

MES를 활용한 Smart Factory

- Video processing program

Subject 시각화 프로그래밍

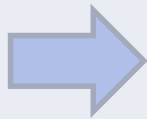
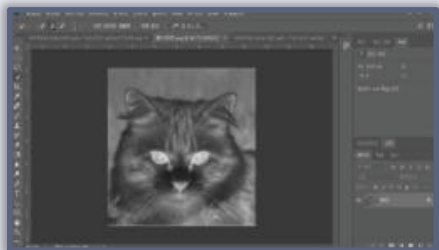
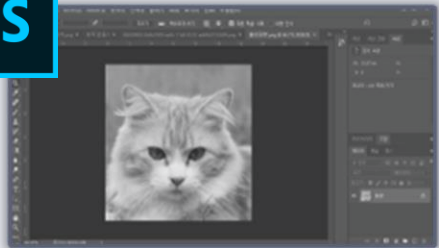
Name 김혜수

INSTRUCTIONS

- PROJECT SUMMARY
- C#과 선풍기(avr) 연동
- VIDEO PROCESSING
- 현재 진행중인 프로젝트(축산)

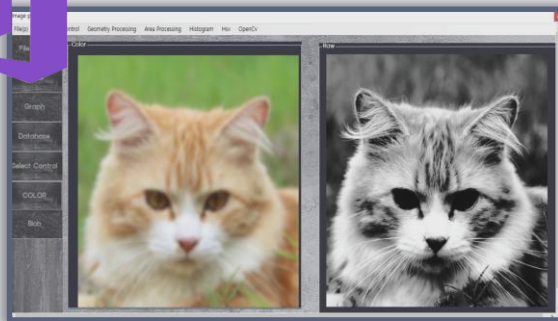
PROJECT SUMMARY

Ps



Photoshop inspiration

개발환경 : VS 2017



LAYOUT

Form

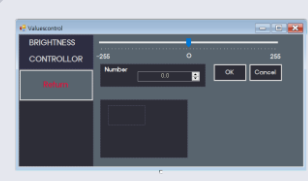
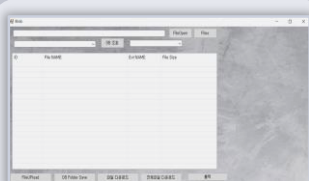
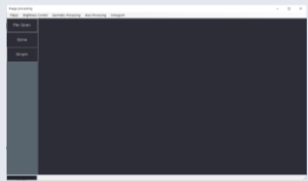
mainform(Main)

Mysqlcon(Mysql)

Blob(Mysql)

SelectColorChange

Vauescontrol(Sub)



LAYOUT – Main Form 설정

자주 쓰는 **Method**를
바로 사용할 수 있게
Button 생성

Open File – 파일열기

Same – 동일영상

Graph – 그래프 표현

DataBase – DB 연결

Select Control – 부분 변환

Raw & Color

Blob – 대용량 image file

SatusStrip Tool
사용으로 업로드된
pictureBox의 Size
표현

Program menu화

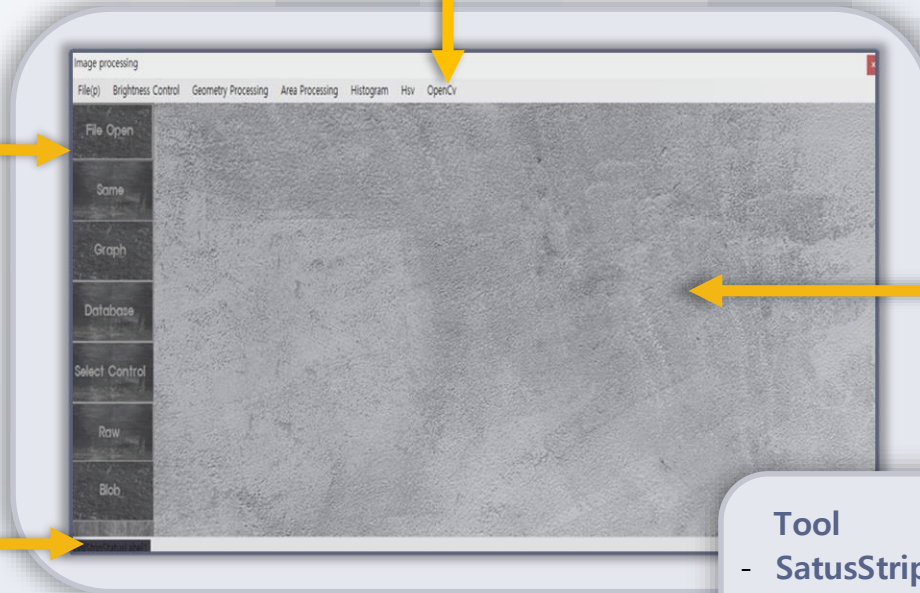


Image input output
Display

Tool

- SatusStrip - stsStrip
- OpenFileDialog - ofdFile
- SaveFileDialog - sfdFile
- MenuStrip – MenuStrip1

