



**Tecnológico
de Monterrey**

Visión para Robots

Tarea 04:

“7 Segmentos”

Kennia Jackeline Sánchez Castillo A00517129

Profe. Braian Rodriguez

Monterrey, Nuevo León

13 de Mayo, 2024

Instrucciones:

Escribe un programa de en Sherlock que analice las imágenes de visualización de un 7 segmentos incluidas en este archivo zip, (Incluye programa ya iniciado, ya que se requiere hacer la conversión de las imágenes a color a escala de grises.).

Tres resultados son posibles:

- ➔ 1. La pantalla está apagada; en cuyo caso deberá escribir “Off” en la pantalla.
- ➔ 2. La pantalla muestra un valor correcto; en cuyo caso debe dar el valor que se muestra en la pantalla.
- ➔ 3. Los segmentos de la pantalla están encendidos y dan un número incorrecto para este caso, escriba “Segmentos quemados” en la pantalla.

Convierta cada imagen de RGB a escala de grises dentro de Sherlock. Use herramientas de alineación para rastrear la pantalla de 7 segmentos.

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

Program Edit View Run Image window Options Window Help

Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgB: MONO8 1024x768 - From: imgA

Numero: 8

Monitor

Name	Message	Context
LineF	0.03 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.01 ms	Main : LineG.Detect Edges
LineG	0.03 ms	Main : LineG
scriptA	0.06 ms	Main : scriptA
Texto	0.01 ms	Main : Texto
Display	1.68 ms	
End	3.29 ms	Main : End
Run total	50.56 ms	
Autosave	21:31:18	

www.teledynedatata.com/ipd For Help, press F1

Program

```
Main
- imgA
- update display (True)
- acq time
- acq status
- Begin
- ROI Entero
- ROI Entero.Threshold
- ROI Entero.Connectivity - Binary
- ROI Entero.Connectivity - Binary
- LineA
- LineB
- LineC
- LineD
- LineE
- LineF
- LineG
- scriptA
- Texto
- End
```

Variables

Name	Value	Comment
N A	1.00	
N B	1.00	
N C	1.00	
N D	1.00	
N E	1.00	
N F	1.00	
N G	1.00	
S Display	Numero: 8	

Watch Variables

50 ms | 9.0MB | RAD | CAP | NUM | SCRL

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

Program Edit View Run Image window Options Window Help

Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgB: MONO8 1024x768 - From: imgA

Numero: 2

Monitor

Name	Message	Context
Detect Ed...	0.01 ms	Main : LineF.Detect Edges
LineF	0.02 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.01 ms	Main : LineG.Detect Edges
LineG	0.03 ms	Main : LineG
scriptA	0.25 ms	Main : scriptA
Texto	0.03 ms	Main : Texto
Display	1.92 ms	
End	3.24 ms	Main : End
Run total	51.03 ms	

www.teledynedatata.com/ipd For Help, press F1

Program

```
Main
- imgA
- update display (True)
- acq time
- acq status
- Begin
- ROI Entero
- ROI Entero.Threshold
- ROI Entero.Connectivity - Binary
- ROI Entero.Connectivity - Binary
- LineA
- LineB
- LineC
- LineD
- LineE
- LineF
- LineG
- scriptA
- Texto
- End
```

Variables

Name	Value	Comment
N A	1.00	
N B	1.00	
N C	0.00	
N D	1.00	
N E	1.00	
N F	0.00	
N G	1.00	
S Display	Numero: 2	

Watch Variables

51 ms | 9.0MB | RAD | CAP | NUM | SCRL

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

Program Edit View Run Image window Options Window Help

Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgB: MONO8 1024x768 - From: imgA

Numero: 6

Monitor

Name	Message	Context
Detect Ed...	0.15 ms	Main : LineF.Detect Edges
LineF	1.06 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.03 ms	Main : LineG.Detect Edges
LineG	0.72 ms	Main : LineG
scriptA	0.04 ms	Main : scriptA
Texto	0.01 ms	Main : Texto
Display	1.41 ms	Main : End
End	1.64 ms	
Run total	49.39 ms	

www.teledynedatata.com/tpd For Help, press F1

49 ms | 9.0MB | RAD | CAP | NUM | SCRL

Program

Main

- imgA
- imgB
- update display (True)
- acq time
- acq status
- Begin
- ROI Entero
- ROI Entero.Threshold
- ROI Entero.Connectivity - Binary
- ROI Entero.Connectivity - Binary
- LineA
- LineB
- LineC
- LineD
- LineE
- LineF
- LineG
- scriptA
- Texto
- End

