

# Advanced MATLAB

**Duration : 2 weeks [5 days a week, 2 hours a day, total 20 hours]**

- Image processing:
  - ✓ Use of imread, imshow, rgb2gray, im2bw commands
  - ✓ mirror of image left to right or top to down
  - ✓ creating image using imagesc and colormap
  - ✓ R-G-B concept and color coding
- Simple animations:
  - ✓ Move point on the frame
  - ✓ bouncing ball application
  - ✓ sun-planet system
  - ✓ audio-video systems
- Sound processing and music:
  - ✓ Use of sound and play commands to create tones.
  - ✓ Overtone and fading up the tones.
  - ✓ Study of musical notes related to amplitude and frequency of sound waves.
  - ✓ Create musical tones on basis of piano notations.
- Timing in MATLAB:
  - ✓ tic – toc, cputime commands to calculate process time
- Mouse controlled Applications:
  - ✓ Button click events in MATLAB.
  - ✓ Difference between keyboard button press and mouse click.
- Advanced Graphical User interface:
  - ✓ Real Time Clock digital / analog clock
  - ✓ up/down counter
  - ✓ dice throw application
  - ✓ click join and fill – funpaint application
  - ✓ Birthday greeting card(sound and video/animations)