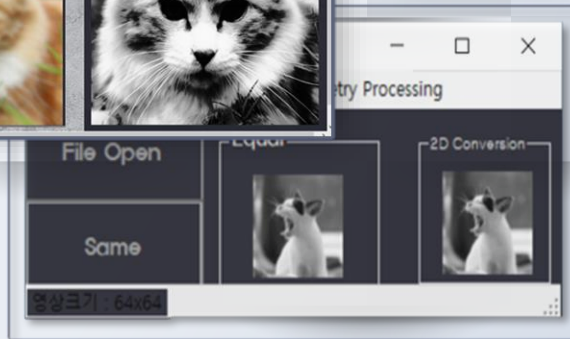
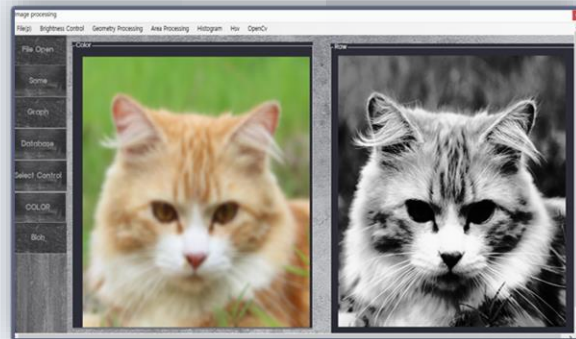
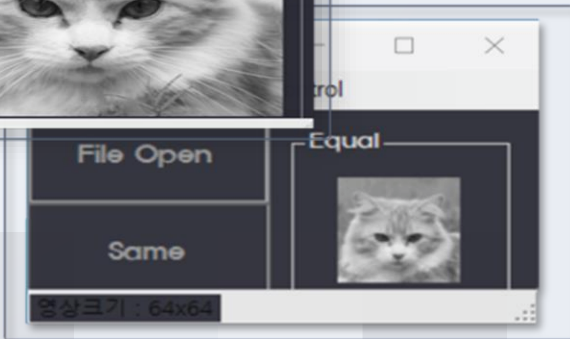
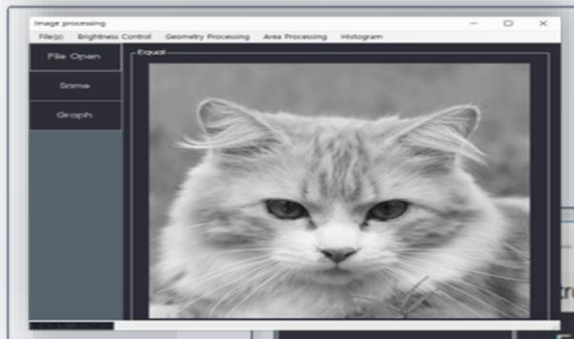
LAYOUT – Main Form 화면 동작(File Open)



File Open

File Open 시 각 사이즈에 맞게
GroupBox & **pictureBox** 지정

CLICK 시 COLOR OR RAW
이미지에 맞는 변환 출력



LAYOUT – Main Form 화면 동작(graph)

