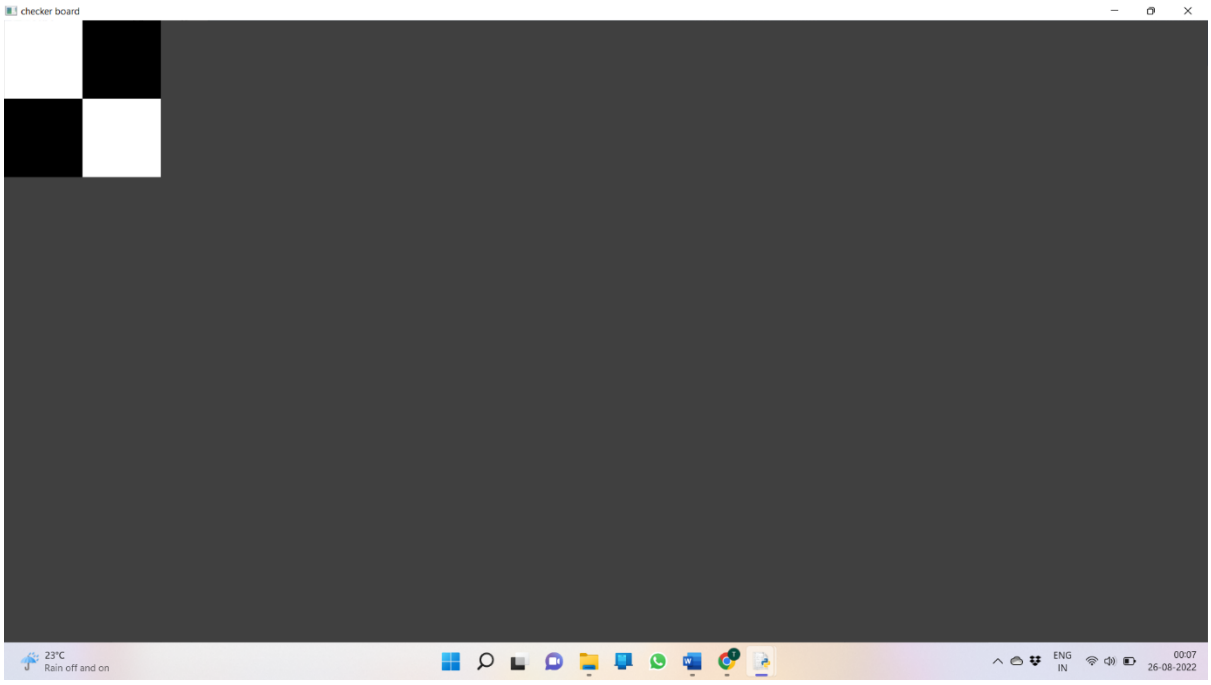
Checkboard Pattern for n = 8:

It consists of n * n squares of alternating 0 for white and 1 for black.

We can do the same using nested for loops and some if conditions, but using Python's numpy library, we can import a 2-D matrix and get the checkboard pattern using slicing.

W2'll be using following python function to print pattern:

```
import numpy as np
import cv2
img = np.zeros((200,200,3))#creates a black  background of 200x200
pixels
img[0:100,0:100] = 255,255,255 #white
img[100:200,100:200] = 255,255,255
cv2.imshow('checker board',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```



PROGRAM

```
#MINI PROJECT.2 8X8 CHECKER BOARD

import numpy as np
import cv2
img = np.zeros((800,800,3)) #creates a black  background of 800x800 pixels
img[0:100,0:100] = 255,255,255 #white
img[100:200,100:200] = 255,255,255

img[0:100,200:300] = 255,255,255
img[200:300,0:100] = 255,255,255
img[200:300,200:300] = 255,255,255

img[0:100,400:500] = 255,255,255
img[200:300,0:100] = 255,255,255
img[300:400,100:200] = 255,255,255
img[300:400,300:400] = 255,255,255

img[400:500,0:100] = 255,255,255
img[200:300,0:100] = 255,255,255
img[100:200,300:400] = 255,255,255
img[200:300,400:500] = 255,255,255
img[400:500,400:500] = 255,255,255

img[0:100,600:700] = 255,255,255
img[500:600,700:800] = 255,255,255
img[100:200,500:600] = 255,255,255
img[200:300,600:700] = 255,255,255
img[500:600,100:200] = 255,255,255
img[500:600,500:600] = 255,255,255
```

