

TAREA N° 1

Mini-Control 1

Recuperación de Información Multimedia

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Pregunta 1:

Imagen A:

0	100	0	0	0	100
100	0	100	0	100	0
0	0	0	100	0	0
100	0	100	0	100	0
0	100	0	0	0	100

Kernel K:

1	-1	1
-1	1	-1
1	-1	1

Resultado de la convolución:

-300	300	-300	300
400	-300	500	-300
-300	300	-300	300

Imagen B con filtro de mediana:

0	0	0	0	0	0	0	0	0
0	255	0	0	0	0	0	255	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	255	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

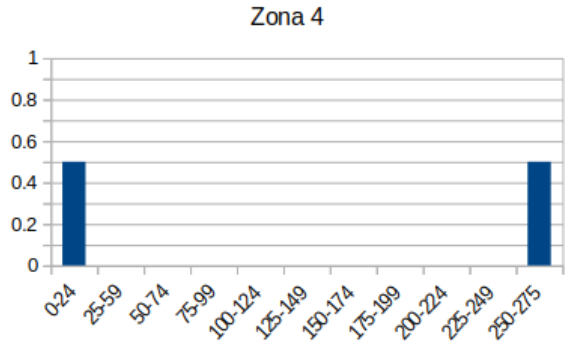
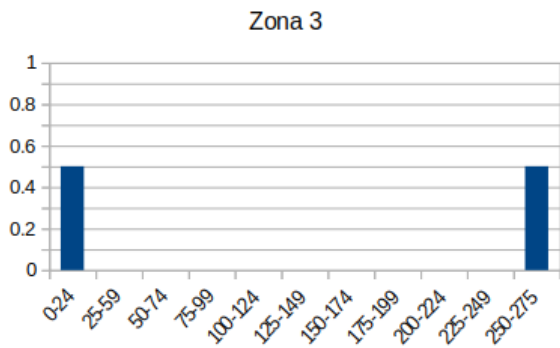
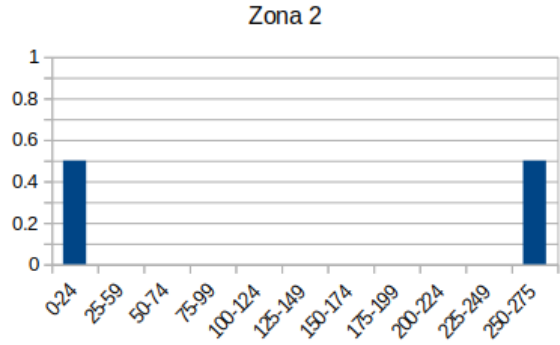
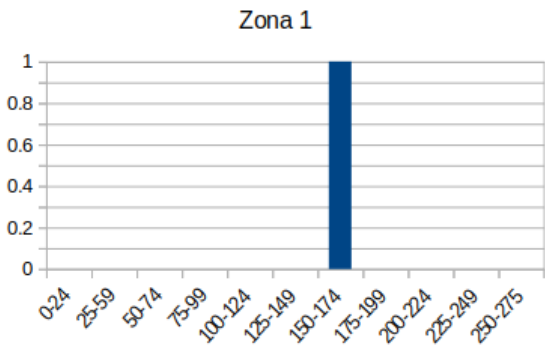
Observaciones:

Pregunta 3:

Imagen con valores de escala de grises (8 bits):

128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
128	128	128	128	128	128	128	128	255	0	255	0	255	0	255	0
255	0	255	0	255	0	255	0	255	255	255	255	255	255	255	255
0	255	0	255	0	255	0	255	0	0	0	0	0	0	0	0
255	0	255	0	255	0	255	0	255	255	255	255	255	255	255	255
0	255	0	255	0	255	0	255	0	0	0	0	0	0	0	0
255	0	255	0	255	0	255	0	255	255	255	255	255	255	255	255
0	255	0	255	0	255	0	255	0	0	0	0	0	0	0	0
255	0	255	0	255	0	255	0	255	255	255	255	255	255	255	255
0	255	0	255	0	255	0	255	0	0	0	0	0	0	0	0
255	0	255	0	255	0	255	0	255	255	255	255	255	255	255	255
0	255	0	255	0	255	0	255	0	0	0	0	0	0	0	0

