In [39]:
```
import numpy as np
```

In [41]:
```
ones_arr=np.ones((3,3))
ones_arr
```

Out[41]:
```
array([[1., 1., 1.],
       [1., 1., 1.],
       [1., 1., 1.]])
```

In [43]:
```
ones_arr*255
```

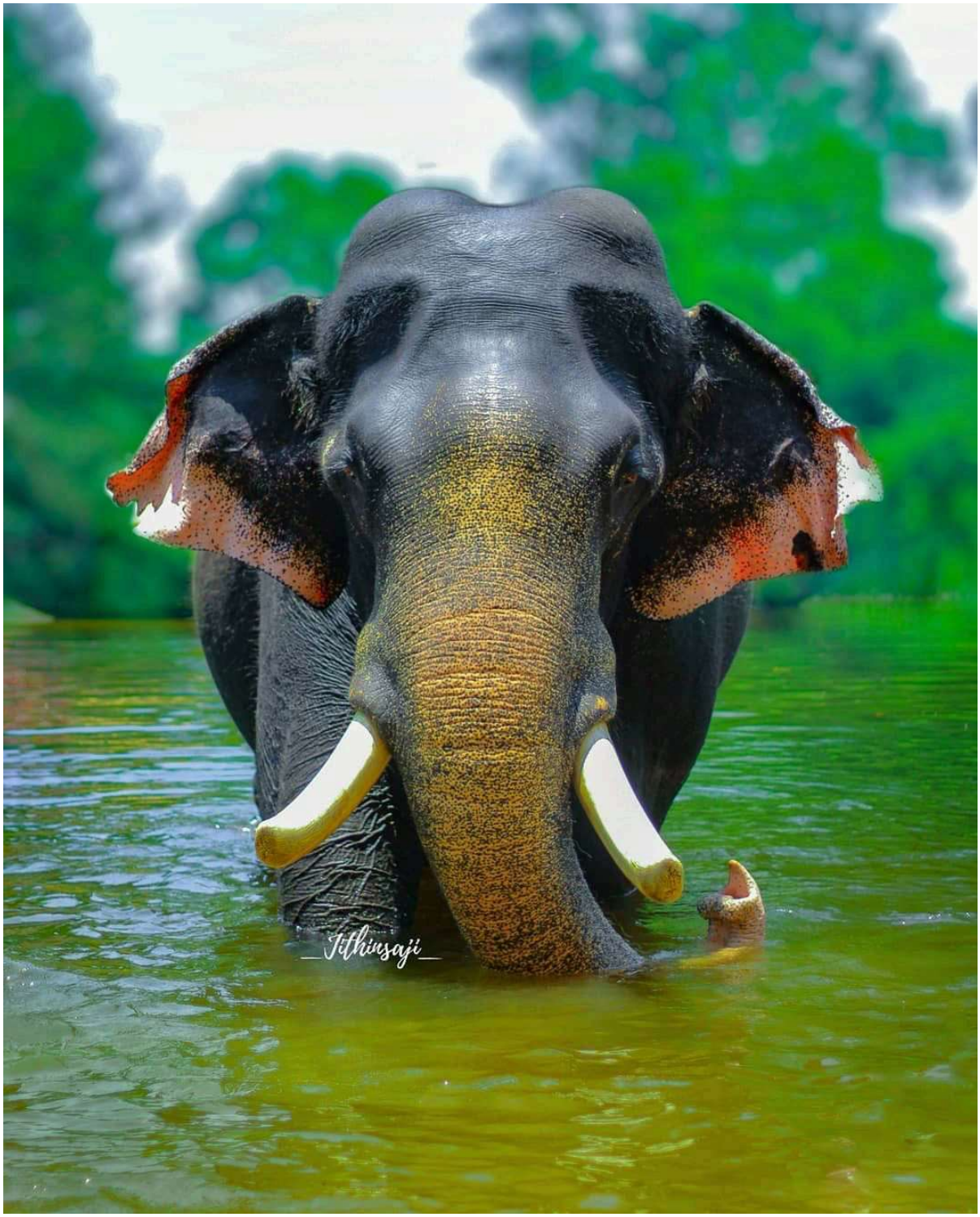
Out[43]:
```
array([[255., 255., 255.],
       [255., 255., 255.],
       [255., 255., 255.]])
```