```
img[600:700,0:100] = 255,255,255
img[300:400,500:600] = 255,255,255
img[100:200,700:800] = 255,255,255
img[400:500,600:700] = 255,255,255
img[300:400,700:800] = 255,255,255
img[600:700,200:300] = 255,255,255
img[600:700,600:700] = 255,255,255

img[700:800,700:800] = 255,255,255
img[700:800,500:600] = 255,255,255
img[300:400,100:200] = 255,255,255
img[400:500,200:300] = 255,255,255
img[500:600,300:400] = 255,255,255
img[600:700,400:500] = 255,255,255
img[700:800,100:200] = 255,255,255
img[700:800,300:400] = 255,255,255


cv2.imshow('checker board',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

project2.py - C:\Users\theja\OneDrive\Desktop\RINEX\project2.py (3.10.5)

File Edit Format Run Options Window Help

```
#MINI PROJECT.2 8X8 CHECKER BOARD

import numpy as np
import cv2
img = np.zeros((800,800,3))#creates a black  background of 200x200 pixels
img[0:100,0:100] = 255,255,255 #white
img[100:200,100:200] = 255,255,255

img[0:100,200:300] = 255,255,255
img[200:300,0:100] = 255,255,255
img[200:300,200:300] = 255,255,255

img[0:100,400:500] = 255,255,255
img[200:300,0:100] = 255,255,255
img[300:400,100:200] = 255,255,255
img[300:400,300:400] = 255,255,255

img[400:500,0:100] = 255,255,255
img[200:300,0:100] = 255,255,255
img[100:200,300:400] = 255,255,255
img[200:300,400:500] = 255,255,255
img[400:500,400:500] = 255,255,255

img[0:100,600:700] = 255,255,255
img[500:600,700:800] = 255,255,255
img[100:200,500:600] = 255,255,255
img[200:300,600:700] = 255,255,255
img[500:600,100:200] = 255,255,255
img[500:600,500:600] = 255,255,255

img[600:700,0:100] = 255,255,255
img[300:400,500:600] = 255,255,255
img[100:200,700:800] = 255,255,255
img[400:500,600:700] = 255,255,255
img[300:400,700:800] = 255,255,255
img[600:700,200:300] = 255,255,255
img[600:700,600:700] = 255,255,255

img[700:800,700:800] = 255,255,255
img[700:800,500:600] = 255,255,255
img[300:400,100:200] = 255,255,255
img[400:500,200:300] = 255,255,255
img[500:600,300:400] = 255,255,255
img[600:700,400:500] = 255,255,255
img[700:800,100:200] = 255,255,255
img[700:800,300:400] = 255,255,255
```

Ln: 36 Col: 34

project2.py - C:\Users\theja\OneDrive\Desktop\RINEX\project2.py (3.10.5)

