



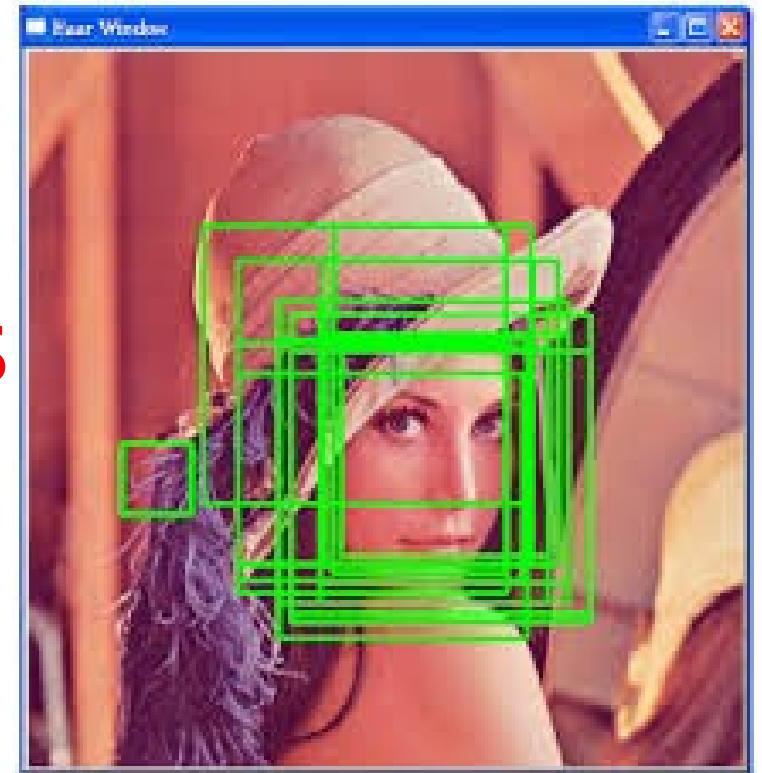
**An**

**g**

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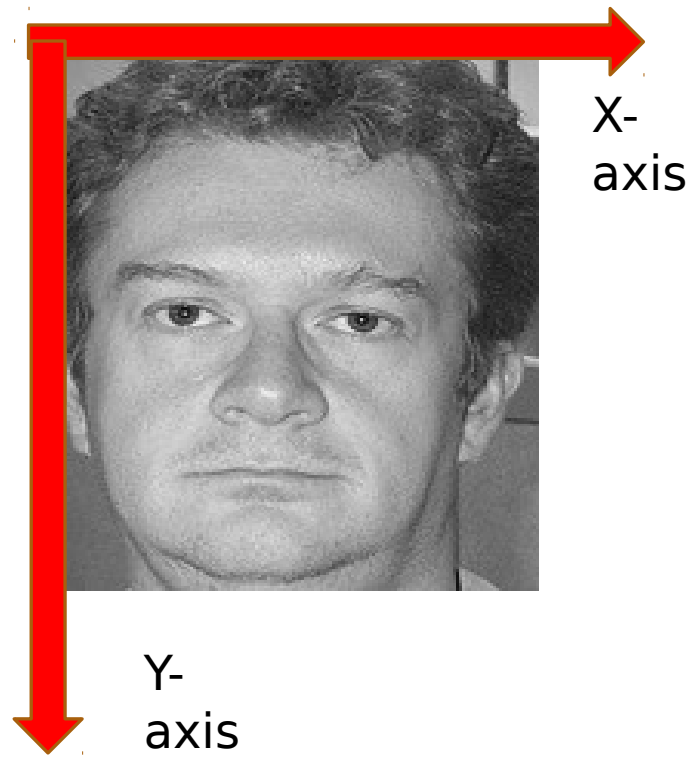
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Image Processing =  
**Image** + **Process**



# What is an image ?

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$$\begin{bmatrix} 220 & 125 & .. & .. & .. & .. & .. \\ 123 & .. & .. & .. & .. & .. & .. \\ ... & .. & .. & .. & .. & .. & .. \\ .. & .. & .. & .. & .. & .. & .. \end{bmatrix}_{56 \times 46}$$

# Types of Images:

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Used  
image is  
"Lena.jpg"

History ??



