**Lab 09**

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| Student ID: | B09611007 |
| Total Score: |  |

**Note:**

Most of the explanations in this lab is mandatory, However, giving reasonable explanations to your answer or programs will earn you partial credits when your answer is incorrect.

1. **Multiple Choice (20 points)**

|  |  |  |  |
| --- | --- | --- | --- |
| # | Answer | Explanation (Please write codes to verify it.) | Score |
| 1 | B | (In’lab08\_A.py’) |  |

1. **Find the Contour (20 points)**

|  |  |  |
| --- | --- | --- |
| # | Description | Score |
| 1 | To process the image, first convert it to grayscale, then apply a binary threshold. Finally, perform erosion followed by dilation. This approach will help in identifying the contour with the largest area in the image. |  |

1. **Image Enhancement (25 points)**

|  |  |  |
| --- | --- | --- |
| # | Description | Score |
| - | Paste your result from (a) to (g) here. |  |

1. **Fingerprint Analysis (35 points)**

|  |  |  |
| --- | --- | --- |
| # | Description | Score |
| - | Paste your result here and briefly describe your image processing procedure and approach. How do you think your results are?    First, enhance the fingerprint image sequentially through Gaussian filter, binarization, erosion, and dilation, while also removing small holes and objects. Next, thin the processed image. Finally, create a mask to filter out features located on the edges of the fingerprint. I think it does well in extracting these features. |  |