Variables

Name	Value	Comment
N A	1.00	
N B	0.00	
N C	1.00	
N D	1.00	
N E	1.00	
N F	1.00	
N G	1.00	
S Display	Numero: 6	

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

Program Edit View Run Image window Options Window Help

Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.viv*

imgB: MONO8 1024x768 - From: imgA

OFF

Monitor

Name	Message	Context
Detect Ed...	0.02 ms	Main : LineF.Detect Edges
LineF	0.03 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.01 ms	Main : LineG.Threshold
Detect Ed...	0.01 ms	Main : LineG.Detect Edges
LineG	0.02 ms	Main : LineG
scriptA	0.05 ms	Main : scriptA
Texto	0.01 ms	Main : Texto
Display	1.43 ms	Main : End
End	2.36 ms	
Run total	44.45 ms	

www.teledynedatata.com/tpd For Help, press F1

44 ms | 9.0MB | RAD | CAP | NUM | SCRL

Program

Main

- imgA
- imgB
- update display (True)
- acq time
- acq status
- Begin
- ROI Entero
- ROI Entero.Threshold
- ROI Entero.Connectivity - Binary
- ROI Entero.Connectivity - Binary
- LineA
- LineB
- LineC
- LineD
- LineE
- LineF
- LineG
- scriptA
- Texto
- End

Variables

Name	Value	Comment
N A	0.00	
N B	0.00	
N C	0.00	
N D	0.00	
N E	0.00	
N F	0.00	
N G	0.00	
S Display	OFF	

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

Program Edit View Run Image window Options Window Help

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

imgB: MONO8 1024x768 - From: imgA

Segmentos Quemados

Monitor

Name	Message	Context
Detect Ed...	0.02 ms	Main : LineF.Detect Edges
LineF	0.06 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.02 ms	Main : LineG.Detect Edges
LineG	0.06 ms	Main : LineG
scriptA	0.07 ms	Main : scriptA
Texto	0.01 ms	Main : Texto
Display	1.65 ms	Main : End
End	2.74 ms	
Run total	51.21 ms	

www.teledynedatata.com/ipd For Help, press F1

51 ms | 9.0MB | RAD | CAP | NUM | SCRL

Program

```
Main
imgA
imgB
  update display (True)
  acq time
  acq status
  Begin
  ROI Entero
    ROI Entero.Threshold
    ROI Entero.Connectivity - Binary
  LineA
  LineB
  LineC
  LineD
  LineE
  LineF
  LineG
  scriptA
  Texto
  End
```

Variables

Name	Value	Comment
N A	0.00	
N B	0.00	
N C	1.00	
N D	1.00	
N E	0.00	
N F	1.00	
N G	1.00	
S	Display	Segmentos Qu...

Watch Variables

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

Program Edit View Run Image window Options Window Help

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

imgB: MONO8 1024x768 - From: imgA

Numero: 3

Monitor

Name	Message	Context
Detect Ed...	0.15 ms	Main : LineF.Detect Edges
LineF	0.35 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.03 ms	Main : LineG.Detect Edges
LineG	0.07 ms	Main : LineG
scriptA	0.16 ms	Main : scriptA
Texto	0.01 ms	Main : Texto
Display	1.10 ms	Main : End
End	1.48 ms	
Run total	42.99 ms	