**RGB Image**



**Grayscale  
Image**



**Binary Image**

# Processing ??





# Processing ??

Setting  
Region of  
Interest(ROI)



# Processing ??



# Processing ??

Edge  
Detection





# Processing ??

Face  
Detection



# Processing ??



**Example**



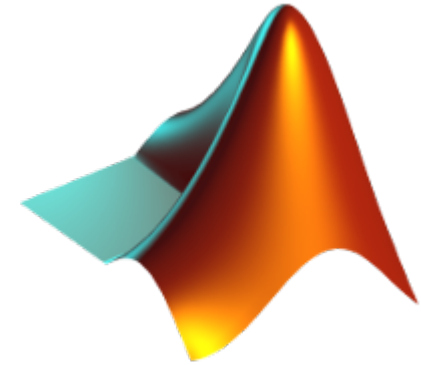
**ELECTRONICS CLUB IITK  
SUMMER PROJECT  
2013-14**

# How do we process images ?

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For  
Windows



**Matlab**

# Example

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## Using Open CV

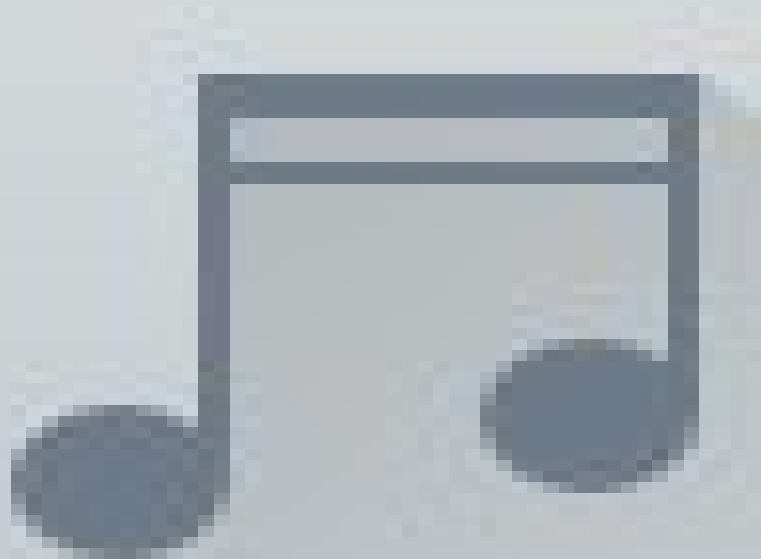




# Example

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## Using Matlab



# A few Project Ideas..

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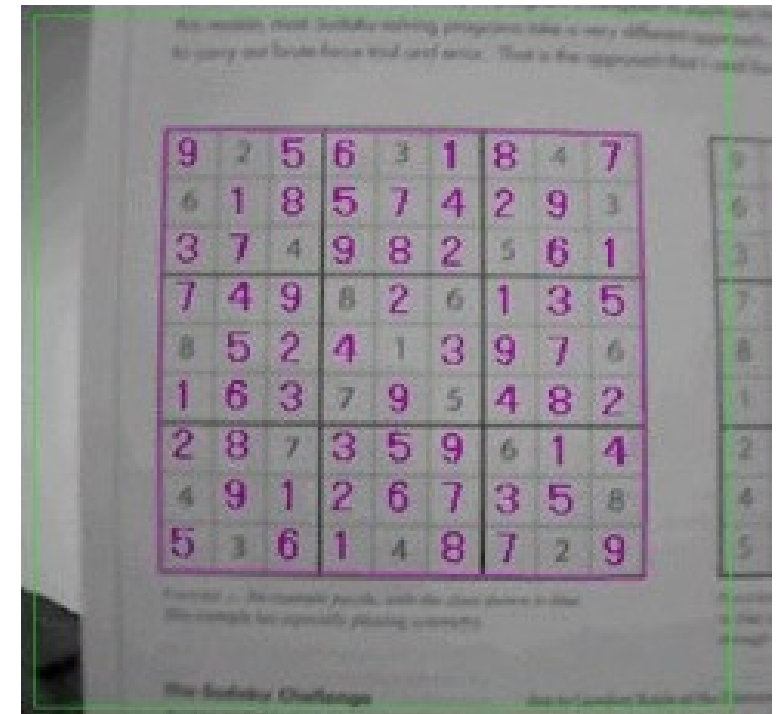
- ❑ A surveillance system for the



# A few Project Ideas..

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## □ Solving a Sudoku Puzzle



# A few Project Ideas

## □ Jigsaw Puzzle



# Useful links

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- ❑ [http://students.iitk.ac.in/eclub/assets/tutorials/ip\\_win8.pdf](http://students.iitk.ac.in/eclub/assets/tutorials/ip_win8.pdf)
- ❑ <http://students.iitk.ac.in/eclub/assets/tutorials/OPENCV%20TUTORIAL.pdf>
- ❑ <https://drive.google.com/folderview?id=0By6lsgZSRnhrYncySWVFTndGLWc&usp=sharing>



The background is a vibrant, textured orange and yellow. It is filled with numerous question marks of varying sizes and colors (orange, yellow, and red). On the right side, a human hand is shown reaching upwards, palm facing forward, with fingers slightly spread. The hand appears to be glowing or is set against a bright light source, creating a strong contrast with the background. On the left side, there is a large, stylized red question mark that serves as a backdrop for the main text.

**GOT  
QUESTIONS?**

**. . . WE HEAR YOU**