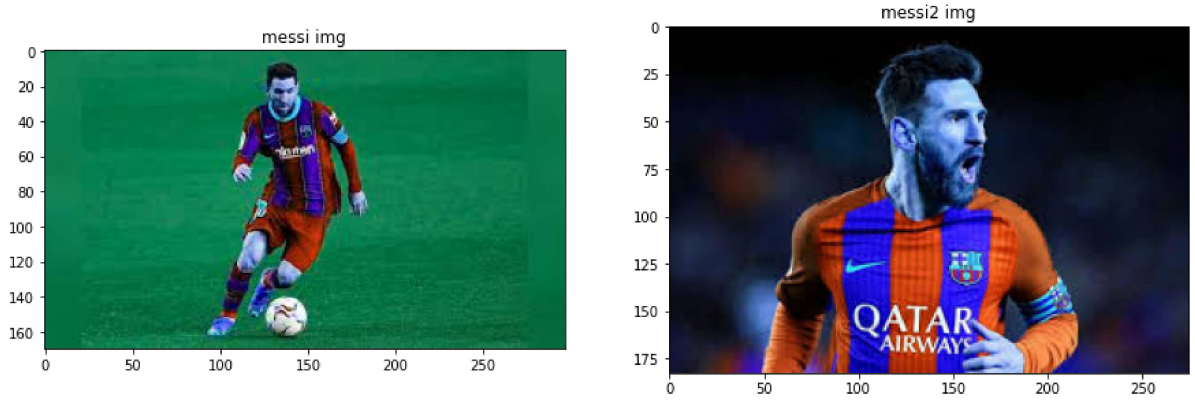
Assgn 02

Use below 2 images (or You can choose other images)

- take out face img from right image (below)
- put that face img on the left img left top corner (see ans image),
- and copy that face img on the right top corner as flipped image (see ans image).
- And put some text and current time as shown as the answer image

※ You can use any other images but do the same image processing and get the same style of the answer image.

In [5]:
```
import cv2
import numpy as np
from matplotlib import pyplot as plt
from matplotlib.pyplot import figure

img_messi = cv2.imread('./images/messi.jpeg',1)
img_messi2 = cv2.imread('./images/messi2.jpeg',1)

fig, axs = plt.subplots(1,2,figsize=(15,10))
axs[0].imshow(img_messi), axs[0].axis('on'), axs[0].set_title('messi img')
axs[1].imshow(img_messi2), axs[1].axis('on'), axs[1].set_title('messi2 img')
plt.show()
```



In [6]:
```
img_messi.shape, img_messi2.shape
```

Out[6]:
```
((170, 297, 3), (183, 275, 3))
```

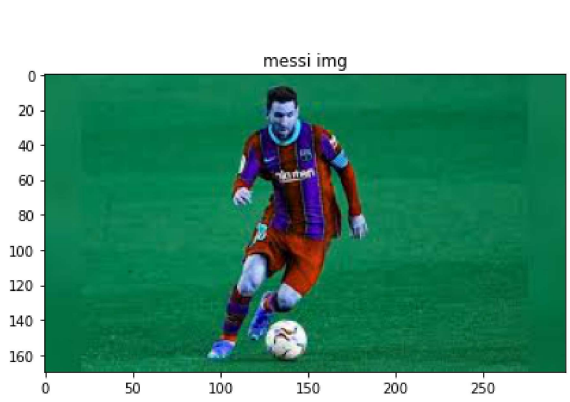
Answer Image

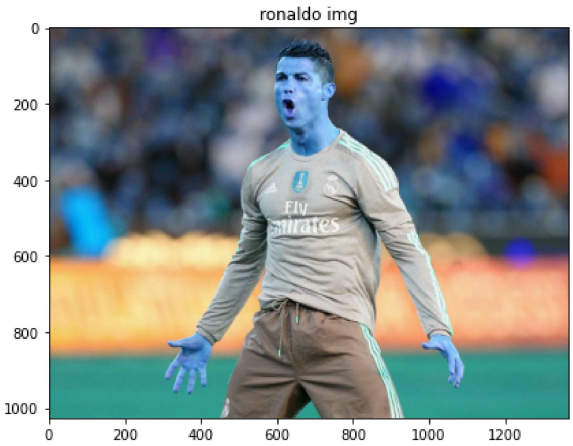
In [4]:
```
ans = plt.imread('./results/messi_assgn02.jpg')

figure(figsize=(15, 10), dpi=80)
plt.imshow(ans)
plt.show()
```

