

LAMPIRAN A

Listing Program

```
import cv2
import pigpio
import time
import math

fire_cascade = cv2.CascadeClassifier('fire_detection.xml')
cap = cv2.VideoCapture(0)

pi = pigpio.pi()

def servoPos(pos) :
    dutyStart = 500
    dutyStop = 2400

    duty = dutyStart + ((pos/180)*(dutyStop-dutyStart))
    if duty > 500 and duty < 24000 :
        pi.set_servo_pulsewidth(25, duty)

def fireFight(status) :
    if status :
        pi.write(14, 1)
        pi.write(15, 1)
    else :
        pi.write(14, 0)
        pi.write(15, 0)

position = 90
increase = True
servoPos(position)

isFireDetected = False
fireNotDetectedCount = 0
fireX = 0
```

```
fireY = 0
```

```
while(True):
```

```
    ret, frame = cap.read()
```

```
    height, width, _ = frame.shape
```

```
    gray = cv2.cvtColor(frame, cv2.COLOR_BGR2GRAY)
```

```
    fireList = fire_cascade.detectMultiScale(frame, 1.2, 5)
```

```
    if len(fireList) :
```

```
        (x,y,w,h) = fireList[0]
```

```
        cv2.rectangle(frame,(x-20,y-20),(x+w+20,y+h+20),(255,0,0),2)
```

```
        isFireDetected = True
```

```
        fireX = x
```

```
        fireY = y
```

```
        fireNotDetectedCount = 0
```

```
    else :
```

```
        if fireNotDetectedCount > 50 :
```

```
            isFireDetected = False
```

```
        else :
```

```
            fireNotDetectedCount
```

```
=
```

```
fireNotDetectedCount + 1
```

```
    if isFireDetected :
```

```
        if(x < (math.ceil(width/2)-5.)) :
```

```
            if position > 0 :
```

```
                position = position - 0.25
```

```
        elif(x > (math.ceil(width/2)+5.)) :
```

```
            if position < 180 :
```

```
                position = position + 0.25
```

```
        else :
```

```
            fireFight(True)
```

```
            time.sleep(1)
```

```
    else :
```

```
        fireFight(False)
```

```
        if increase and position >= 180 :
```

```
        increase = False
    elif not(increase) and position <= 0 :
        increase = True
    if(increase) :
        position = position + 0.5
    else :
        position = position - 0.5

servoPos(position)

cv2.imshow('frame', frame)

if cv2.waitKey(1) & 0xFF == ord('q'):
    break
```

BIODATA PENULIS



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SDIT Al Munir	-	2008-2014
SMPN 3 Tambun Selatan	-	2014-2017
SMAS Jaya Suti	IPA	2017-2020
Politeknik Negeri Cilacap	Teknik Elektronika	2020-2023

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