Digital Image Processing

LabWork #CV3

Professor : Jin-Woo Jung

* Using the given CFilter class, design a program that can process the following :

1. Convert an image to a gray scale image (Input : lenna.jpg, jenny.jpg)

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | | **Output** | |
|  |  |  |  |

| code |
| --- |
|  |

1. Make a blurred image using the gray scale image

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | | **Output** | |
|  |  |  |  |
| code | | | |
|  | | | |

1. Subtract the blurred image from original image

|  |  |  |
| --- | --- | --- |
| **Input** | | **Output** |
|  |  |  |
|  |  |  |
| code | | |
|  | | |

1. Add the original image with the image from above step (iii)

|  |  |  |
| --- | --- | --- |
| **Input** | | **Output** |
|  |  |  |
|  |  |  |
| code | | |
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* Using the given CColor and CPixel class, design a program with the following steps :

1.

* 1. Split the RGB image to R image, G image, B image. (Input : jenny.jpg)

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| --- | --- | --- | --- |
| **Input** | **Output** | | |
|  |  |  |  |
| code | | | |
|  | | | |

* 1. Make equalized images using histogram equalization : R’ image, G’ image, B’ image

|  |  |  |
| --- | --- | --- |
| **Input** | | |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| **Output** | | |
|  |  |  |
| code | | |
|  | | |

* 1. Composite R’ image, G’ image, and B’ image : R’G’B’ image

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | | | **Output** |
|  |  |  |  |
| code | | | |
|  | | | |

2.

* 1. Convert RGB color image to HSV image (input : jenny.jpg)

|  |  |
| --- | --- |
| **Input** | **Output** |
|  |  |
| code | |
|  | |

* 1. Split the HSV image to H image, S image, V image.

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | **Output** | | |
|  |  |  |  |

| code |
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* 1. Make an equalized image using histogram equalization : V’ image

|  |  |
| --- | --- |
| **Input** | **Output** |
|  |  |

| code |
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|  |

* 1. Composite H image, S image, and V’ image : HSV’ image

|  |  |  |  |
| --- | --- | --- | --- |
| **Input** | | | **Output** |
|  |  |  |  |

| code |
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* 1. Convert the HSV’ image to RGB image : HSV’2RGB image

|  |  |
| --- | --- |
| **Input** | **Output** |
|  |  |

| code |
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3. Compare R’G’B’ image and HSV’2RGB image