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```python
import cv2
from cvzone.HandTrackingModule import HandDetector
from time import sleep
from pynput import keyboard
from pynput.keyboard import Controller


cap = cv2.VideoCapture(0)
cap.set(3,1280)
cap.set(4,720)

detector = HandDetector(detectionCon=0.8, maxHands=2)

keys =[["Q","W","E","R","T","Y","U","I","O","P"],
       ["A","S","D","F","G","H","J","K","L",";"],
       ["Z","X","C","V","B","N","M",",",".","/"]]

finalText =""

keyboard = Controller()

def drawALL(img,buttonList):
```

```python

   for button in buttonList:
       x,y = button.pos
       w,h = button.size
       cv2.rectangle(img, button.pos,( x+w, y+h ),(255,0,255), cv2.FILLED)
       cv2.putText(img,button.text,(x+20,y+65),
                   cv2.FONT_HERSHEY_PLAIN, 4,(255,255,255),4)
```

```
30
31      return img
32
33  class Button():
34      def __init__(self,pos, text, size = [85,85]):
35          self.pos = pos
36          self.size = size
37          self.text = text
```

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43  buttonList = []
44  for i in range(len(keys)):
45          for j, key in enumerate(keys[i]):
46              buttonList.append(Button([100*j+50,100*i+50], key))
47
48      #44.03
49
50  while True:
51      success, img = cap.read()
52      img = detector.findHands(img)
53      lmList, bboxInfo = detector.findPosition(img)
54      img = drawALL(img, buttonList)
55
```

```
56      if lmList:
57          for button in buttonList:
58              x,y=button.pos
59              w,h=button.size
60
61              if x<lmList[8][0]<x+w and y<lmList[8][1]<y+h:
62                  cv2.rectangle(img,(x-5,y-5),( x+w+5, y+h+5),(175,0,175), cv2.FILLED)
63                  cv2.putText(img,button.text,(x+20,y+65),
64                              cv2.FONT_HERSHEY_PLAIN, 4,(255,255,255),4)
65                  l,_,_ = detector.findDistance(8,12,img, draw=False)
66                  print(l)
```

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67
68                  if l<30:
69                      keyboard.press(button.text)
```

```
                    keyboard.press(button.text)
70                  cv2.rectangle(img, button.pos,( x+w, y+h ),(0,255,0), cv2.FILLED)
71                  cv2.putText(img,button.text,(x+20,y+65),
72                              cv2.FONT_HERSHEY_PLAIN, 4,(255,255,255),4)
73                  finalText+=button.text
74                  sleep(0.25)
```

```
75
76
77      cv2.rectangle(img, (50,350),(700,450),(175,0,175), cv2.FILLED)
78      cv2.putText(img,finalText,(60,425),
79                  cv2.FONT_HERSHEY_PLAIN, 5,(255,255,255),5)
80
81
82
83
84
85
86      cv2.imshow("Virtual Keyboard", img)
87      cv2.waitKey(1)
```

Github Link: