Objectives

1. Develop and document a main class program for removeDarkLinesSelective and removeDarkLinesSequential functions as per team lead's request.
2. Implement dynamic weighting methods for weighted average calculations in image merging.
3. Update the UI to reflect dynamic weight parameters and methods.
4. Investigate and fix QString formatting errors in the code.
5. Identify and resolve blurring and overbride issues in the merged image output.

Activities

1. **Main Class Construction:**
    - Developed the main class program for both line removal functions.
    - Added detailed comments to ensure the code flow is clear for the team lead.
    - Submitted the finalized main class code to the team lead for review.
2. **Dynamic Weight Implementation:**
    - Introduced a new MergeParams struct to encapsulate merge method and weight parameters.
    - Updated merge functions to utilize MergeParams and adjusted the weighted average to calculate weights based on pixel values dynamically.
    - Implemented four dynamic weight calculation methods:
        - **STATIC:** Original fixed-weight method.
        - **INTENSITY_BASED:** Weight based on relative pixel intensity.
        - **GRADIENT_BASED:** Weight based on local gradient magnitudes.
        - **VARIANCE_BASED:** Weight based on local variance in a window.
3. **UI Enhancements:**
    - Updated the control panel to display dynamic weight methods and their respective parameters.
4. **QString Error Fixes:**
    - Identified and resolved QString formatting errors by switching to numbered placeholders (%1, %2, etc.) for float and integer values.
    - Ensured compatibility with dynamic weight calculation methods, particularly for the VARIANCE_BASED case.
5. **Investigation of Merging Issues:**

- Analyzed the merged output for unintended blurring and overbride effects, with further testing and debugging ongoing.

6. **Survey Preparation:**
   - Surveyed and shortlisted key questions for the final year project survey.

Achievements

1. Successfully constructed and submitted the main class program for line removal functions with clear documentation.
2. Enhanced image merging functionality with dynamic weight calculation methods for more flexible and adaptive merging.
3. Resolved QString formatting errors, ensuring proper parameter display in the UI.
4. Updated the UI to improve user understanding and control of dynamic weighting methods.
5. Progressed in identifying potential causes of blurring and overbride issues in the merged image.

Problems & Solutions

1. **QString Formatting Errors:**
   - **Problem:** Errors in formatting caused improper parameter display in the UI.
   - **Solution:** Replaced %.2f and %d with %1, %2, etc., using QString's proper placeholder syntax.
2. **Blurring and Overbride Issues in Merged Image:**
   - **Problem:** Some blurring and overbride effects appeared post-merge.
   - **Solution:** Investigation ongoing to identify any additional processes applied after merging.
3. **Dynamic Weight Calculation Challenges:**
   - **Problem:** Complexity in implementing and verifying multiple weight calculation methods.
   - **Solution:** Modularized the methods and extensively tested each to ensure correctness.
4. **Survey Question Finalization:**
   - **Problem:** Difficulty in shortlisting questions that address key project aspects.
   - **Solution:** Reviewed project objectives and team input to finalize survey questions.