In [1]:
```
#Importing the required Libraries
import pandas
import cv2
import dlib
import face_recognition
```

In [2]:
```
#Reading/Importing all images with load_image_file of face_recognition
img1 = face_recognition.load_image_file("E:/CBDT/POC/POC 2/Images - Saurabh/1.Saurabh.jpg")
img2 = face_recognition.load_image_file("E:/CBDT/POC/POC 2/Images - Saurabh/2.Saurabh.jpg")
img3 = face_recognition.load_image_file("E:/CBDT/POC/POC 2/Images - Saurabh/3.Saurabh.jpg")
img4 = face_recognition.load_image_file("E:/CBDT/POC/POC 2/Images - Saurabh/4.Saurabh.jpg")
img5 = face_recognition.load_image_file("E:/CBDT/POC/POC 2/Images - Saurabh/5.Sourav.jpg")
img6 = face_recognition.load_image_file("E:/CBDT/POC/POC 2/Images - Saurabh/6.Saurabh.jpg")
```

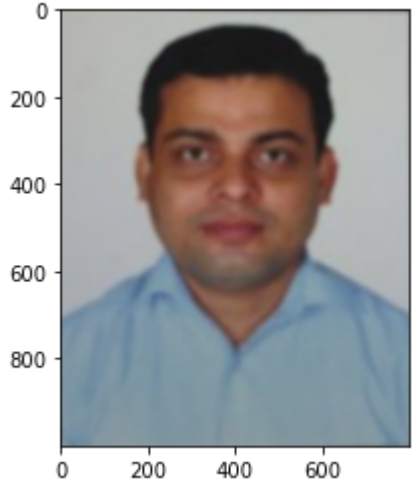
In [3]:
```
#Resizing the images:
resized_image1 = cv2.resize(img1, (800,1000))
resized_image2 = cv2.resize(img2, (800,1000))
resized_image3 = cv2.resize(img3, (800,1000))
resized_image4 = cv2.resize(img4, (800,1000))
resized_image5 = cv2.resize(img5, (800,1000))
resized_image6 = cv2.resize(img6, (800,1000))
```

In [4]:
```
import matplotlib.pyplot as plt
plt.imshow(resized_image1)
plt.show()
```

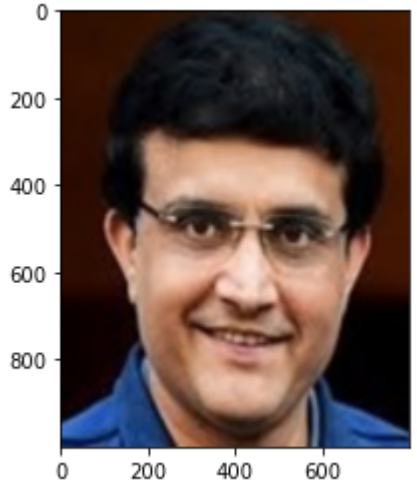
In [5]:
```
plt.imshow(resized_image2)
plt.show()
```

In [6]:
```
plt.imshow(resized_image3)
plt.show()
```

In [7]:
```
plt.imshow(resized_image4)
plt.show()
```



In [8]:
```
plt.imshow(resized_image5)
plt.show()
```



In [9]:
```
plt.imshow(resized_image6)
plt.show()
```

In [10]:
```
import time
start = time.process_time()
#Encoding of images with face_encodings of face_recognition
img1_encoding = face_recognition.face_encodings(resized_image1)[0]
img2_encoding = face_recognition.face_encodings(resized_image2)[0]
img3_encoding = face_recognition.face_encodings(resized_image3)[0]
img4_encoding = face_recognition.face_encodings(resized_image4)[0]
img5_encoding = face_recognition.face_encodings(resized_image5)[0]
img6_encoding = face_recognition.face_encodings(resized_image6)[0]
print(time.process_time() - start)
```

```
8.299253199999999
```

In [11]:
```
face_encodings_list = [img1_encoding,img2_encoding,img3_encoding,img4_encoding,img5_encoding,img6_encoding]
```

In [12]:
```
#Comparing images with compare_faces of face_recognition
new = []
import numpy as np
for kface in face_encodings_list:
    for mface in face_encodings_list:
        results = face_recognition.compare_faces([kface], mface,0.54)
        (new.append(results))
```

In [13]:
```
#Image Set -1
newa = np.array(new)
final_matrix = newa.reshape(6,6)
```

In [14]:
```
print(final_matrix)
```

```
[[ True  True  True  True False  True]
 [ True  True  True  True False  True]
 [ True  True  True  True False  True]
 [ True  True  True  True False  True]
 [False False False False  True False]
 [ True  True  True  True False  True]]
```