Histograma de escala de grises en cada zona (2x2):



Pregunta 5:

Gradiente en eje x:

0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
0	0	0	0	0	0	0	127	-255	255	-255	255	-255	255	-255
-255	255	-255	255	-255	255	-255	255	0	0	0	0	0	0	0
255	-255	255	-255	255	-255	255	-255	0	0	0	0	0	0	0
-255	255	-255	255	-255	255	-255	255	0	0	0	0	0	0	0
255	-255	255	-255	255	-255	255	-255	0	0	0	0	0	0	0
-255	255	-255	255	-255	255	-255	255	0	0	0	0	0	0	0
255	-255	255	-255	255	-255	255	-255	0	0	0	0	0	0	0
-255	255	-255	255	-255	255	-255	255	0	0	0	0	0	0	0
255	-255	255	-255	255	-255	255	-255	0	0	0	0	0	0	0

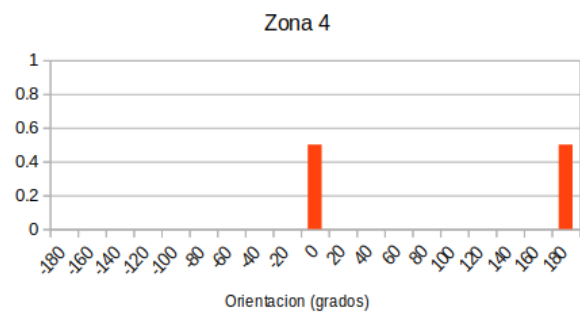
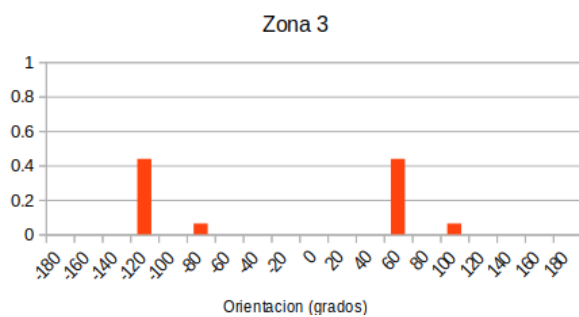
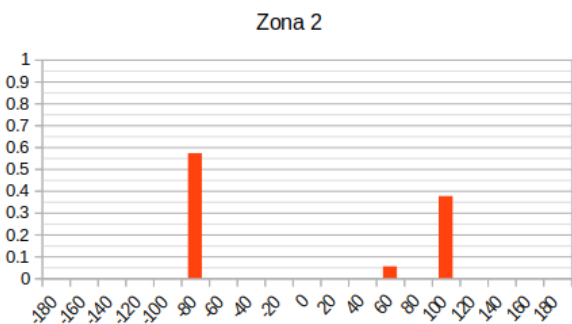
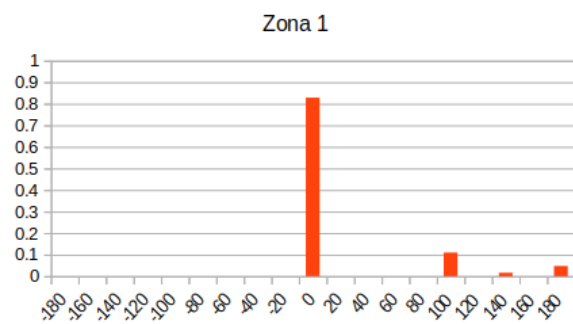
Gradiente en eje y:

[illegible]

Orientación (ángulo en grados)

0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	0	0	0	0	0	0	90	-90	90	-90	90	-90	90	-90
0	180	0	180	0	180	0	135.2	-90	45	-90	45	-90	45	-90
-135	45	-135	45	-135	45	-135	45	180	180	180	180	180	180	180
45	-135	45	-135	45	-135	45	-135	0	0	0	0	0	0	0
-135	45	-135	45	-135	45	-135	45	180	180	180	180	180	180	180
45	-135	45	-135	45	-135	45	-135	0	0	0	0	0	0	0
-135	45	-135	45	-135	45	-135	45	180	180	180	180	180	180	180
45	-135	45	-135	45	-135	45	-135	0	0	0	0	0	0	0
-135	45	-135	45	-135	45	-135	45	180	180	180	180	180	180	180
90	-90	90	-90	90	-90	90	-90	0	0	0	0	0	0	0