In [45]:
```
import matplotlib.pyplot as plt
%matplotlib inline
```

In [47]:
```
from PIL import Image
```

In [49]:
```
elephant_img=Image.open(r'C:\Users\arsha_4tjdyqj\Downloads\sample image for DS.jpg'
elephant_img
```

Out[49]:



In [51]:
```
type(elephant_img)
```

Out[51]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [53]:
```
elephant_arr=np.asarray(elephant_img)
elephant_arr
```

Out[53]:
```
array([[[ 97, 142, 165],
        [ 96, 141, 164],
        [ 95, 140, 163],
        ...,
        [246, 247, 242],
        [246, 247, 242],
        [246, 247, 242]],

       [[ 96, 141, 162],
        [ 95, 140, 161],
        [ 94, 139, 160],
        ...,
        [246, 247, 242],
        [246, 247, 242],
        [246, 247, 242]],

       [[ 94, 139, 160],
        [ 94, 139, 160],
        [ 93, 138, 159],
        ...,
        [246, 247, 242],
        [246, 247, 242],
        [246, 247, 242]],

       ...,

       [[106, 120,  23],
        [106, 120,  23],
        [106, 122,  24],
        ...,
        [122, 133,   5],
        [121, 132,   4],
        [119, 130,   2]],

       [[105, 120,  25],
        [104, 121,  25],
        [105, 122,  26],
        ...,
        [122, 131,   4],
        [121, 130,   3],
        [120, 129,   2]],

       [[104, 121,  27],
        [104, 121,  27],
        [103, 122,  30],
        ...,
        [124, 130,   4],
        [124, 130,   4],
        [122, 128,   2]]], dtype=uint8)
```

In [55]:
```
type(elephant_arr)
```

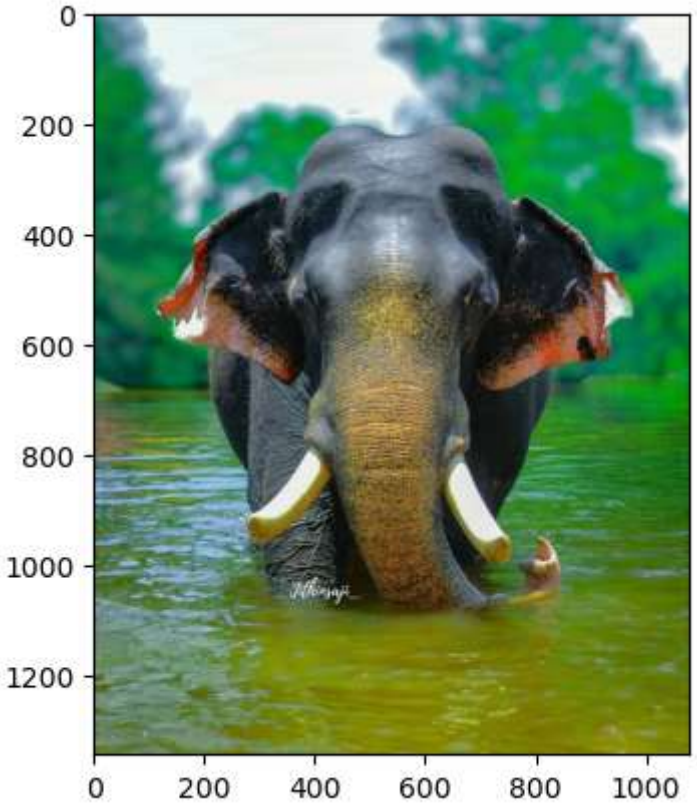
Out[55]:
```
numpy.ndarray
```

In [57]:
```
elephant_arr.shape
```

Out[57]: (1343, 1080, 3)

