



INSTITUTO POLITÉCNICO NACIONAL

UNIDAD PROFESIONAL INTERDISCIPLINARIA DE
INGENIERÍA Y TECNOLOGÍAS AVANZADAS



CARRERA: INGENIERÍA TELEMÁTICA

UNIDAD DE APRENDIZAJE: MULTIMEDIA

Practica 3 :Filtro Blanco y Negro

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FECHA: 16/02/26

GRUPO: 3TM2

Filtro blanco y negro:

The screenshot shows a Jupyter Notebook cell with the following code:

```
#Binary filter: Black and White

file = open('./images/volcan.bmp', 'rb')
fileo = open('./images/volcan_BW.bmp', 'wb')
metadata = file.read(54)
fileo.write(metadata)
blanco = [0xff,0xff,0xff]
negro = [0x00,0x00,0x00]

file.seek(54,0)
no_pix = 0
limite = (pow(2, 24)-1)/2
while(True):
    pixel_data = file.read(3)
    if(len(pixel_data) > 0):
        valor_int = int.from_bytes(bytes(pixel_data),byteorder='little')
        if(valor_int>limite):
            fileo.write(bytes(blanco))
        else:
            fileo.write(bytes(negro))
        no_pix += 1
    else:
        break
print('No Pixels: '+str(no_pix))
file.close()
fileo.close()

... No Pixels: 2457600
```

To the right of the code is a preview window titled "volcan_BW.bmp" showing a grayscale version of the volcano image.

Filtro Negro y Blanco:

The screenshot shows a Jupyter Notebook cell with the following code:

```
#Binary filter: White and Black

file = open('./images/volcan.bmp', 'rb')
fileo = open('./images/volcan_WB.bmp', 'wb')
metadata = file.read(54)
fileo.write(metadata)
negro = [0xff,0xff,0xff]
blanco = [0x00,0x00,0x00]

file.seek(54,0)
no_pix = 0
limite = (pow(2, 24)-1)/2
while(True):
    pixel_data = file.read(3)
    if(len(pixel_data) > 0):
        valor_int = int.from_bytes(bytes(pixel_data),byteorder='little')
        if(valor_int<limite):
            fileo.write(bytes(blanco))
        else:
            fileo.write(bytes(negro))
        no_pix += 1
    else:
        break
print('No Pixels: '+str(no_pix))
file.close()
fileo.close()

... No Pixels: 2457600
```

To the right of the code is a preview window titled "volcan_WB.bmp" showing a grayscale version of the volcano image.

Imagen de Example001.bmp con el filtro aplicado



The screenshot shows a code editor interface with three main sections: a file browser, a code editor, and a terminal or preview window.

File Browser: Shows a tree view of files under 'Archivos'. The 'Images' folder contains 'example001.bmp', 'example001bin.bmp', 'volcan (1).bmp', and 'volcan (1)bin.bmp'. A 'sample_data' folder is also present.

Code Editor: Displays the following Python script:

```
#Binary filter: Black and white

file = open('./Images/example001.bmp', 'rb')
file.seek(54)
metadata = file.read(54)
file.write(metadata)
blanco = [0xff,0xff,0xff]
negro = [0x00,0x00,0x00]

file.seek(54,0)
no_pix = 0
limite = (pow(2, 24)-1)/2
while True:
    pixel_data = file.read(1)
    if len(pixel_data) > 0:
        valor_int = int.from_bytes(bytes(pixel_data),byteorder='little')
        if(valor_int>limite):
            file.write(bytes(blanco))
        else:
            file.write(bytes(negro))
        no_pix += 1
    else:
        break
print('No Pixels: '+str(no_pix))
file.close()
file.close()
```

Terminal/Preview: Shows the output 'No Pixels: 256' and two file icons: 'example001.bmp' and 'example001bin.bmp'.