Histograma de orientaciones por zona (2x2):



Pregunta 6:

$\begin{bmatrix} 1 & -1 \\ 1 & -1 \end{bmatrix}$	$\begin{bmatrix} 1 & 1 \\ -1 & -1 \end{bmatrix}$	$\begin{bmatrix} \sqrt{2} & 0 \\ 0 & -\sqrt{2} \end{bmatrix}$	$\cdot \begin{bmatrix} 0 & \sqrt{2} \\ -\sqrt{2} & 0 \end{bmatrix}$	$\begin{bmatrix} 2 & -2 \\ -2 & 2 \end{bmatrix}$
bin 1	bin 2	bin 3	bin 4	bin 5

Bin 1

1	-1
1	-1

0	0	0	0	510	510	510	510
0	0	0	0	510	510	510	510
0	0	0	0	510	510	510	510
0	0	0	0	510	510	510	510
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Bin 2

1	1
-1	-1

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	510	510	510	510
0	0	0	0	510	510	510	510
0	0	0	0	510	510	510	510
0	0	0	0	510	510	510	510

Bin 3

1.41421	0
0	-1.41

0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6

Bin 4

0	1.41
-1.4142	0

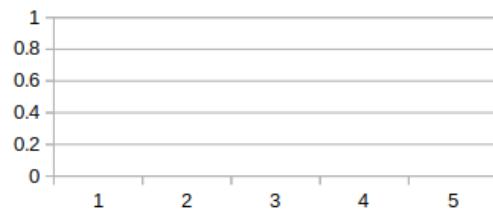
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6
0	0	0	0	360.6	360.6	360.6	360.6

Bin 5

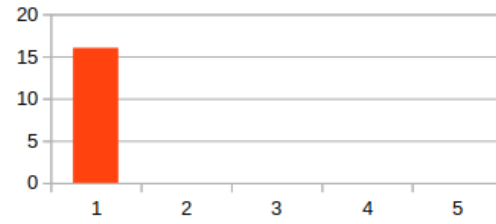
2	-2
-2	2

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1020	1020	1020	1020	0	0	0	0
1020	1020	1020	1020	0	0	0	0
1020	1020	1020	1020	0	0	0	0
1020	1020	1020	1020	0	0	0	0

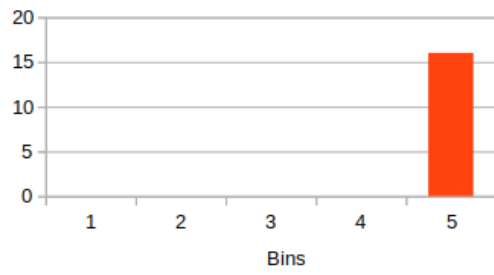
Zona 1



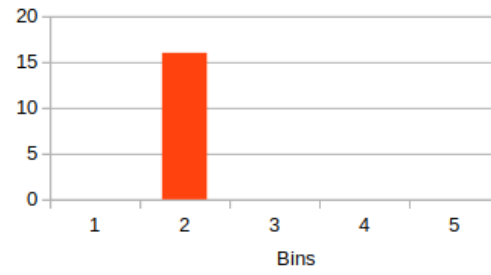
Zona 2



Zona 3



Zona 4



Pregunta 7:

Histogramas:

H1:

Bin1	250	150	0
Bin2	100	100	150

H2:

Bin1	50	100	250
Bin2	200	200	250
Bin3	250	0	0

Matriz de Distancias:

	Bin1	Bin2
Bin1	500	150
Bin2	350	300
Bin3	150	400

Matriz de Flujos:

	0.8	0.2	Sum
0.3	0.1	0.2	0.3
0.6	0.6	0	0.6
0.1	0.1	0	0.1
Sum	0.8	0.2	

Componentes matriz EDM y valor EDM:

50	30
210	0
15	0

EMD	305
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