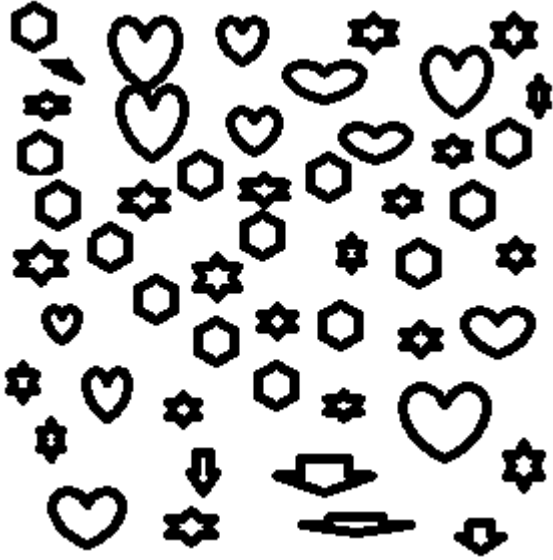# HOMEWORK 5
COMP 4687 – Introduction to Computer Vision

Template Matching

Use the template matching to locate and to count the hexagons in "shape.bmp".

a)   Your program must create a template of hexagons. You can use the hexagon which is located at the upper left corner of the input "shape.bmp" image. You should save your hexagon template in an image file not to create each time you call the method. The file name should be "myTemplateImage.png".
b)   The input "shape.bmp" image is given as a 24 bpp (bits per pixel) image. Convert it to an 8-bits grey level image.
c)   Calculate and plot the normalized cross correlation image.
d)   Find the good maximums of the normalized cross correlation.
e)   Draw a "+" at each hexagon center. You can use the Matlab "text" plotting function.
f)   Display number of the hexagons.

HW5_1

Write all operations in a single Matlab script.
File naming should follow the below format:
        Surname_Name_StudentID_LectureCode_HW5_1.m
Example: **Akca_Devrim_212CE2345_Comp4687_HW5_1.m**

Please upload your Matlab file, input "shape.bmp" file and "myTemplateImage.png" file
to "**Ödevler (HWs / Projects)**" section under the BlackBoard system.

Please use the "HW5" assignment link.

The deadline is until **December 16, 2024, Monday, 10:00 pm**.

All homework will be accepted by the Assignment link.

Please do <u>not</u> sent your homework through e-mail.

Please do <u>not</u> upload compressed (*.zip, *.rar, etc..) files. Upload each file separately.

Please prepare your homework alone. It is a self-study.

We use a special "code-checker" which can automatically detect all similar Matlab files. Do not make a copy/paste from an external source.

GRADING

Submitting the homework	+ 30
Submitting the input & template image files	+ 10
All correct answers	+ 60
Copy (Exactly same)	= 1
Copy (similar or identical)	= 10
Mistake in the Matlab file name	- 10
Mistake in the input & template image file names	- 10
Submitting a compressed (*.zip, *.rar, etc..) file	- 10
Submitting a web link	- 20

Late submission

< 2 hours	- 20
< 24 hours	- 40
< 48 hours	- 60
> 48 hours	= 0

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