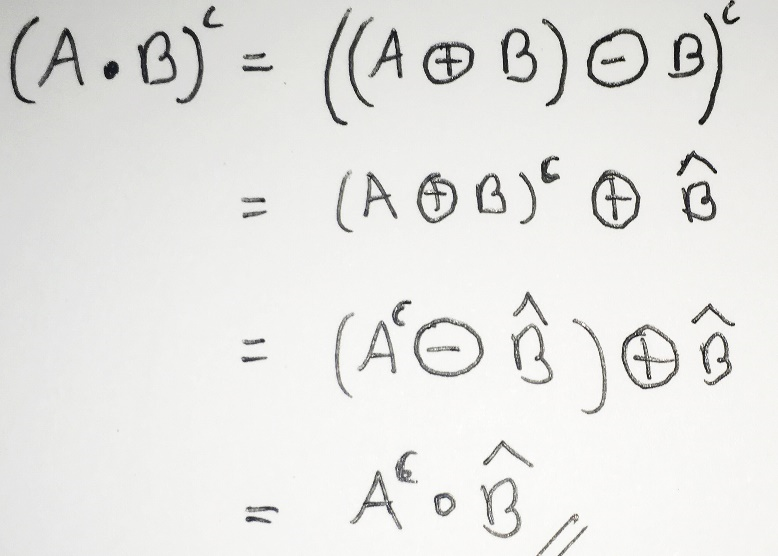
**COMP 4421 (Fall 2018) Assignment 2**

|  |  |  |
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**Exercises**

1. **Opening and Closing**



1. **Dilation**

**A dilate B1**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | **0** | **0** | **0** | **1** | **1** | **1** | **1** |
| **0** | **0** | **0** | **1** | **1** | **1** | **1** | **1** |
| **0** | **0** | **0** | **1** | **1** | **1** | **1** | **1** |
| **0** | **1** | **1** | **1** | **1** | **1** | **1** | **1** |
| **1** | **1** | **1** | **1** | **1** | **1** | **1** | **0** |
| **1** | **1** | **1** | **1** | **1** | **0** | **0** | **0** |
| **1** | **1** | **1** | **1** | **1** | **0** | **0** | **0** |
| **1** | **1** | **1** | **1** | **0** | **0** | **0** | **0** |

**A dilate B2**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** |
| **0** | **0** | **0** | **0** | **1** | **1** | **1** | **1** |
| **0** | **0** | **0** | **1** | **1** | **1** | **1** | **1** |
| **0** | **0** | **1** | **1** | **1** | **1** | **1** | **0** |
| **0** | **1** | **1** | **1** | **1** | **1** | **0** | **0** |
| **1** | **1** | **1** | **1** | **1** | **0** | **0** | **0** |
| **1** | **1** | **1** | **1** | **0** | **0** | **0** | **0** |
| **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** |

**A erode B1**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**A erode B2**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

**Programming**

1. **Hough Transform**

|  |  |
| --- | --- |
| **Filename** | **Image** |
| **1\_marked.jpg** |  |
| **2\_marked.jpg** |  |
| **3\_marked.jpg** |  |
| **4\_marked.jpg** |  |
| **5\_marked.jpg** |  |
| **6\_marked.jpg** |  |

1. **Image Warping**

|  |  |
| --- | --- |
| **Filename** | **Image** |
| **1\_warped.jpg** |  |
| **2\_warped.jpg** |  |
| **3\_warped.jpg** |  |
| **4\_warped.jpg** |  |
| **5\_warped.jpg** |  |
| **6\_warped.jpg** |  |