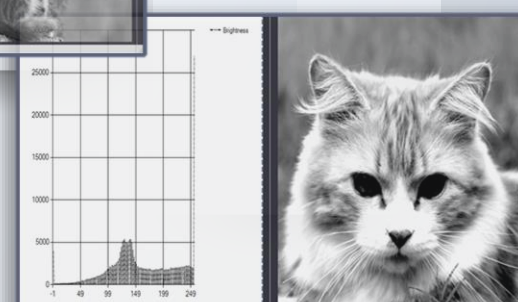
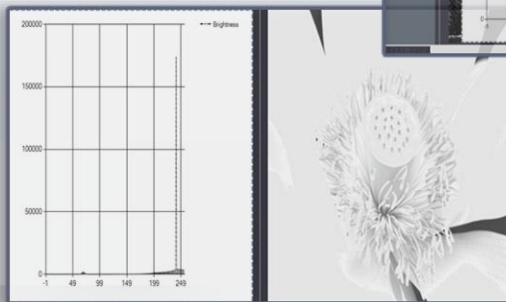
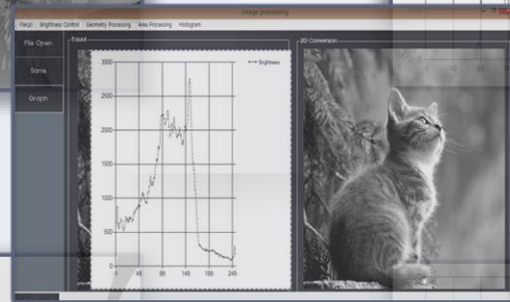
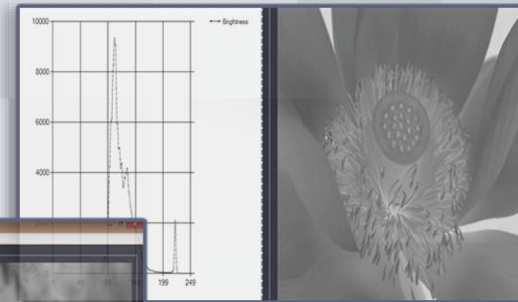
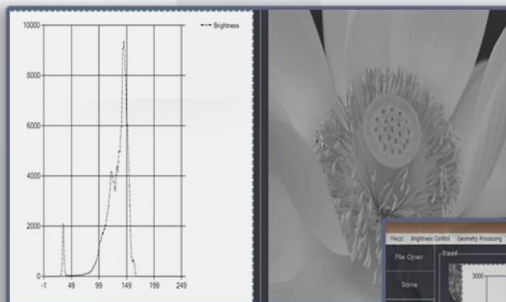


Graph

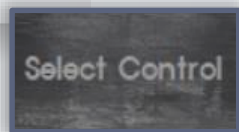


Graph Button On 시
사진 변경마다 그래프 동작

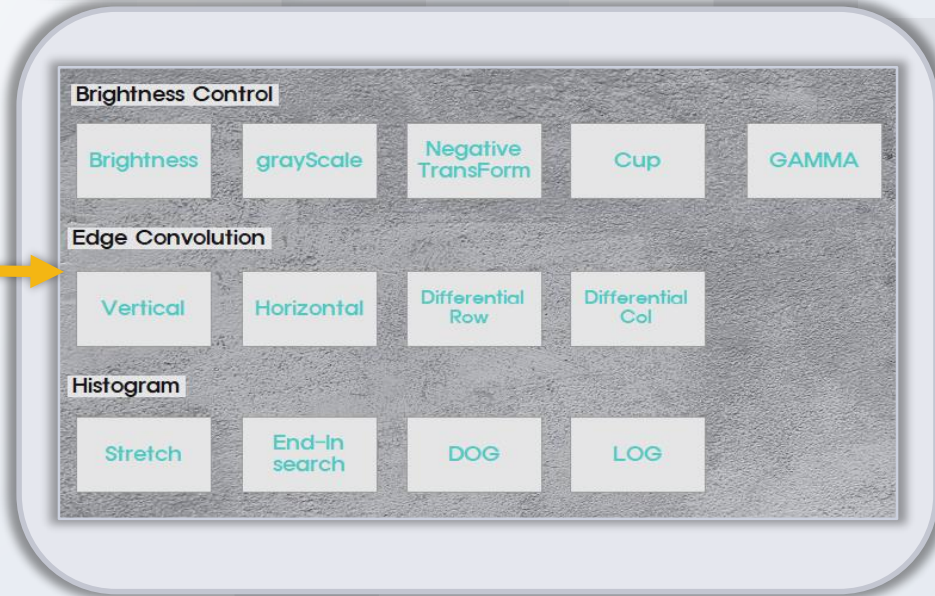
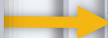
Same Button On 시
그래프 **visible = false**



LAYOUT - 부분변환(Select Control)



