Computer Vision Assignment 2

Title: Template Matching for Number Detection on Pakistani Currency Note.

Objective:

1. The objective of this assignment is to implement a **template matching algorithm** to detect and determine the **note identification number** printed at the **top-right and bottom-left corners** of a **Pakistani note**.
2. Place the rectangular blue colored boxes at the detected numerical text .
3. Determine the pixel coordinates (top-left and bottom-right) of the bounding box in this format (image1.jpg 266 268 317 483 244 684 293 864)
   Note: It is just an example .
4. Save these coordinates along with the **image name** in a **CSV file**.

Requirements:

1. Use only Template Matching (no external libraries like OCR or Deep Learning models).
2. Implement the solution in **Python** using basic **image processing techniques**.
3. Visualize the detection results by **drawing rectangles** around the detected numbers.
4. **Save output images** with detected numbers highlighted.

Deliverables:

1. Code Implementation (Python script / Jupyter Notebook).

2. CSV File containing detected number coordinates for each image.

3. Output Images with detected numbers highlighted using rectangles.

4. Report (PDF) covering:

   o Introduction to template matching.

- o Explanation of selected template and methodology.

- o Challenges encountered and solutions applied.

- o Results with screenshots.

Deadline: 4th April 2025 (11:59)