www.teledynedatata.com/ipd For Help, press F1

42 ms | 9.0MB | RAD | CAP | NUM | SCRL

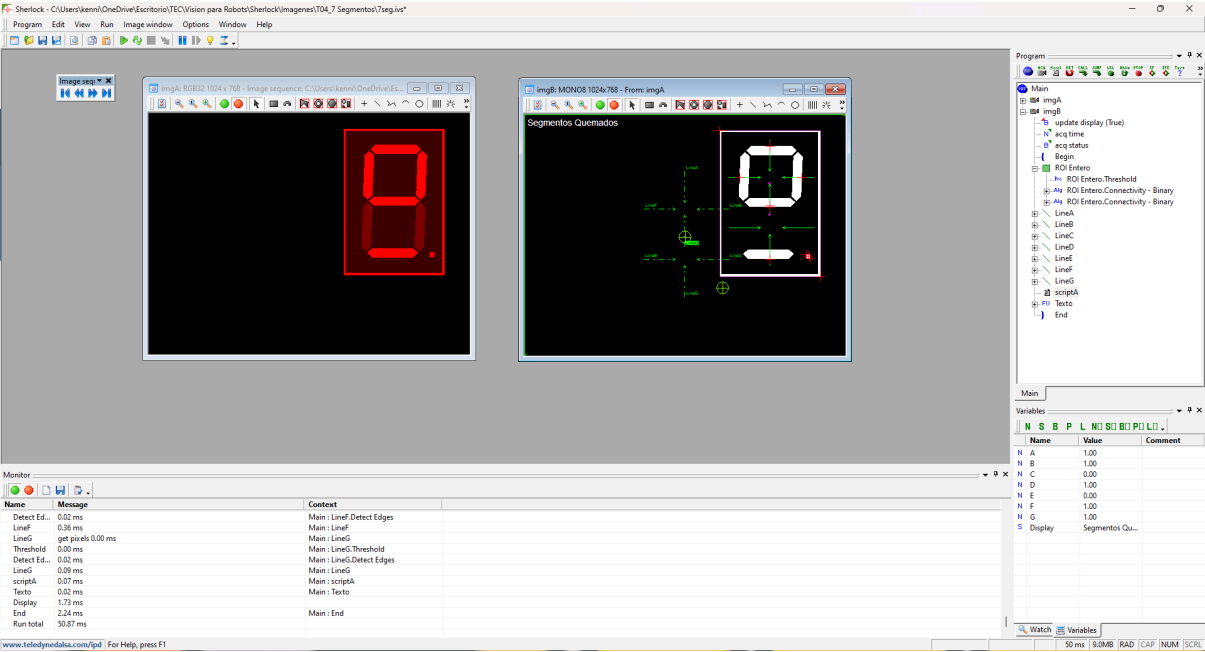
Program

```
Main
imgA
imgB
  update display (True)
  acq time
  acq status
  Begin
  ROI Entero
    ROI Entero.Threshold
    ROI Entero.Connectivity - Binary
  LineA
  LineB
  LineC
  LineD
  LineE
  LineF
  LineG
  scriptA
  Texto
  End
```

Variables

Name	Value	Comment
N A	1.00	
N B	1.00	
N C	1.00	
N D	1.00	
N E	0.00	
N F	0.00	
N G	1.00	
S	Display	Numero: 3

Watch Variables



Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

Program Edit View Run Image window Options Window Help

image seq. xk

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Es...

imgB: MONO8 1024x768 - From: imgA

Numero: 1

Program

```
Main
  imgA
  imgB
  update display (True)
  acq time
  acq status
  Begin
    ROI Entero
    ROI Entero.Threshold
    ROI Entero.Connectivity - Binary
    ROI Entero.Connectivity - Binary
    LineA
    LineB
    LineC
    LineD
    LineE
    LineF
    LineG
    scriptA
    Texto
  End
```

Variables

N	S	B	P	L	N	B	L	B	P	L	L
N	A										
N	B										
N	C										
N	D										
N	E										
N	F										
N	G										
S	Display										Numero: 1

Monitor

Name	Message	Context
Detect Ed...	0.01 ms	Main : LineF.Detect Edges
LineF	0.02 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.01 ms	Main : LineG.Detect Edges
LineG	0.02 ms	Main : LineG
scriptA	0.05 ms	Main : scriptA
Texto	0.01 ms	Main : Texto
Display	1.22 ms	Main : End
End	2.16 ms	
Run total	51.32 ms	

www.teledynedatata.com/ipd For Help, press F1

51 ms | 9.0MB | RAD | CAP | NUM | SCRL

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

Program Edit View Run Image window Options Window Help

image seq. xk

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Es...

imgB: MONO8 1024x768 - From: imgA

Numero: 0

Program

```
Main
  imgA
  imgB
  update display (True)
  acq time
  acq status
  Begin
    ROI Entero
    ROI Entero.Threshold
    ROI Entero.Connectivity - Binary
    ROI Entero.Connectivity - Binary
    LineA
    LineB
    LineC
    LineD
    LineE
    LineF
    LineG
    scriptA
    Texto
  End
```

Variables

N	S	B	P	L	N	B	L	B	P	L	L
N	A										
N	B										
N	C										
N	D										
N	E										
N	F										
N	G										
S	Display										Numero: 0

Monitor

Name	Message	Context
Detect Ed...	0.02 ms	Main : LineF.Detect Edges
LineF	0.05 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.01 ms	Main : LineG.Detect Edges
LineG	0.04 ms	Main : LineG
scriptA	0.12 ms	Main : scriptA
Texto	0.02 ms	Main : Texto
Display	2.07 ms	Main : End
End	4.05 ms	
Run total	57.97 ms	

www.teledynedatata.com/ipd For Help, press F1

57 ms | 9.0MB | RAD | CAP | NUM | SCRL

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

Program Edit View Run Image window Options Window Help

image.seq

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Es...

