**Course: Advanced Bioinformatics**

**Module title: Computer Vision**

**Module no. : 18**

Vision is about discovering from images what is present in the image and where it is. Currently there is work going on in 5ws direction, i.e.

1. What is present?
2. Where is it present?
3. Who is present?
4. When it was present?
5. Why it was present?

Capturing Device is needed for image acquisition and we need methods from image processing to understand and analyze the image sequences. Computer graphics is related to generation of new images while image processing is destined to improve quality of images for human understandability.

There are three levels of image processing;

**Low Level:** Noise removal, image sharpening to make the image more visually appealing

**Mid-Level:** Object recognition, segmentation to identify individual objects in the image.

**High Level:** Scene understanding, autonomous navigation for application related to image processing.

Both human and machine vision has their pros and cons and limitations. By rule we can say that humans are much better at "hard" things while computers can be better at "easy" things but machine vision is more efficient than human vision.