Task 1

- **Task:** Extract all images from folders and sub-folders and copy them to a single folder, and writes the metadata to a CSV file.

- **Solution:**

  - The code first defines the source and output folders.
  - Then, it defines a list of valid image file extensions.
  - Next, it defines a function to extract image metadata, which includes the image name, size, and last modification date.
  - The function then recursively gathers all image files in the source folder and its sub-folders.
  - For each image file, the function extracts the metadata and moves the file to the output folder.
  - Finally, the code defines the CSV header and file path, and writes the metadata to a CSV file.

- ***Instructions on how to run the solution:***

  1. Please check and verify all paths in the Python script.

  2. Make sure the required Python libraries is installed :
     - os
     - shutil
     - csv
     - PIL
     - datetime
     - pandas

  3. Run the code **problem1.py** in problem 1 folder.

  4. After you run the code, Solution folder will be created and contains

     images_data ➔ contains all images

csv_output_folder ➔ contains a csv file (report) & Excel File (more organized)

Task 2

- **Task:** Convert a txt file to a JSON file.
- **Solution:**
  - The code first reads the text file.
  - Then, it parses and formats the data, creating a list of annotations.
  - Next, it creates the JSON object, which includes the annotations and the image data.
  - Finally, the code writes the JSON object to a file.
- ***Instructions on how to run the solution***

1. Please check and verify all paths in the Python script.
2. Make sure the required Python library is installed:
   - json
3. Run the code **problem2.py** in problem 2 folder.
4. After you run the code, Solution.json file will be created.