In [15]:
```
new = []
import numpy as np
for kface in face_encodings_list:
    for mface in face_encodings_list:
        results = face_recognition.face_distance([kface], mface)
        (new.append(results))
```

In [16]:
```
#Image Set -1
newa = np.array(new)
final_matrix = newa.reshape(6,6)
```

In [17]:
```
print(final_matrix)
```

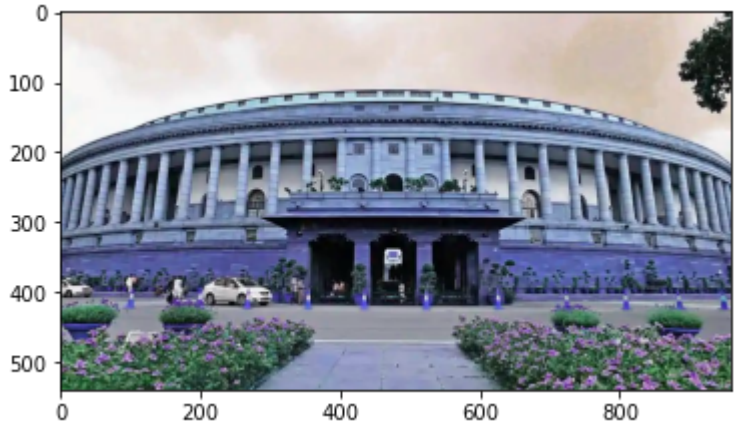
```
[[0.         0.22024547 0.30386584 0.31078773 0.72198018 0.29794162]
 [0.22024547 0.         0.26735091 0.32823016 0.7575886  0.26456161]
 [0.30386584 0.26735091 0.         0.36200972 0.78132131 0.32961563]
 [0.31078773 0.32823016 0.36200972 0.         0.75541097 0.25180268]
 [0.72198018 0.7575886  0.78132131 0.75541097 0.         0.74669632]
 [0.29794162 0.26456161 0.32961563 0.25180268 0.74669632 0.        ]]
```

In [18]:
```
#Image Analytics
p = cv2.imread("E:/CBDT/Python Training for LTI/Parliament.jpg")
```

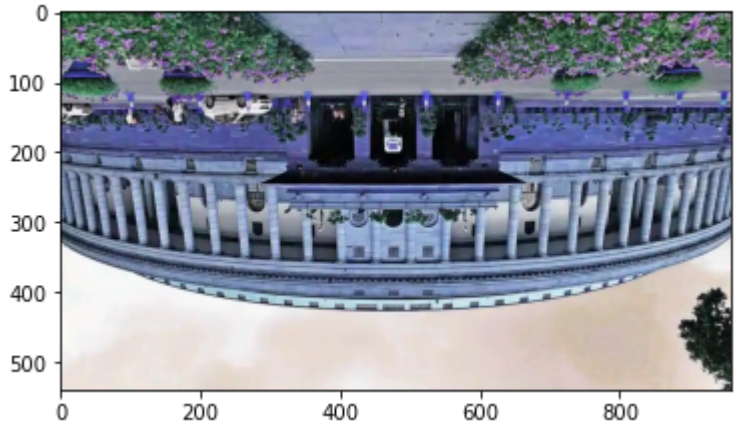
In [19]:
```
type(p)
```

Out[19]:
```
numpy.ndarray
```

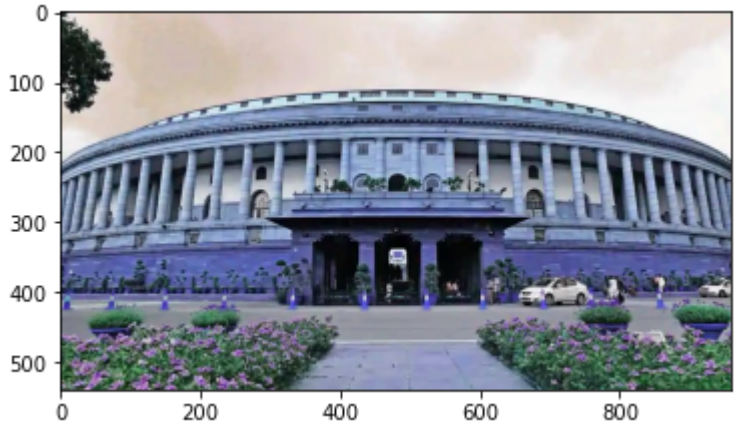
In [20]:
```
plt.imshow(p)
plt.show()
```



In [21]:
```
plt.imshow(p[::-1])
plt.show()
```



In [22]:
```
#reversed the column
plt.imshow(p [: ,: :-1])
plt.show()
```



In [23]:
```
#Extracting a portion from the image
plt.imshow(p [300:400 ,320:620 ])
plt.show()
```

In [ ]:
```
```