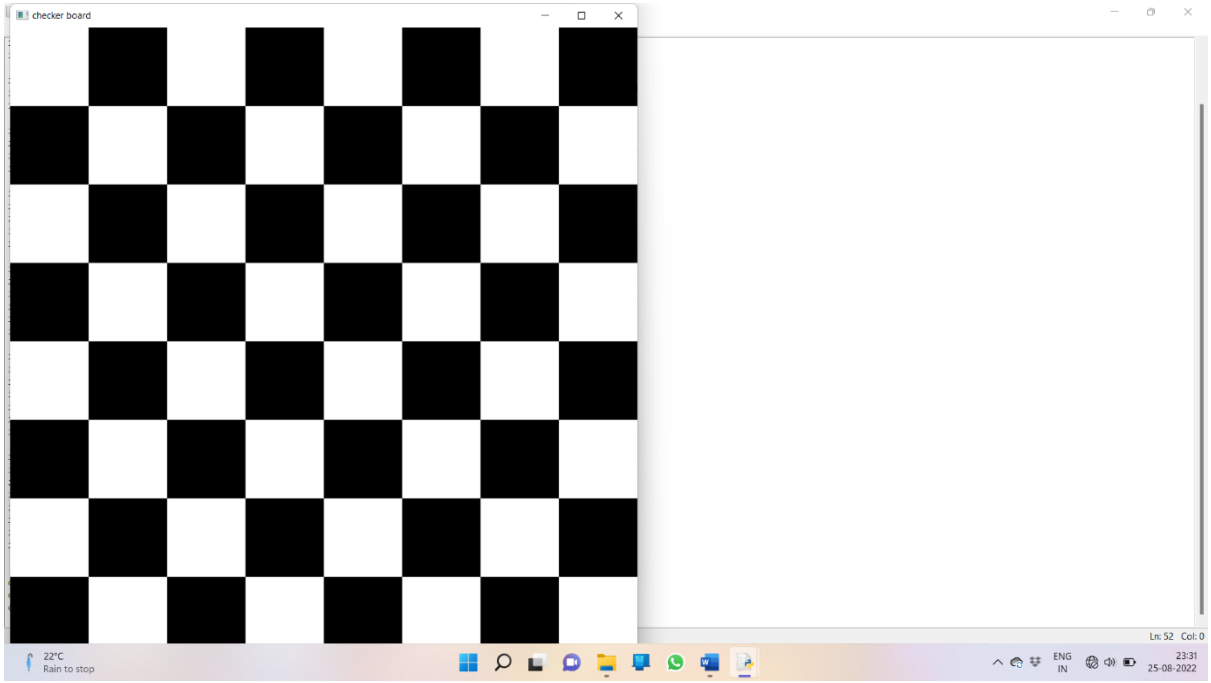
File Edit Format Run Options Window Help

```
img[0:100,0:100] = 255,255,255 #white
img[100:200,100:200] = 255,255,255

img[0:100,200:300] = 255,255,255
img[200:300,0:100] = 255,255,255
img[200:300,200:300] = 255,255,255

img[0:100,400:500] = 255,255,255
img[200:300,0:100] = 255,255,255
img[300:400,100:200] = 255,255,255
img[300:400,300:400] = 255,255,255

img[400:500,0:100] = 255,255,255
img[200:300,0:100] = 255,255,255
img[100:200,300:400] = 255,255,255
img[200:300,400:500] = 255,255,255
img[400:500,400:500] = 255,255,255

img[0:100,600:700] = 255,255,255
img[500:600,700:800] = 255,255,255
img[100:200,500:600] = 255,255,255
img[200:300,600:700] = 255,255,255
img[500:600,100:200] = 255,255,255
img[500:600,500:600] = 255,255,255

img[600:700,0:100] = 255,255,255
img[300:400,500:600] = 255,255,255
img[100:200,700:800] = 255,255,255
img[400:500,600:700] = 255,255,255
img[300:400,700:800] = 255,255,255
img[600:700,200:300] = 255,255,255
img[600:700,600:700] = 255,255,255

img[700:800,700:800] = 255,255,255
img[700:800,500:600] = 255,255,255
img[300:400,100:200] = 255,255,255
img[400:500,200:300] = 255,255,255
img[500:600,300:400] = 255,255,255
img[600:700,400:500] = 255,255,255
img[700:800,100:200] = 255,255,255
img[700:800,300:400] = 255,255,255


cv2.imshow('checker board',img)
cv2.waitKey(0)
cv2.destroyAllWindows()
```

Ln: 52 Col: 0

22°C
Rain to stop
ENG
IN
23:31
25-08-2022

OUTPUT:



Conclusion:

It was a wonderful learning experience for me while working on this project. This project has developed my thinking skills related to the topics. This project gave me real insight into the Python World.

I enjoyed each and every bit work I had put into this project.

Thank You.