```
from google.colab import files
from PIL import Image
import numpy as np
import pandas as pd
import os

# Global CSV filename to store image data
csv_filename = 'xray_images_data.csv'

# Initialize an empty DataFrame with columns for filename and pixel data
columns = ['Filename'] + [f'pixel_{i}' for i in range(128 * 128)]  # Adjust based on image size
df = pd.DataFrame(columns=columns)

def image_to_csv(image_path, csv_filename):
    """
    Convert an image to a row of pixel data and append it to the CSV file.
    """
    global df

    # Open image and process
    image = Image.open(image_path).convert('L')  # Convert to grayscale
    image = image.resize((128, 128))  # Resize to 128x128 pixels, adjust as needed
    image_array = np.array(image).flatten()  # Flatten the image array

    # Create a row with the filename and pixel data
    row = [os.path.basename(image_path)] + list(image_array)

    # Append the row to the DataFrame and save to CSV
    df.loc[len(df)] = row
    df.to_csv(csv_filename, index=False)

def upload_and_process_images():
    """
    Allow the user to upload images and process them into a CSV file.
    """
    while True:
        # Upload files
        uploaded = files.upload()
        if not uploaded:
            print("No file uploaded. Exiting upload process.")
            break

        # Process each uploaded file
        for filename in uploaded.keys():
            image_to_csv(filename, csv_filename)
            print(f"Processed and added {filename} to the CSV file.")

        # Ask user if they want to continue
        choice = input("Upload another image? (yes/no): ")
        if choice.lower() != 'yes':
            break

def download_csv():
    """
    Provide a link to download the CSV file.
    """
    files.download(csv_filename)

# Create UI buttons in Colab for interactive actions
import ipywidgets as widgets
from IPython.display import display, clear_output

# Stop button
stop_button = widgets.Button(description="Stop Uploads")
# Download button
download_button = widgets.Button(description="Download CSV")

# Button click handlers
def on_stop_button_clicked(b):
    print("Stopping the upload process.")
    stop_button.clicked = True

def on_download_button_clicked(b):
    print("Downloading CSV file.")
    download_csv()

# Assign handlers
stop_button.on_click(on_stop_button_clicked)
download_button.on_click(on_download_button_clicked)

# Display buttons
```

```
display(stop_button)
display(download_button)

# Reset stop button state
stop_button.clicked = False

# Continuous upload and process loop
try:
    while not stop_button.clicked:
        upload_and_process_images()
        clear_output(wait=True)  # Clear previous outputs for a clean interface
except KeyboardInterrupt:
    print("Upload process interrupted.")

# Final message
print("Upload process completed. Use the 'Download CSV' button to download the file.")
```

Stop Uploads

Download CSV

Choose Files 1201 files

- **Tr-no_0394.jpg**(image/jpeg) - 11990 bytes, last modified: 9/30/2024 - 100% done
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