**Report**

**Task:**

Two 180x180 grayscale images, **Img1** (representing my first name) and **Img2** (representing my last name), are used for image operations like complement, union, and intersection.

**Explanation of Operations and Their Effects:**

1. **Complement of Img1:**
   * **Effect**: The complement operation inverts the pixel intensities, meaning darker areas become lighter and vice versa. For a text image like a name, this would reverse the background and text color. If my first name is written in dark text on a light background, after complementing, the text would become light, and the background would become dark.
2. **Complement of Img2:**
   * **Effect**: Similar to Img1, the complement of Img2 inverts the grayscale values. If the last name was initially in a dark color on a light background, the text would turn light, and the background would turn dark. This visually contrasts the original.
3. **Union of Img1 and Img2:**
   * **Effect**: The union operation takes the maximum intensity value at each pixel position between the two images. If both images have overlapping text, this will combine them in a way that highlights both names at their brightest spots. The result would display a blend of both images, showing more prominent parts from either Img1 or Img2.
4. **Intersection of Img1 and Img2:**
   * **Effect**: The intersection operation keeps the minimum value of each pixel from both images. In practice, this would highlight only the areas where both images have overlapping intensity, resulting in a darker, subdued blend of the two names. If the two names don’t overlap in terms of position, much of the image may appear dark or blank.

**Conclusion:**

* The **complement** operation gives an inverted look of each image, making text more striking by reversing the brightness.
* The **union** combines both images while keeping the brighter areas prominent, providing a merged visual.
* The **intersection** focuses on overlapping content between the two images, often yielding a darker image that emphasizes shared features, if any.

These operations help manipulate visual features to produce distinct outputs based on pixel-wise calculations.