In [59]:
```
plt.imshow(elephant_arr)
```

Out[59]: <matplotlib.image.AxesImage at 0x1639dc6a690>



In [61]:
```
elephant_red=elephant_arr.copy()
elephant_red
```

Out[61]:
```
array([[[ 97, 142, 165],
        [ 96, 141, 164],
        [ 95, 140, 163],
        ...,
        [246, 247, 242],
        [246, 247, 242],
        [246, 247, 242]],

       [[ 96, 141, 162],
        [ 95, 140, 161],
        [ 94, 139, 160],
        ...,
        [246, 247, 242],
        [246, 247, 242],
        [246, 247, 242]],

       [[ 94, 139, 160],
        [ 94, 139, 160],
        [ 93, 138, 159],
        ...,
        [246, 247, 242],
        [246, 247, 242],
        [246, 247, 242]],

       ...,

       [[106, 120,  23],
        [106, 120,  23],
        [106, 122,  24],
        ...,
        [122, 133,   5],
        [121, 132,   4],
        [119, 130,   2]],

       [[105, 120,  25],
        [104, 121,  25],
        [105, 122,  26],
        ...,
        [122, 131,   4],
        [121, 130,   3],
        [120, 129,   2]],

       [[104, 121,  27],
        [104, 121,  27],
        [103, 122,  30],
        ...,
        [124, 130,   4],
        [124, 130,   4],
        [122, 128,   2]]], dtype=uint8)
```

In [63]:
```
type(elephant_img)
```

Out[63]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [65]:
```
type(elephant_arr)
```

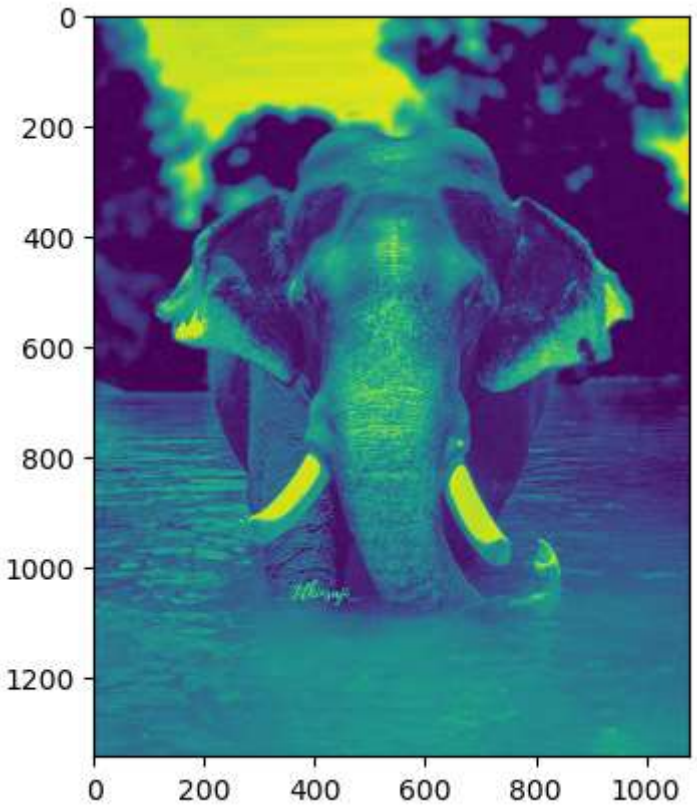
Out[65]: numpy.ndarray

In [67]:
```
elephant_red.shape
```

Out[67]: (1343, 1080, 3)

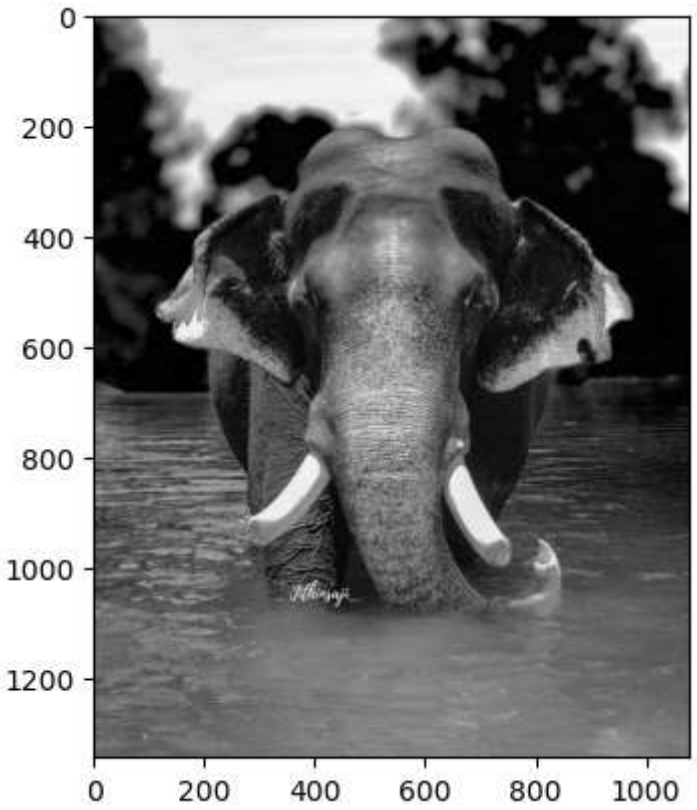
In [69]:
```
plt.imshow(elephant_red[:,:,0])
```