Button click 시
picture image
부분 변환하는 메뉴

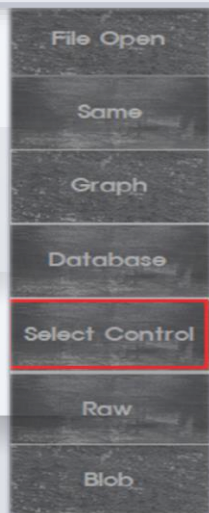


LAYOUT – 부분변환(Select Control)

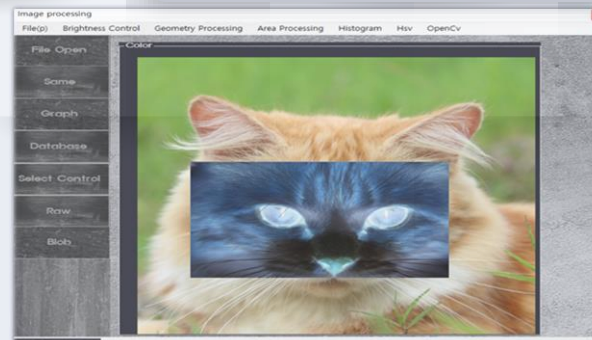
Menu click 시 MainForm
에서 부분 선택



Side Menu : select control



MainForm(Form1)에
결과 출력



VIDEO PROCESSING — 영상 처리 순서

Opencvsharp4 1차

2차

Event
Input

_inCvImage

_outCvimage

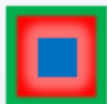
_inImageColor

_outImageColor

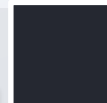
_inImage

_outImage

Input



_rawColorSelect



Input

File upload



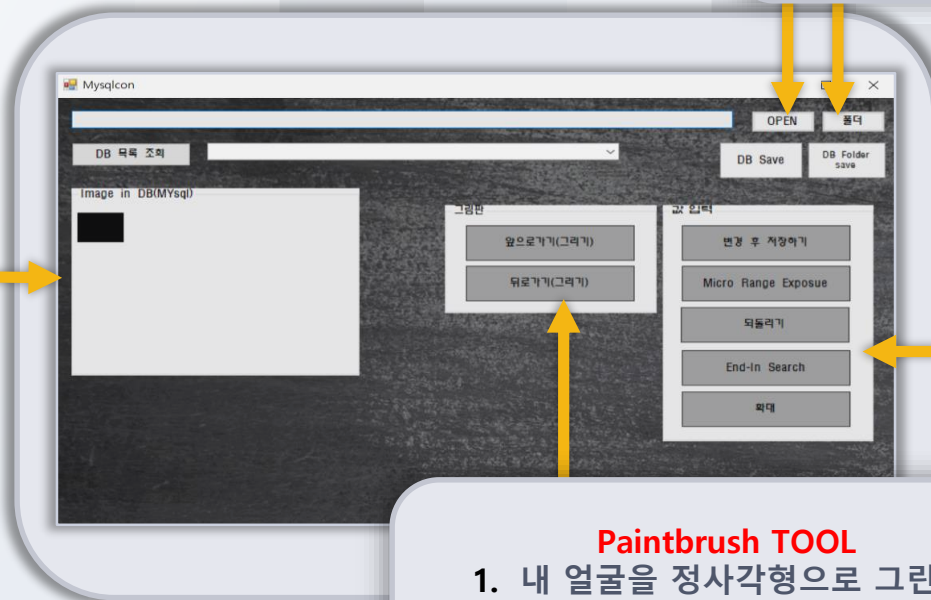
Output

DisplayImage()
함수 호출

LAYOUT – Mysql Form 설정(DB 연동)

Open : 한 장 이미지만 불러오기
폴더 : 폴더 내 이미지 전부 불러오기
DB Save : 한 장만 DB 저장
DB Folder save : 여러 장 DB 저장

IMAGE OUTPUT



원본 데이터를
변경하는 메뉴이며,
컴퓨터 파일과 DB에
동시에 저장가능
(변경 후 저장하기 CLICK시)

Paintbrush TOOL

1. 내 얼굴을 정사각형으로 그린 후
영상 처리(pen : black)
2. 뒤로가기 CLICK시 그전 작업으로
돌아감

VIDEO PROCESSING — 영상 처리 순서(db연동)