Assgn_02 Answer Code

- file name = 'your_name_assgn02.pdf' (code and ontput)
- Upload to LMS before the next Monday 0900(It's checked by LMS program automatically, so you must upload before the date)

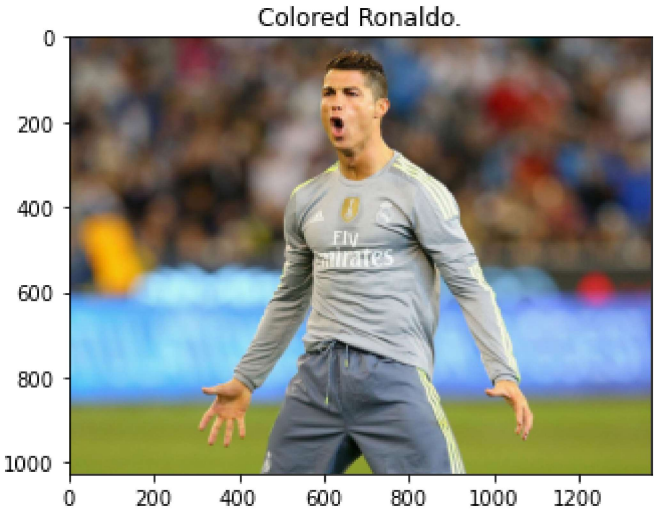
In [1]:
```
import cv2
import numpy as np
from matplotlib import pyplot as plt
from matplotlib.pyplot import figure

img_messi = cv2.imread('./images/messi.jpeg',1)
img_ronaldo = cv2.imread('./images/cristiano-ronaldo.jpg',1)

fig, axs = plt.subplots(1,2,figsize=(15,10))
axs[0].imshow(img_messi), axs[0].axis('on'), axs[0].set_title('messi img')
axs[1].imshow(img_ronaldo), axs[1].axis('on'), axs[1].set_title('ronaldo img')
plt.show()
```





Slide Ronaldo's face

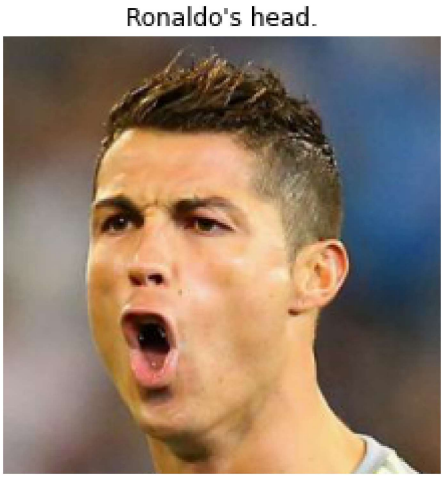
In [2]:
```
import numpy as np

img_ronaldo = cv2.imread('./images/cristiano-ronaldo.jpg', 1)
img_ronaldo = cv2.cvtColor(img_ronaldo, cv2.COLOR_BGR2RGB)
plt.imshow(img_ronaldo), plt.title("Colored Ronaldo.");
```



