

### **Benha University**

2<sup>nd</sup> Term (May 2013) Lab Exam Class: 4<sup>th</sup> Year Students

Class: 4<sup>th</sup> Year Students Subject: Computer Vision



### **Faculty of Computers & Informatics**

Date:21/5/2011 Time: 1 hours Version: B

# **Answer the following questions:**

# A- We learn how to detect corners using <u>Sum of squared differences</u>. Using Matlab do the following steps:

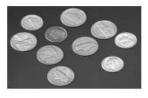
- 1- Read Image.
- 2- Compute the gradient components in X and Y directions.
- 3- Compute the products of the gradients at each pixel.
- 4- Sum the result's over the window size.
- 5- Compute Matrix A.
- 6- Compute Score.

# B- The following is a binary image.

	1	1			1			1	
	1				1			1	
1		1	1	1	1	1	1		1
1						1	1		
1		1	1	1					
1		1		1					
1		1		1					
1		1	1	1					
1									
1	1	1	1	1	1	1	1		

- (a) Label the connected components using Matlab assuming 4-neighbor connectivity.
- **(b)** Label the connected components using Matlab assuming 8-neighbor connectivity.

## **C- Using Matlab:**



Coins.png

Segment coins from the background, by generate a binary image where white (1) are coins, and black (0) elsewhere.

-No gaps in the coins.

-No extraneous white pixels in the background.

Good Luck