imgB: MONO8 1024x768 - From: imgA

Numero: 4

Program

```
Main
imgA
  update display (True)
  acq time
  acq status
  Begin
  ROI Entero
    ROI Entero.Threshold
    ROI Entero.Connectivity - Binary
    ROI Entero.Connectivity - Binary
  LineA
  LineB
  LineC
  LineD
  LineE
  LineF
  LineG
  scriptA
  Texto
  End
```

Variables

N	S	B	P	L	N	B	L	B	P	L	L
N	A										
N	B										
N	C										
N	D										
N	E										
N	F										
N	G										
S	Display										Numero: 4

Monitor

Name	Message	Context
Detect Ed...	0.09 ms	Main : LineF.Detect Edges
LineF	0.29 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.01 ms	Main : LineG.Threshold
Detect Ed...	0.33 ms	Main : LineG.Detect Edges
LineG	1.68 ms	Main : LineG
scriptA	0.88 ms	Main : scriptA
Texto	0.03 ms	Main : Texto
Display	2.15 ms	Main : End
End	4.34 ms	
Run total	32.89 ms	

www.teledynedatata.com/ipd For Help, press F1

52 ms 9.0MB RAD CAP NUM SCRL

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TECVision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7seg.jpg

Program Edit View Run Image window Options Window Help

image.seq

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Es...

imgB: MONO8 1024x768 - From: imgA

Numero: 5

Program

```
Main
imgA
  update display (True)
  acq time
  acq status
  Begin
  ROI Entero
    ROI Entero.Threshold
    ROI Entero.Connectivity - Binary
    ROI Entero.Connectivity - Binary
  LineA
  LineB
  LineC
  LineD
  LineE
  LineF
  LineG
  scriptA
  Texto
  End
```

Variables

N	S	B	P	L	N	B	L	B	P	L	L
N	A										
N	B										
N	C										
N	D										
N	E										
N	F										
N	G										
S	Display										Numero: 5

Monitor

Name	Message	Context
Detect Ed...	0.01 ms	Main : LineF.Detect Edges
LineF	0.02 ms	Main : LineF
LineG	get pixels 0.00 ms	Main : LineG
Threshold	0.00 ms	Main : LineG.Threshold
Detect Ed...	0.01 ms	Main : LineG.Detect Edges
LineG	0.02 ms	Main : LineG
scriptA	0.09 ms	Main : scriptA
Texto	0.01 ms	Main : Texto
Display	1.01 ms	Main : End
End	1.70 ms	
Run total	44.20 ms	

www.teledynedatata.com/ipd For Help, press F1

xc00740 y00678 pix:000,000,000 52 ms 9.0MB RAD CAP NUM SCRL

Sherlock - C:\Users\kenn\OneDrive\Escritorio\TEC\Vision para Robots\Sherlock\Imagenes\T04_7 Segmentos\7segvis*

Program Edit View Run Image window Options Window Help

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Es...

imgB: MONO8 1024x768 - From: imgA

imgA: RGB32 1024 x 768 - Image sequence: C:\Users\kenn\OneDrive\Es...

imgB: MONO8 1024x768 - From: imgA

Program

Main

imgA

imgB

update display (True)

acq time

acq status

Begin

ROI Entero

ROI Entero.Threshold

ROI Entero.Connectivity - Binary

ROI Entero.Connectivity - Binary

LineA

LineB

LineC

LineD

LineE

LineF

LineG

scriptA

TextA

End

Monitor

Name Message Context

Detect Ed... 0.01 ms Main : LineF.Detect Edges

LineF 0.02 ms Main : LineF

LineG get pixels 0.00 ms Main : LineG

Threshold 0.00 ms Main : LineG.Threshold

Detect Ed... 0.01 ms Main : LineG.Detect Edges

LineG 0.02 ms Main : LineG

scriptA 0.04 ms Main : scriptA

TextA 0.01 ms Main : TextA

Display 1.09 ms Main : End

End 1.35 ms

Run total 42.39 ms

Variables

Name Value Comment

N A 0.00

N B 1.00

N C 1.00

N D 1.00

N E 0.00

N F 0.00

N G 0.00

S Display Segmentos Qu...

Watch Variables

x:20482 y:20712 pic:000,000,000 42 ms 9.0MB RAD CAP NUM SCRL