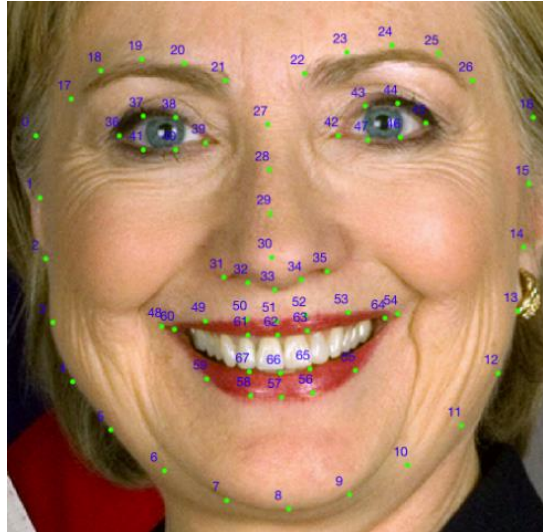


## Apply blush

To apply blush, it is necessary to detect cheek position using landmark points. Approximately, the best points are 3, 31 and 36 for left cheek and 13, 35 and 45.

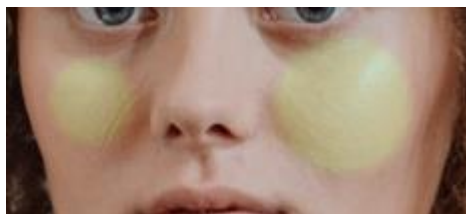


```
# Select points close to left cheek
ptL1 = (landmarks.part(36).x, landmarks.part(36).y)
ptL2 = (landmarks.part(3).x, landmarks.part(3).y)
ptL3 = (landmarks.part(31).x, landmarks.part(31).y)

# Get the distance between two points in order to calculate cheek radio
rL = int((((landmarks.part(31).x - landmarks.part(3).x)**2 + (landmarks.part(31).y - landmarks.part(3).y)**2)**(0.5))/3)

# Get center left cheek
ML = cv2.moments(np.array([ptL1, ptL2, ptL3]))
cXL = int(ML["m10"] / ML["m00"])
cYL = int(ML["m01"] / ML["m00"])
ptcL = (cXL, cYL)
```

In this case, I selected a circumference to represent a blush.



Additionally, there is a palette to change the blush color.



## References:

<https://www.pyimagesearch.com/2016/02/01/opencv-center-of-contour/>

<https://jwdinius.github.io/blog/2020/virtualmakeup/>