

```
In [1]: import warnings
warnings.filterwarnings("ignore")
```

```
In [2]: !pip install cvzone #Used for image processing and AI functions.
```

Defaulting to user installation because normal site-packages is not writeable

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
ERROR: Invalid requirement: '#Used'  
WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

```
In [3]: !pip install mediapipe #Used to build Pipeline to perform cv info
```

Defaulting to user installation because normal site-packages is not writeable

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WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
ERROR: Invalid requirement: '#Used'  
WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

```
In [4]: !pip install pyautogui #provides the ability to simulate mouse cursor
```

Defaulting to user installation because normal site-packages is not writeable

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
ERROR: Invalid requirement: '#provides'  
WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)  
WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

In [5]: `!pip install --upgrade protobuf`

```

Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: protobuf in c:\users\pvjad\appdata\roaming\python\python39\site-packages (3.20.3)
Collecting protobuf
  Downloading protobuf-4.23.4-cp39-cp39-win_amd64.whl (422 kB)
    ----- 422.5/422.5 kB 6.6 MB/s eta 0:0
0:00
Installing collected packages: protobuf
  Attempting uninstall: protobuf
    Found existing installation: protobuf 3.20.3
    Uninstalling protobuf-3.20.3:
      Successfully uninstalled protobuf-3.20.3
Successfully installed protobuf-4.23.4

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)
WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)
WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)
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WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
mediapipe 0.10.1 requires protobuf<4,>=3.11, but you have protobuf 4.23.4 which is incompatible.
rasa 3.5.6 requires packaging<21.0,>=20.0, but you have packaging 23.1 which is incompatible.
rasa 3.5.6 requires protobuf<3.20,>=3.9.2, but you have protobuf 4.23.4 which is incompatible.
tensorboard 2.11.2 requires protobuf<4,>=3.9.2, but you have protobuf 4.23.4 which is incompatible.
tensorflow-intel 2.11.0 requires protobuf<3.20,>=3.9.2, but you have protobuf 4.23.4 which is incompatible.
WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)
WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

```

```
In [6]: !pip install protobuf==3.20.*
```

Defaulting to user installation because normal site-packages is not writeable

Collecting protobuf==3.20.\*

Using cached protobuf-3.20.3-cp39-cp39-win\_amd64.whl (904 kB)

Installing collected packages: protobuf

Attempting uninstall: protobuf

Found existing installation: protobuf 4.23.4

Uninstalling protobuf-4.23.4:

Successfully uninstalled protobuf-4.23.4

Successfully installed protobuf-3.20.3

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.

rasa 3.5.6 requires packaging<21.0,>=20.0, but you have packaging 23.1 which is incompatible.

rasa 3.5.6 requires protobuf<3.20,>=3.9.2, but you have protobuf 3.20.3 which is incompatible.

tensorflow-intel 2.11.0 requires protobuf<3.20,>=3.9.2, but you have protobuf 3.20.3 which is incompatible.

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

```
In [7]: import cv2
import cvzone
import mediapipe as mp
from cvzone.HandTrackingModule import HandDetector
import pyautogui as auto
```

In [8]: `!pip install screen-brightness-control`

Defaulting to user installation because normal site-packages is not writeable

Requirement already satisfied: screen-brightness-control in c:\users\pvjad\appdata\roaming\python\python39\site-packages (0.21.0)

Requirement already satisfied: wmi in c:\users\pvjad\appdata\roaming\python\python39\site-packages (from screen-brightness-control) (1.5.1)

Requirement already satisfied: pywin32 in c:\programdata\anaconda3\lib\site-packages (from screen-brightness-control) (302)

WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

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WARNING: Ignoring invalid distribution - (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

WARNING: Ignoring invalid distribution -rotobuf (c:\users\pvjad\appdata\roaming\python\python39\site-packages)

In [9]: `import screen_brightness_control as scb` *#A Python tool for controlling*  
`import numpy as np`

```

In [10]: cap=cv2.VideoCapture(0)                                #shows video from the webcam.
          hd=HandDetector(maxHands=1)                          #Detects a single hand from an input

while 1:
    ret,frame = cap.read()                                     #Captures frame by frame.
    frame = cv2.resize(frame, (1080, 730))                    #Resize the frame.
    #print(frame.shape)
    cvzone.putTextRect(frame,'Google Dino Game Control by Hand Gesture',[165,

    hand,frame = hd.findHands(frame)                           #detects hand from frame

    if hand:
        hands=hand[0]
        lmList=hands['lmList']                                #Detects the finger poin

        length,info,frame=hd.findDistance(lmList[4][0:2],lmList[8][0:2],frame)
        length=round(length)
        print(length)

        if length < 45:
            auto.press('space')

    cv2.imshow('frame',frame)
    if cv2.waitKey(1) & 0xFF == ord('q'):                      #To Leaveout from the w
        break
cap.release()
cv2.destroyAllWindows()

```

217  
236  
212  
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In [11]: `!python --version`

Python 3.9.13

```

In [12]: cap=cv2.VideoCapture(0)
hd=HandDetector(maxHands=1)

val = 0

while 1:
    ret,frame = cap.read()
    frame = cv2.resize(frame, (1080, 730))
    #print(frame.shape)

    cvzone.putTextRect(frame,'Brightness control by hand Gesture',[165,40],sc

    hand,frame = hd.findHands(frame)

    if hand:
        hands=hand[0]
        lmList=hands['lmList']

        length,info,frame=hd.findDistance(lmList[4][0:2],lmList[8][0:2],frame)
        lenght=round(length)
        #print(length)

        ###for controlling the brigtness of the laptop###
        blevel = np.interp(length,[50,300],[0,100]) #brightnesspercentage
        val = np.interp(length, [50, 300],[400,150]) #brightnessbar
        blevel = int(blevel)
        print(blevel)
        print(val)

        scb.set_brightness(blevel)

        cv2.rectangle(frame,(20,150),(85,400),(0,255,255),4)
        cv2.rectangle(frame, (20, int(val)), (85, 400), (0, 0, 255), -1)
        cv2.putText(frame,str(blevel)+'%',(20,430),cv2.FONT_HERSHEY_COMPLEX,1

    cv2.imshow('frame',frame)
    if cv2.waitKey(1) & 0xFF == ord('q'):
        break
cap.release()
cv2.destroyAllWindows()

```

62  
243.3069909261564  
86  
183.20982027068538  
80  
197.52029784554958  
83  
191.41152384531904  
85  
187.09127058996313  
87  
180.21490033732402  
90  
174.16490433594203  
92  
168.81322932968556  
93  
167.31112508625318  
94  
164.35105014065517

In [ ]: