



**UNIVERSITY OF ENGINEERING AND TECHNOLOGY TAXILA**  
**FACULTY OF TELECOMMUNICATION AND INFORMATION ENGINEERING**  
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# **DIGITAL IMAGE** **PROCESSING**

## **LAB MANUAL 9**

Morphological Operations

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## Morphological Operations

### LAB OBJECTIVE:

The objective of this lab is to understand & implement

- 1) Dilation
- 2) Erosion
- 3) Closing
- 4) Opening

### **TASK 1**

Write a program to implement Dilation and note the effects on binary images.

### **TASK 2**

Write a program to implement Erosion and note the effects on binary images.

### **TASK 3**

Write a program to implement Opening and note the effects on binary images.

$$A \circ B = (A \ominus B) \oplus B$$

### **TASK 4**

Write a program to implement Closing and note the effects on binary images.

$$A \bullet B = (A \oplus B) \ominus B$$