DB Save

File upload

DB SELECT(조회) >>> _InsertImage

1차

Event
Input

2차

>>> _upDateImage

COMBOX
SELECT

>>> Output >>> 내부 FILE SAVE & DB INSERT >>>

DisplayImage()
함수 호출



29 SELECT * FROM pixel_table WHERE f_id = '1901536587';

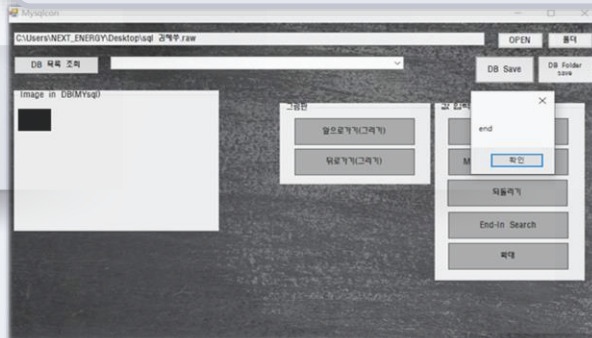
f_id	row_num	col_num	pixel
1901536587	0	0	250
1901536587	0	1	251
1901536587	0	2	248
1901536587	0	3	250
1901536587	0	4	249
1901536587	0	5	250
1901536587	0	6	250
1901536587	0	7	250
1901536587	0	8	250
1901536587	0	9	250
1901536587	0	10	250
1901536587	0	11	250
1901536587	0	12	250
1901536587	0	13	250
1901536587	0	14	250
1901536587	0	15	250
1901536587	0	16	250
1901536587	0	17	250
1901536587	0	18	250
1901536587	0	19	250
1901536587	0	20	250
1901536587	0	21	250
1901536587	0	22	250
1901536587	0	23	250
1901536587	0	24	250
1901536587	0	25	250
1901536587	0	26	250
1901536587	0	27	250
1901536587	0	28	250
1901536587	0	29	250
1901536587	0	30	250
1901536587	0	31	250
1901536587	0	32	250
1901536587	0	33	250
1901536587	0	34	250
1901536587	0	35	250
1901536587	0	36	250
1901536587	0	37	250
1901536587	0	38	250
1901536587	0	39	250
1901536587	0	40	250
1901536587	0	41	250
1901536587	0	42	250
1901536587	0	43	250
1901536587	0	44	250
1901536587	0	45	250
1901536587	0	46	250
1901536587	0	47	250
1901536587	0	48	250
1901536587	0	49	250
1901536587	0	50	250
1901536587	0	51	250
1901536587	0	52	250
1901536587	0	53	250
1901536587	0	54	250
1901536587	0	55	250
1901536587	0	56	250
1901536587	0	57	250
1901536587	0	58	250
1901536587	0	59	250
1901536587	0	60	250
1901536587	0	61	250
1901536587	0	62	250
1901536587	0	63	250
1901536587	0	64	250
1901536587	0	65	250
1901536587	0	66	250
1901536587	0	67	250
1901536587	0	68	250
1901536587	0	69	250
1901536587	0	70	250
1901536587	0	71	250
1901536587	0	72	250
1901536587	0	73	250
1901536587	0	74	250
1901536587	0	75	250
1901536587	0	76	250
1901536587	0	77	250
1901536587	0	78	250
1901536587	0	79	250
1901536587	0	80	250
1901536587	0	81	250
1901536587	0	82	250
1901536587	0	83	250
1901536587	0	84	250
1901536587	0	85	250
1901536587	0	86	250
1901536587	0	87	250
1901536587	0	88	250
1901536587	0	89	250
1901536587	0	90	250
1901536587	0	91	250
1901536587	0	92	250
1901536587	0	93	250
1901536587	0	94	250
1901536587	0	95	250
1901536587	0	96	250
1901536587	0	97	250
1901536587	0	98	250
1901536587	0	99	250

34 select * from file_table;

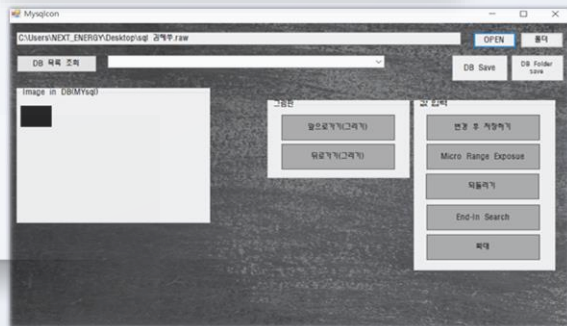
f_id	file_name	ext_name	size
814135292	cat01_256	raw	256
840295184	cat09_64	raw	64
1360818174	cat01_128	raw	128
1455583340	C:\Users\NEXT_ENERGY\Desktop\사\인Pet_RAW(sq...	raw	128
1628339953	etc05_128	raw	128
1901536587	sql 검색후	raw	128
2067290629	cat02_128	raw	128
2067290630	etc13_64	raw	64
2067290631	etc14_64	raw	64
2067290632	etc15_64	raw	64
2067290633	dog01_64	raw	64
2067290634	dog03_64	raw	64