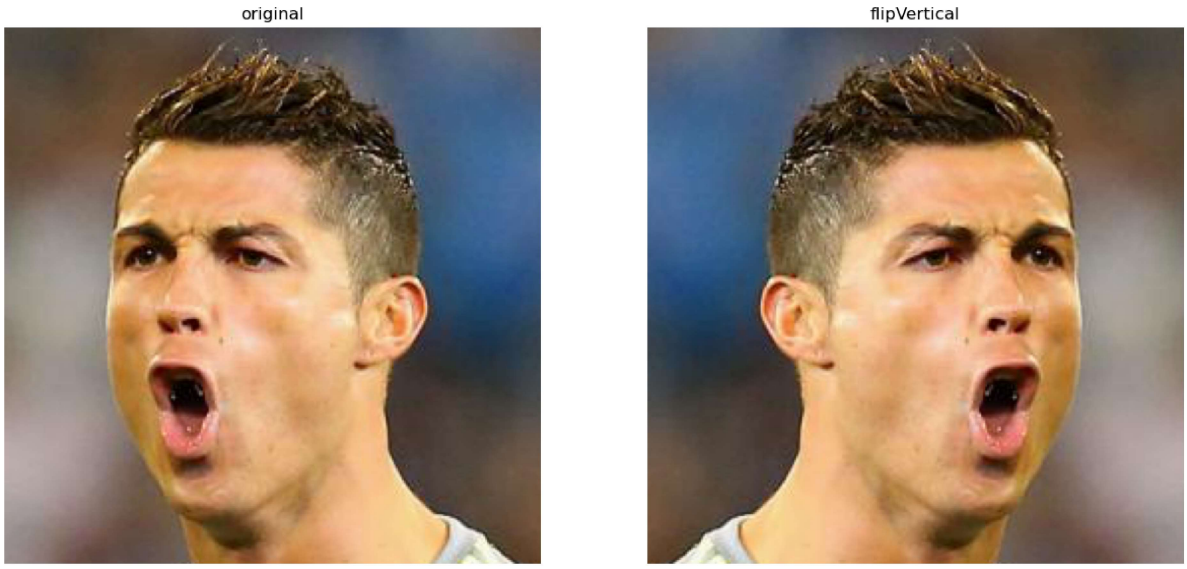
In [3]:
```
x=540; y=20; w=270; h=270         # roi coordinate
roi = img_ronaldo[y:y+h, x:x+w]          # roi

print(roi.shape)
cv2.rectangle(roi, (0,0), (h, w), (0,255,0),3) # draw rectangle

plt.figure(figsize=(15, 10))
plt.imshow(img_ronaldo), plt.title('Colored Ronaldo.')
plt.show()
```

```
(270, 270, 3)
```

In [4]:
```
img_ronaldo = cv2.imread('./images/cristiano-ronaldo.jpg', 1)
img_ronaldo = cv2.cvtColor(img_ronaldo, cv2.COLOR_BGR2RGB)

x=540; y=20; w=270; h=270        # roi coordinate
roi = img_ronaldo[y:y+h, x:x+w]
ronaldo_head = roi.copy()

plt.imshow(ronaldo_head), plt.axis('off'), plt.title("Ronaldo's head.");
```



In [5]:
```
from matplotlib import pyplot as plt
from matplotlib.pyplot import figure

figure(figsize=(15, 10), dpi=100)
flipHorizontal = cv2.flip(ronaldo_head, 1)

plt.subplot(121),plt.imshow(ronaldo_head),plt.title('original'),plt.axis('off')
plt.subplot(122),plt.imshow(flipHorizontal),plt.title('flipVertical'),plt.axis(
plt.show()
```



Add Ronalno's head to Messi image

Add text to image

In [137]:
```
img_messi = cv2.imread('./images/messi.jpeg',1)

x=120; y=0; w=80; h=80
ronaldo_head_AREA = cv2.resize(ronaldo_head, (w,h),interpolation=cv2.INTER_AREA
flipHorizontal_AREA = cv2.resize(flipHorizontal, (w,h),interpolation=cv2.INTER_


img_messi[y:y+h, x-x:w] = flipHorizontal_AREA
img_messi[y:y+h, 217:297] = ronaldo_head_AREA

font = cv2.FONT_HERSHEY_SIMPLEX
cv2.putText(img_messi,'Sep 12, 2023 15:18:00' ,(160,160), font, 0.3,(255, 0, 16
cv2.putText(img_messi,'Siuuuu' ,(60,60), font, 0.5,(255, 153, 255),1)
cv2.putText(img_messi,'Siuuuu' ,(190,60), font, 0.5,(255, 0, 102),1)

figure(figsize=(20, 20), dpi=80)
plt.imshow(img_messi);
```