Use Drawing figures as possible to illustrate your answers.

1. Define the digital Image.

Digital image is in the simplest term a coordinates(X, Y) and values (pixels) grouped together to make a figure.
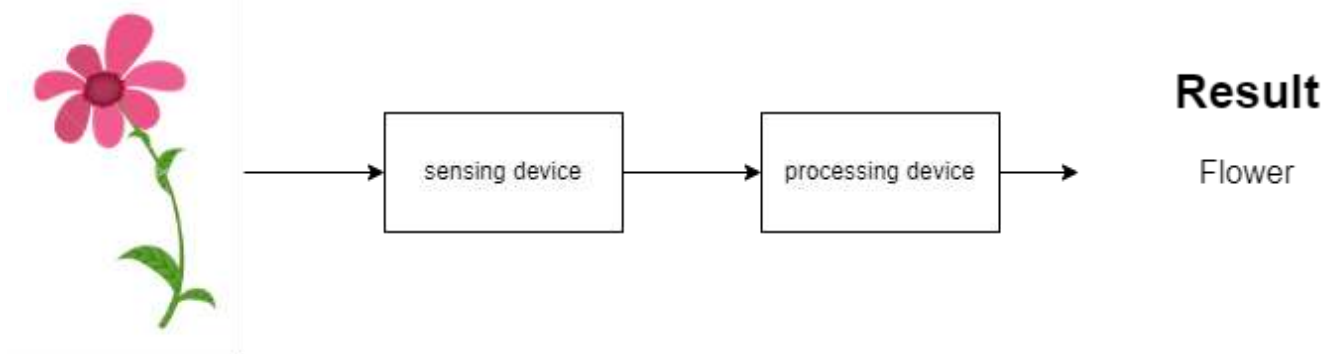
2. What is Digital Image Processing?

Applying changes to an image to change existing image.

3. What is computer vision?

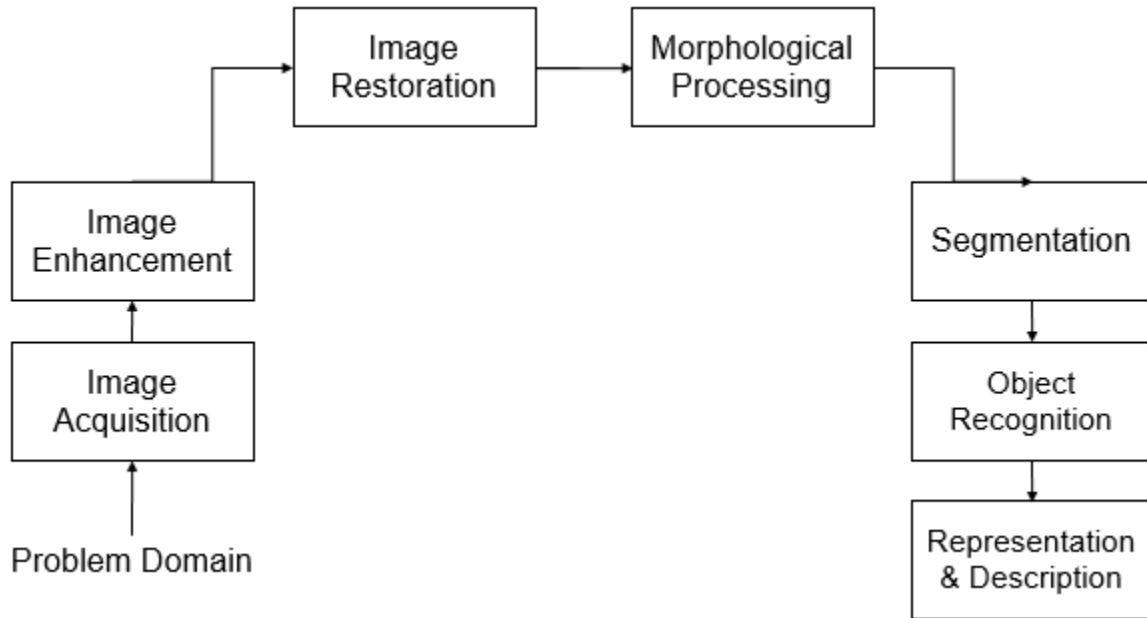How computers can be made to make sense from digital images or videos.

4. List 10 applications for digital Image Processing and 10 applications of computer vision.

applications for digital Image Processing	applications of computer vision
• **Image sharpening and restoration**	• Plant Disease Detection
• **Medical Field**	• Insect Detection
• **Pattern recognition**	• Flowering Detection
• **Video processing**	• Farm Automation
• **Color processing**	• Animal Monitoring
• **Microscopic Imaging**	• Tumor Detection
• **Transmission and encoding**	• Mask Detection
• **Machine/Robot vision**	• Visual Inspection of Equipment
• **Remote sensing**	• Movement Analysis
• **UV imaging**	• Cancer Detection

5. State Image types and imaging applications according to the type of energy source that form the image in use.

PNG(Portable Network Graphics): more precise reproduction of source images, or when transparency is needed.

JPEG(Joint Photographic Expert Group image): Good choice for lossy compression of still images

GIF(Graphics Interchange Format): Good choice for simple images and animations.

SVG(Scalable Vector Graphics) ideal for user interface elements, icons, diagrams.

WebP(Web Picture format) Excellent choice for both images and animated images. WebP offers much better compression than PNG

6. What are the fundamental steps in Digital image processing operations?

7. List and draw Components of a general-purpose image processing system.