LAYOUT – Mysql Form 설정(DB 연동)

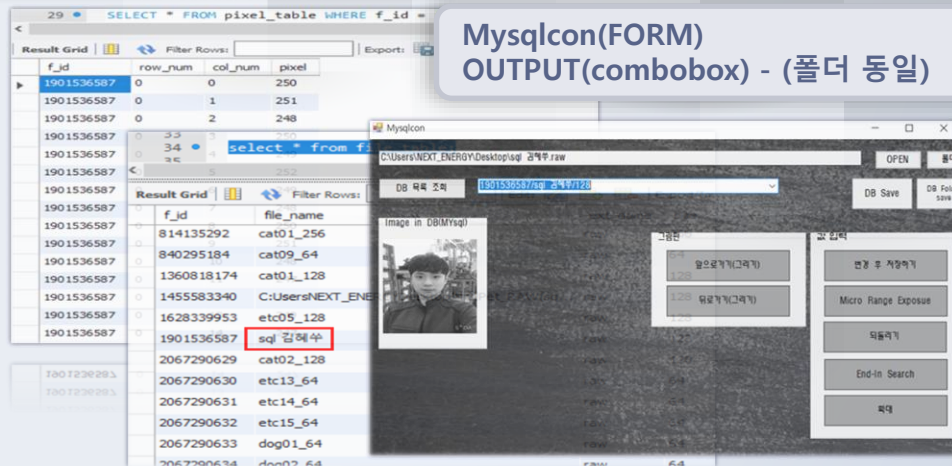
TEXT에 쓰여진 PATH로 DB
SAVE(끝날 시 end 표시) - (폴더 동일)



OPEN CLICK 후 Image PATH
TEXT에 저장 - (폴더 동일)



Mysqlcon(FORM)
OUTPUT(combobox) - (폴더 동일)



LAYOUT – Mysql Form 설정(DB(BLOB) 연동)

Button click 시
폴더 및 파일 열기

DB 내 저장된
IMAGE 시각화

사진(BLOB) 미리보기
형식으로 시각적으로
IMAGE 형식 볼 수 있게
설정

DB로 업로드와
불러온 DB를
DOWNLOAD
가능하게 설정

The screenshot shows a web application window titled "Blob". It features a search bar at the top with a "DB 조회" button. Below the search bar is a table with the following columns: ID, File NAME, Ext NAME, and File Size. The table is currently empty. To the right of the table is a large rectangular area for image preview. At the bottom of the window, there are several buttons: "FileUpload", "DB Folder Save", "파일 다운로드", "전체파일 다운로드", and "출력".

ID	File NAME	Ext NAME	File Size
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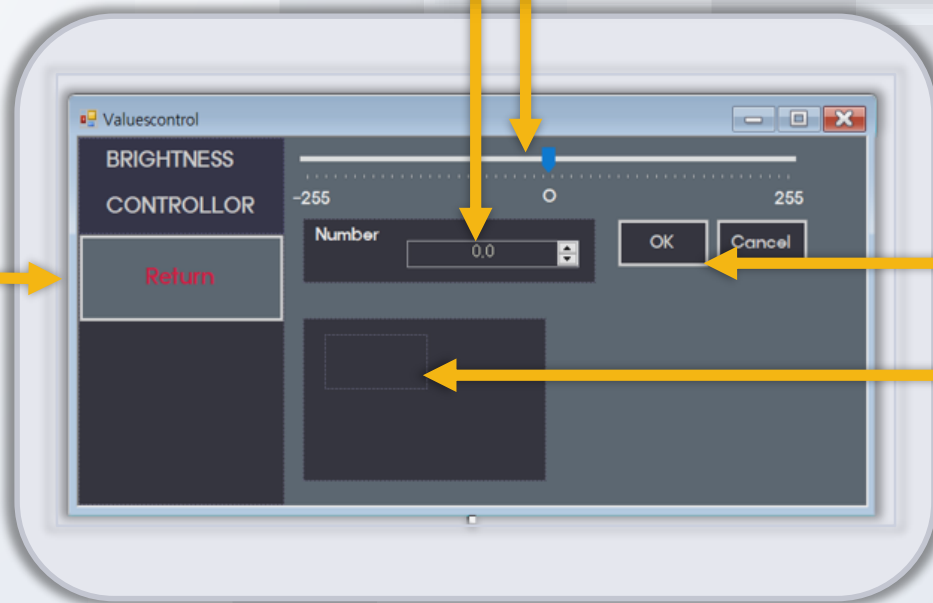
LAYOUT – sub Form 설정(미리보기 기능)

tkbar 옮길 시 값 변환 및 수치값
numUpDown에 표현 혹은
반대로도 표현 가능

Numericupdown - numUpDown
trackbar Name - tkbar

Return ON 시
원상태 이미지로 변환
Name - btn_return

MODAL 기능 사용



Ok On 시
Form1(mainForm)
결과 지정
Cancel On 시
MessageBox 생성

Image input output
Display
(Size == 256 통일되게
구현)
Name - pictureBox2

LAYOUT – sub Form 설정(미리보기 기능)

tkbar & numUpDown
이용 시 **미리보기 기능**

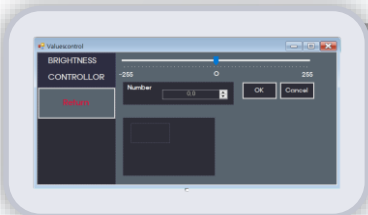
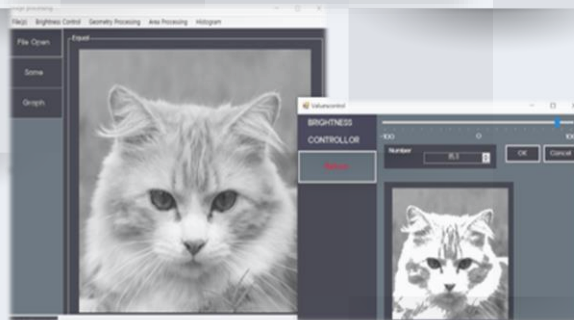
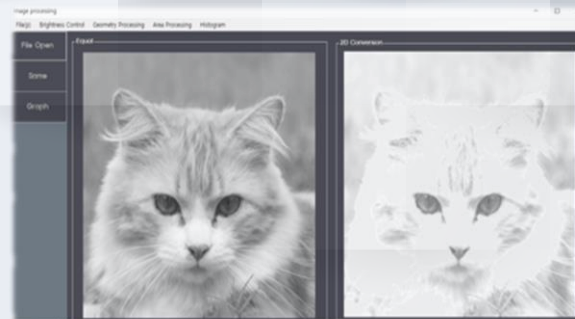
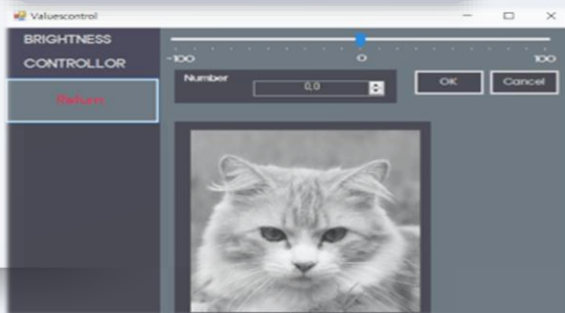



Image Size == 256(설정)
subDisplayImage() 호출




MainForm(Form1)에
결과 출력



LAYOUT – Mysql 설계도



	f_id	file_name	ext_name	size
▶	1446740092	sql 김혜수	raw	128
	1446740093	김혜수1	raw	128
	1446740094	김혜수2	raw	128
	1446740095	김혜수3	raw	128



	f_id	row_num	col_num	pixels
▶	1446740092	0	0	250
	1446740092	0	1	251
	1446740092	0	2	248
	1446740092	0	3	250
	1446740092	0	4	249
	1446740092	0	5	252
	1446740092	0	6	249
	1446740092	0	7	248
	1446740092	0	8	250
	1446740092	0	9	251

VIDEO PROCESSING — 확대 후 End-in search

내부 파일이 아닌 DB(mysql) -SELECT해서 가져온 IMAGE(MAINFORM 알고리즘과 동일)

