HOW TO RUN THE PROGRAM

GO-WITH-THE-FLOW: MOTION CONTROLLABLE VIDEO DIFFUSION MODELS USING REAL-TIME WARPED NOISE

Step:1 Start the program.

Step:2 Load the input image from the input folder and resize it to 256x256 pixels.

Step:3 Read the user prompt (from input/prompt.txt). This prompt describes the required object movement (like "move left", "move forward", etc.).

Step:4 Based on the prompt, convert the prompt into movement direction values (dx, dy).
Example:

- "left" → move (-2, 0)
- "right" → move (2, 0)
- "forward"/"up" → move (0, -2)
- "backward"/"down" → move (0, 2)

Step:5 Detect the main object in the image using YOLOv8 segmentation:

- If an object is found, extract its mask.
- If no object is detected, use the original image as a static frame (no animation).

Step:6 Estimate noise flow for the image using the noise warp model to simulate motion flow.

Step:7 Display choices to the user:

- Option 1: Create an animated GIF of the object moving.
- Option 2: Remove the main object from the image.
- Option 3: Replace the main object with a dummy colored block.

Step:8 Based on the user's choice:

- If "Create animated GIF":
    - For each frame:
        - Shift the object mask according to the movement direction.
        - Merge the shifted object onto the background.
    - Save the frames as a GIF in the output folder.
- If "Remove object":
    - Replace the object region in the image with white pixels.
    - Save the result as a PNG image in the output folder.
- If "Replace object":
    - Replace the object region with a dummy colored block (like green or red).

- Save the result as a PNG image in the output folder.

Step:9 If the user gives an invalid choice, print an error message.

Step:10 End the program.