videorecprocyuv

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1 Videorecprocyuv

Program to capture a video from a camera and display it live on the screen

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- **Import relevant modules:**

```
In [1]: import numpy as np
        import cv2
```

- **Define the required variables to display the components:**

```
In [2]: cap = cv2.VideoCapture(0)

        cv2.namedWindow('Original')
        cv2.namedWindow('Luminanz Y')
        cv2.namedWindow('Farbkomponente U')
        cv2.namedWindow('Farbkomponente V')
```

- **Start capturing the video from the default camera and display back the Luminance and Chrominance components respectively:**

```
In [3]: while(True):
            # Capture frame-by-frame
            [ret, frame] = cap.read()

            # Our operations on the frames come here
            #Berechnung der Luminanz-Komponente Y:
            # Y= 0.114*B+0.587*G+0.299*R :

            # /256 because the result is float values which imshow expects in range 0...1:
            Y = (0.114*frame[:,:,0]+0.587*frame[:,:,1]+0.299*frame[:,:,2])/255;

            #U=B-Y:
            U = frame[:,:,0]/255.0-Y;

            #V=R-Y:
```

```
        V = frame[:,:,2]/255.0-Y;

        # Display the resulting frame
        cv2.imshow('Original',frame)
        cv2.imshow('Luminanz Y',Y)
        cv2.imshow('Farbkomponente U',np.abs(U))
        cv2.imshow('Farbkomponente V',np.abs(V))
        #Ende durch Taste "q":
        if cv2.waitKey(1) & 0xFF == ord('q'):
            break
```

- **When everything is done, then release the capture:**

```
In [4]: cap.release()
        cv2.destroyAllWindows()
```