Out[69]: <matplotlib.image.AxesImage at 0x1639dd10f80>



In [71]:
```
plt.imshow(elephant_red[:,:,0], cmap='grey')
```

Out[71]: <matplotlib.image.AxesImage at 0x1639dcad400>



In [73]:
```
elephant_red[:,:,0]
```

Out[73]:
```
array([[ 97,  96,  95, ..., 246, 246, 246],
       [ 96,  95,  94, ..., 246, 246, 246],
       [ 94,  94,  93, ..., 246, 246, 246],
       ...,
       [106, 106, 106, ..., 122, 121, 119],
       [105, 104, 105, ..., 122, 121, 120],
       [104, 104, 103, ..., 124, 124, 122]], dtype=uint8)
```

In [75]:
```
elephant_red[:,:,1]
```

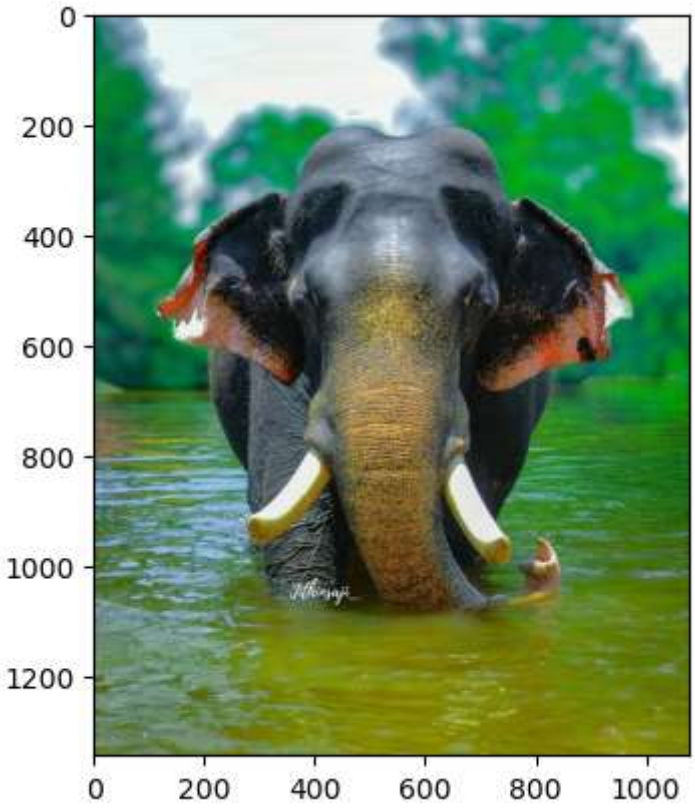
Out[75]:
```
array([[142, 141, 140, ..., 247, 247, 247],
       [141, 140, 139, ..., 247, 247, 247],
       [139, 139, 138, ..., 247, 247, 247],
       ...,
       [120, 120, 122, ..., 133, 132, 130],
       [120, 121, 122, ..., 131, 130, 129],
       [121, 121, 122, ..., 130, 130, 128]], dtype=uint8)
```

In [77]:
```
elephant_red[:,:,2]
```

Out[77]:
```
array([[165, 164, 163, ..., 242, 242, 242],
       [162, 161, 160, ..., 242, 242, 242],
       [160, 160, 159, ..., 242, 242, 242],
       ...,
       [ 23,  23,  24, ...,   5,   4,   2],
       [ 25,  25,  26, ...,   4,   3,   2],
       [ 27,  27,  30, ...,   4,   4,   2]], dtype=uint8)
```

In [79]:
```
plt.imshow(elephant_red)
```

Out[79]:
```
<matplotlib.image.AxesImage at 0x1639dbbc3e0>
```



In [ ]: