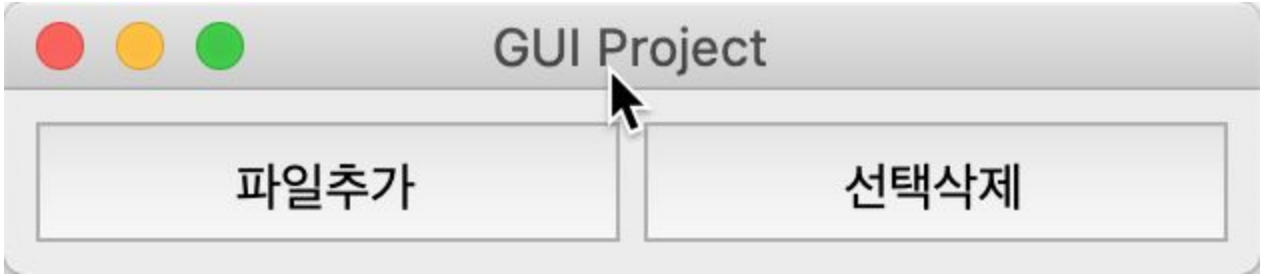
Merge Images

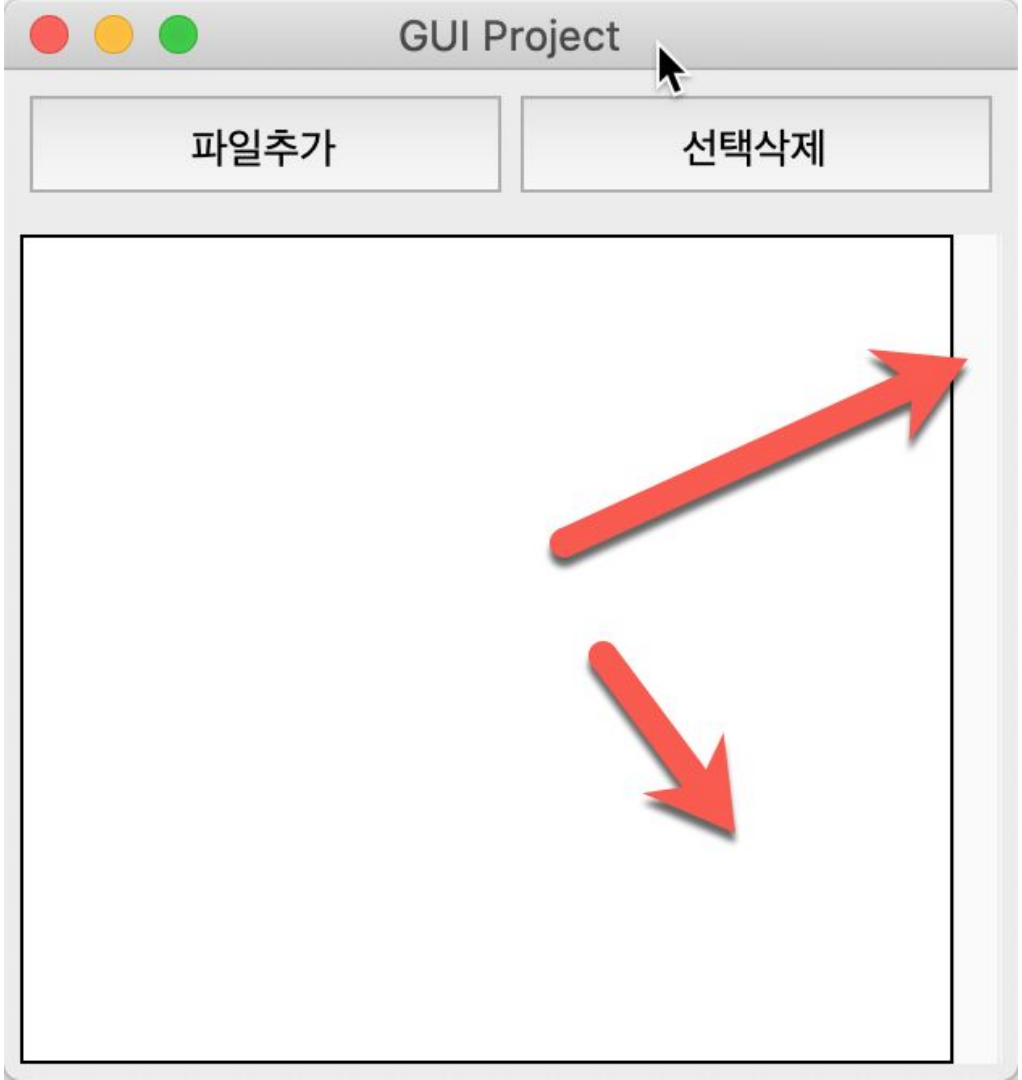
Window

```
from tkinter import *

root = Tk()

root.title("GUI Project")

#file frame

file_frame = Frame(root)

file_frame.pack(fill="x", padx=5, pady=5)

btn_add_file = Button(file_frame, padx=5, pady=5, width=12, text="파일추가")

btn_add_file.pack(side="left")

btn_del_file = Button(file_frame, padx=5, pady=5, width=12, text="선택삭제")

btn_del_file.pack(side="right")


root.mainloop()

sys.exit()
```

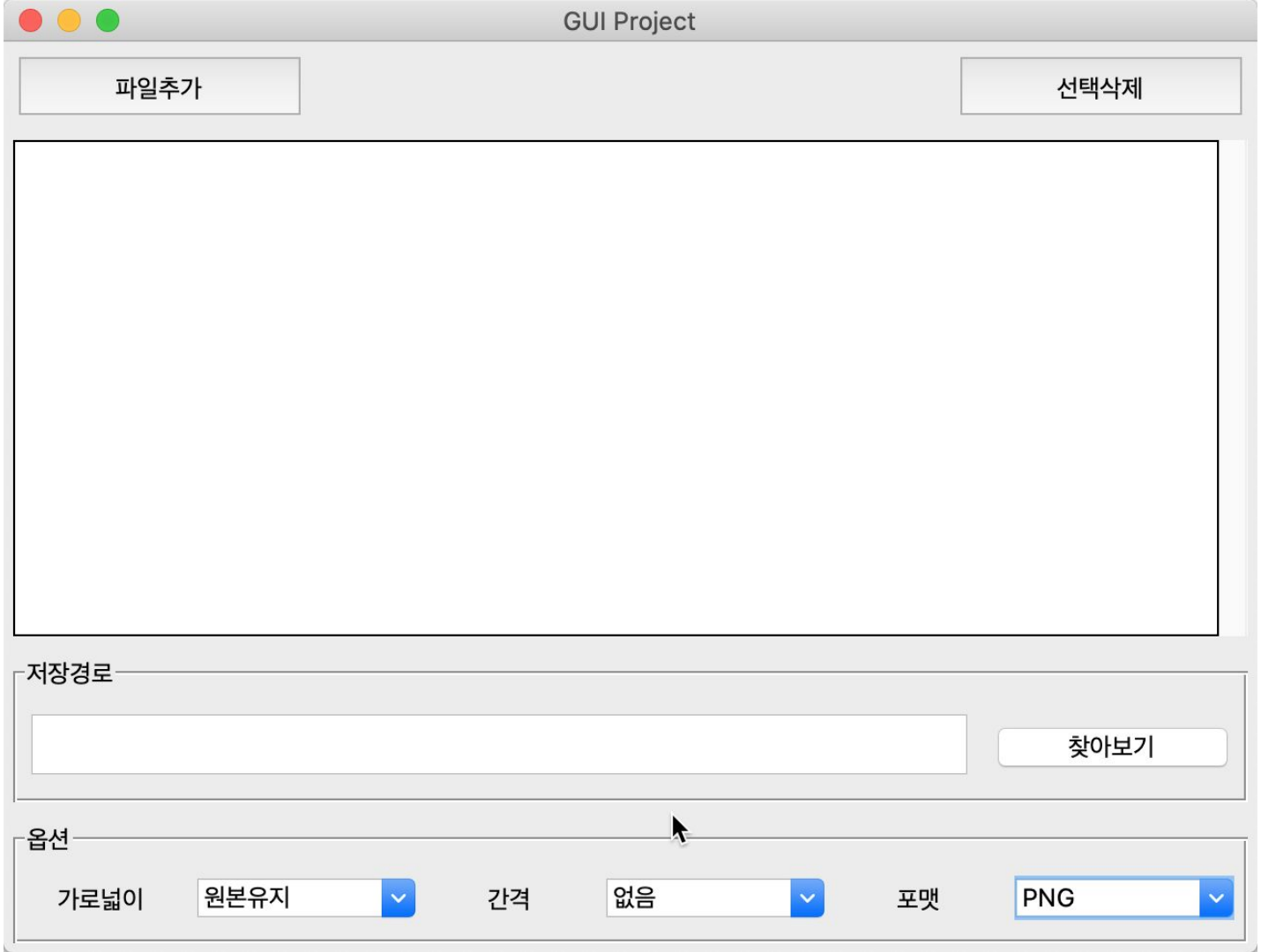
1

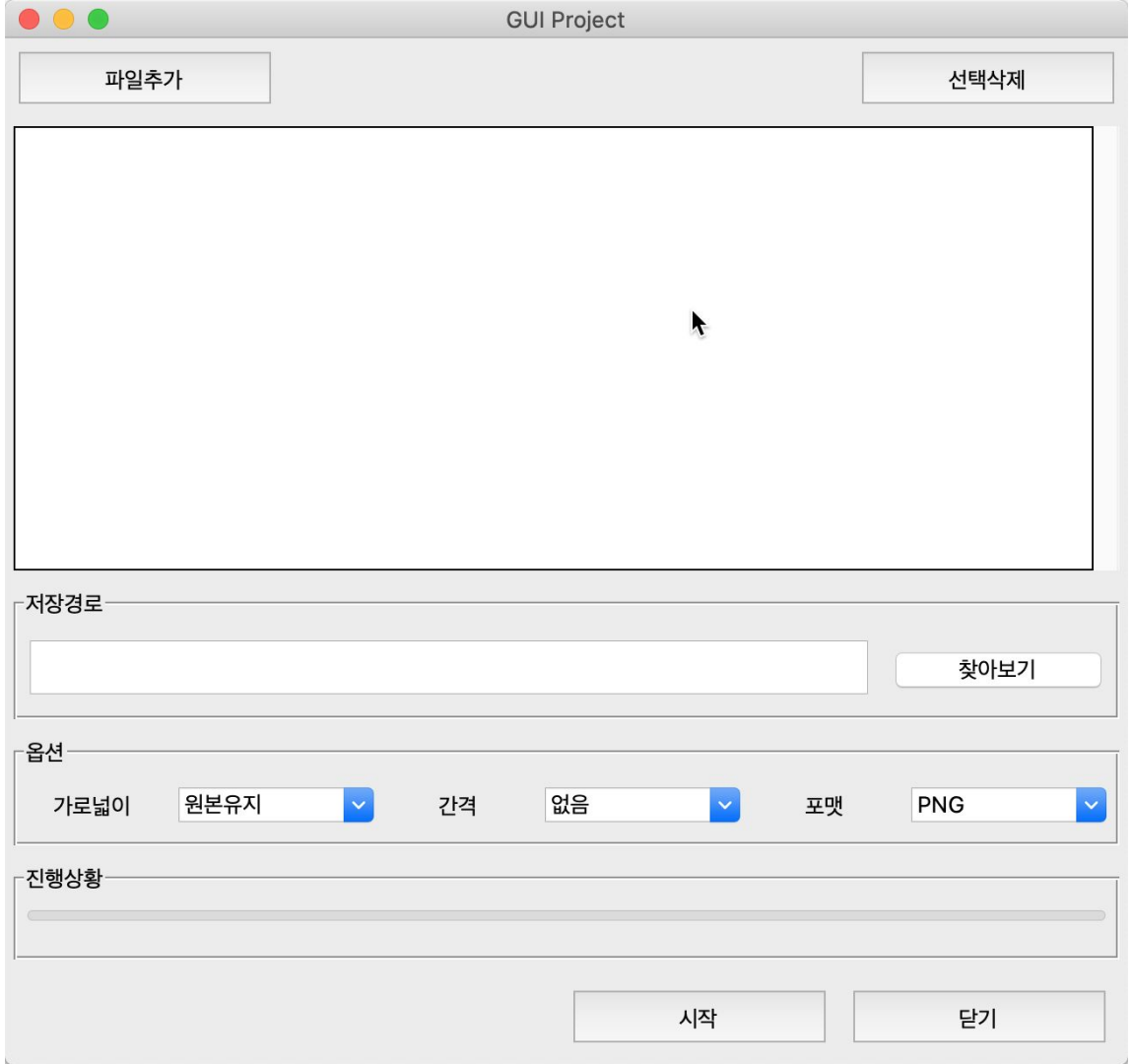


2




GUI Project
파일추가
선택삭제
저장경로
찾아보기


GUI Project
파일추가
선택삭제
저장경로
찾아보기
옵션
가로넓이
원본유지
간격
없음
포맷
PNG


GUI Project
파일추가
선택삭제
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가로넓이
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없음
포맷
PNG
진행상황
시작
닫기

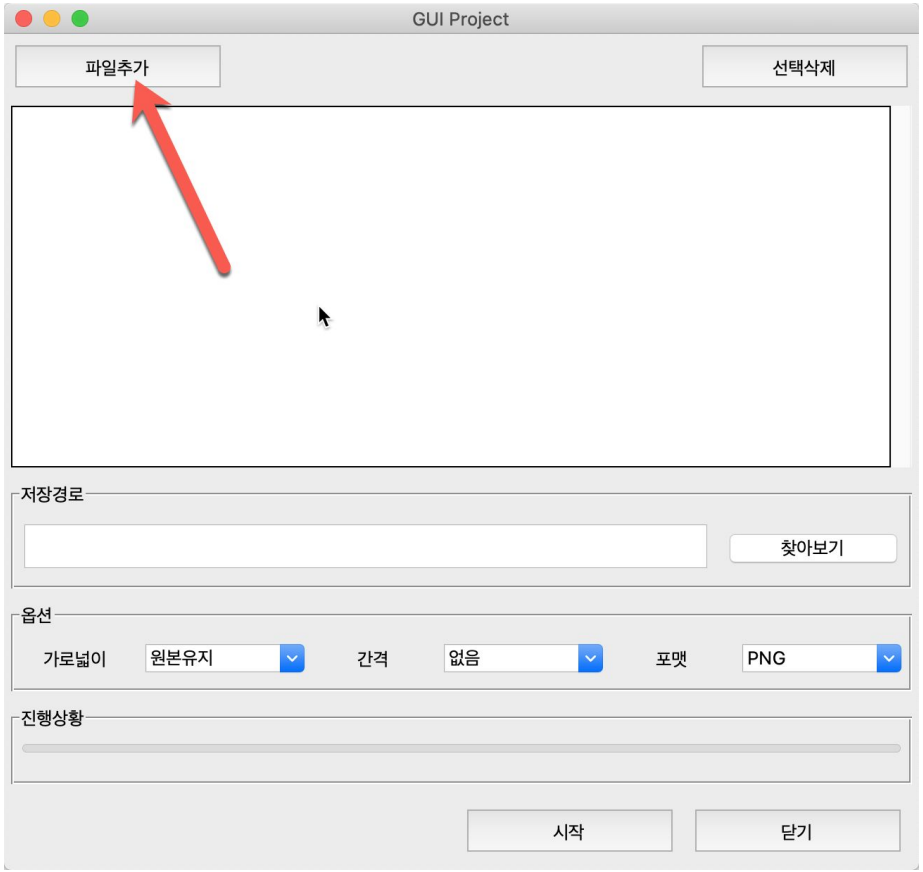
Event Handling

```
def add_file():
    print("add file")
```

```
btn_add_file = Button(file_frame, padx=5, pady=5, width=12, text="파일추가", command=add_file)
btn_add_file.pack(side="left")
```

```python
# 파일 추가
def add_file():
    files = filedialog.askopenfilenames(title="이미지 파일을 선택하세요", \
                                        filetypes=(("PNG 파일", "*.png"), ("모든 파일", "*.*")), \
                                        initialdir=r"./")
    # 최초에 사용자가 지정한 경로를 보여줌

    # 사용자가 선택한 파일 목록
    for file in files:
        list_file.insert(END, file)
```


GUI Project
파일추가
선택삭제
저장경로
찾아보기
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원본유지
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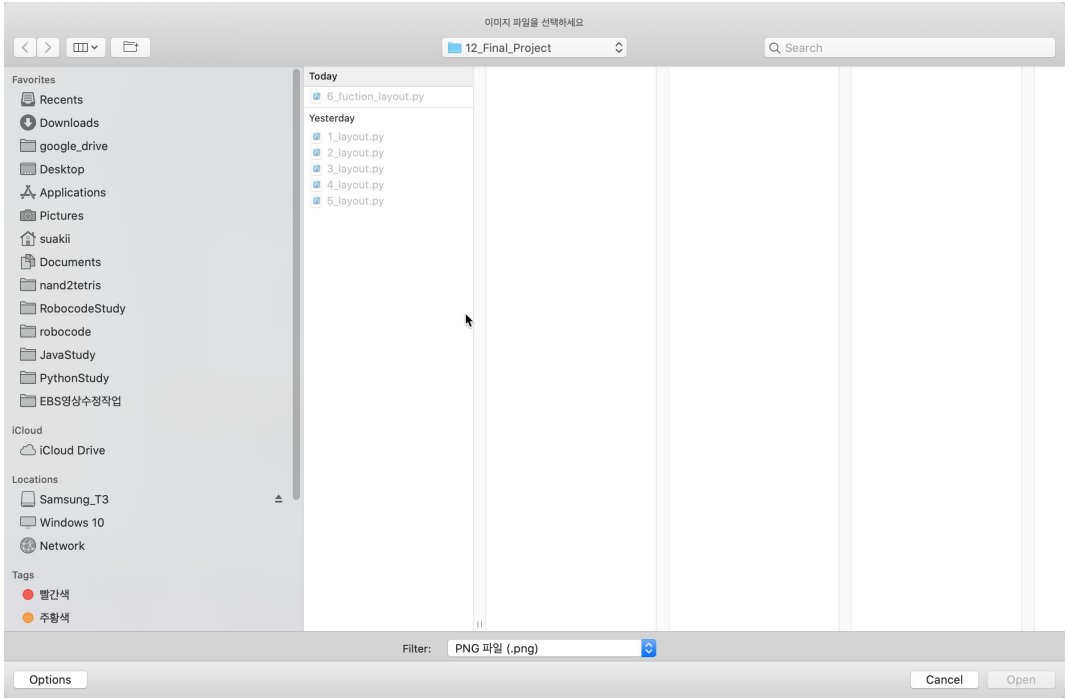
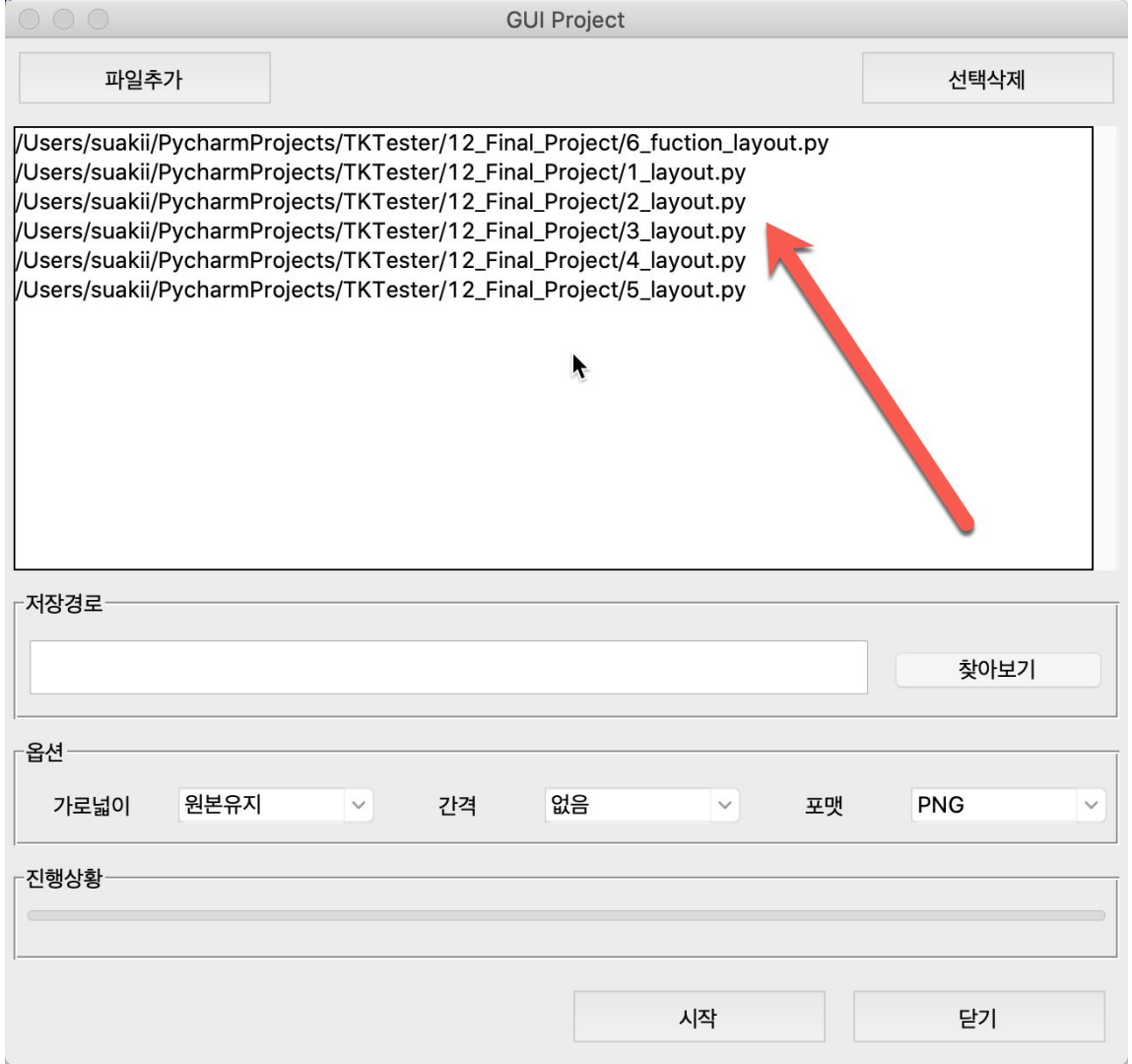
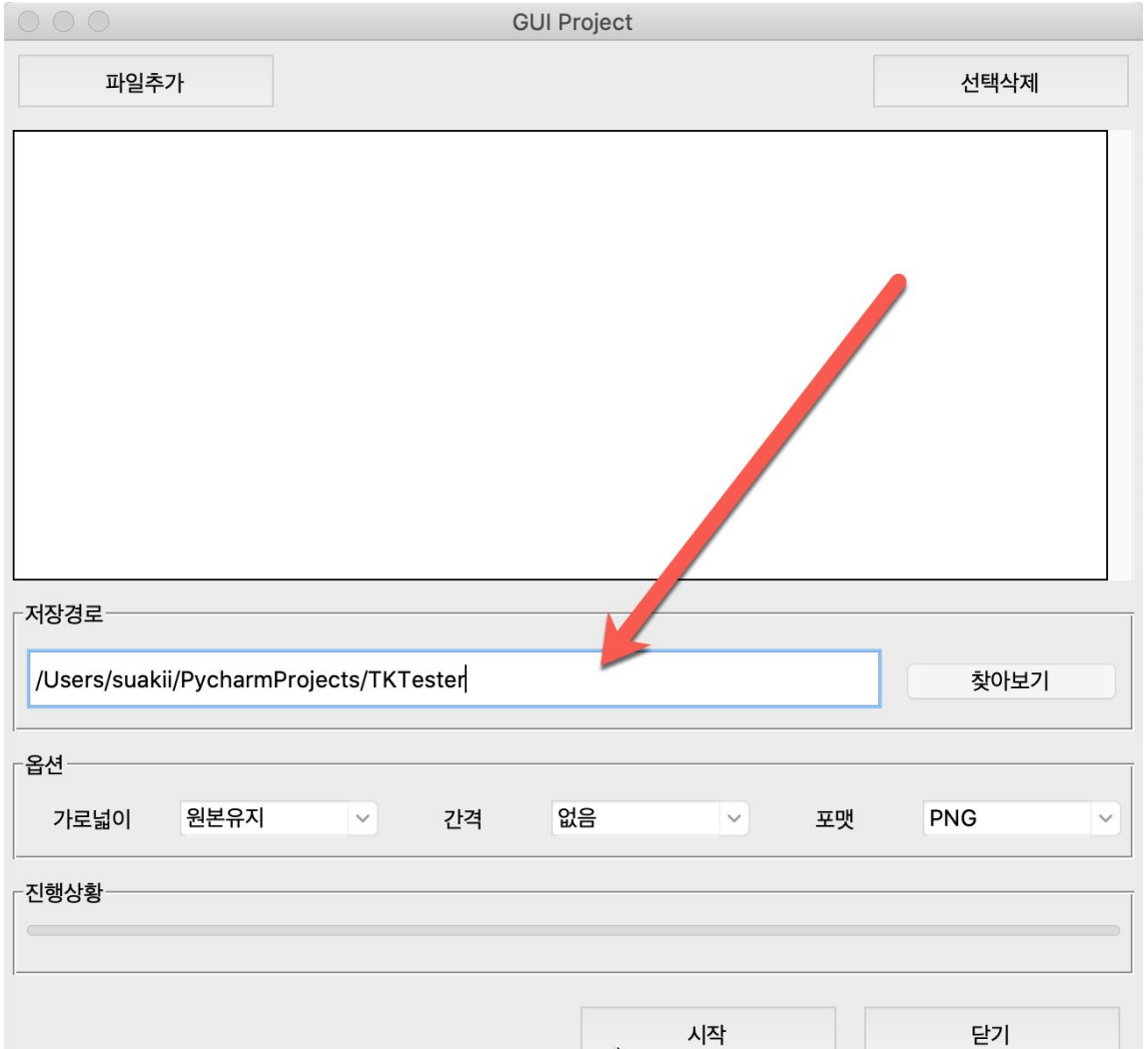
없음
포맷
PNG
진행상황
시작
닫기


이미지 파일을 선택하세요
12_Final_Project
Search
Favorites
Recents
Downloads
google_drive
Desktop
Applications
Pictures
suakii
Documents
nand2tetris
RobocodeStudy
robocode
JavaStudy
PythonStudy
EBS영상수정작업
iCloud
iCloud Drive
Locations
Samsung_T3
Windows 10
Network
Tags
빨간색
주황색
Today
6_fuction_layout.py
Yesterday
1_layout.py
2_layout.py
3_layout.py
4_layout.py
5_layout.py
Filter:
PNG 파일 (.png)
Options
Cancel
Open


GUI Project
파일추가
선택삭제
/Users/suakii/PycharmProjects/TKTester/12_Final_Project/6_fuction_layout.py
/Users/suakii/PycharmProjects/TKTester/12_Final_Project/1_layout.py
/Users/suakii/PycharmProjects/TKTester/12_Final_Project/2_layout.py
/Users/suakii/PycharmProjects/TKTester/12_Final_Project/3_layout.py
/Users/suakii/PycharmProjects/TKTester/12_Final_Project/4_layout.py
/Users/suakii/PycharmProjects/TKTester/12_Final_Project/5_layout.py
저장경로
찾아보기
옵션
가로넓이
원본유지
간격
없음
포맷
PNG
진행상황
시작
닫기

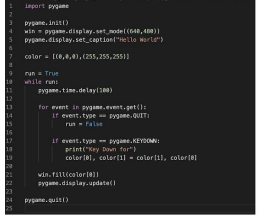
```
def del_file():
    print(list_file.curselection())
    for index in reversed(list_file.curselection()):
        list_file.delete(index)
```

```
# 저장 경로 (폴더)
def browse_dest_path():
    folder_selected = filedialog.askdirectory()
    if folder_selected is None: # 사용자가 취소를 누를 때
        return
    #print(folder_selected)
    txt_dest_path.delete(0, END)
    txt_dest_path.insert(0, folder_selected)
```


GUI Project
파일추가
선택삭제
저장경로
/Users/suakii/PycharmProjects/TKTester
찾아보기
옵션
가로넓이
원본유지
간격
없음
포맷
PNG
진행상황
시작
닫기

```
def start():
    print(cmb_width.get())
    print(cmb_space.get())
    print(cmb_format.get())

    if list_file.size() == 0:
        msgbox.showwarning("경고", "이미지 파일을 추가하세요")
        return

    if len(txt_dest_path.get()) == 0:
        msgbox.showwarning("경고", "저장 경로를 확인하세요")
        return

    merge_images()
```

```python
def merge_images():
    # print(list_file.get(0, END)) # 모든 파일 목록을 가지고 오기
    images = [Image.open(x) for x in list_file.get(0, END)]
    # size -> size[0] : width, size[1] : height
    widths = [x.size[0] for x in images]
    heights = [x.size[1] for x in images]
    print(widths, heights)

    # [(10, 10), (20, 20), (30, 30)]
    widths, heights = zip(*(x.size for x in images))

    # 최대 넓이, 전체 높이 구해옴
    max_width, total_height = max(widths), sum(heights)

    # 스케치북 준비
    result_img = Image.new("RGB", (max_width, total_height), (255, 255, 255))  # 배경 흰색
    y_offset = 0  # y 위치
    # for img in images:
    #     result_img.paste(img, (0, y_offset))
    #     y_offset += img.size[1] # height 값 만큼 더해줌

    for idx, img in enumerate(images):
        result_img.paste(img, (0, y_offset))
        y_offset += img.size[1]

        progress = (idx + 1) / len(images) * 100  # 실제 percent 정보를 계산
        p_var.set(progress)
        progress_bar.update()

    dest_path = os.path.join(txt_dest_path.get(), "merge.jpg")
    result_img.save(dest_path)
    msgbox.showinfo("알림", "작업이 완료되었습니다.")
```



```python
import pygame

pygame.init()
screen = pygame.display.set_mode((640, 480))

running = True
while running:
    for event in pygame.event.get():
        if event.type == pygame.QUIT:
            running = False
        if event.type == pygame.KEYDOWN:
            react_to_user_input()

    do_things_the_game_does()
    draw_everything_on_the_screen()
```

```
circle(Surface, color, pos, radius, width=0)
polygon(Surface, color, pointlist, width=0)
line(Surface, color, start, end, width= 1)
rect(Surface, color, Rect, width=0)
ellipse(Surface, color, Rect, width=0)
```

```python
box = pygame.Rect(10, 10, 100, 40)
pygame.draw.rect(screen, blue, box)
#draws at (10,10) rectangle of width 100, height 40
```