Tutorial 1 (ECE3086): Multimedia signal processing with Python

Question 1

Solve the if-else problem posted in the following website. Show evidence that you have successfully solve it
https://www.hackerrank.com/challenges/py-if-else/problem

Question 2

Solve the loop problem posted in the following website. Show evidence that you have successfully solve it. https://www.hackerrank.com/challenges/python-loops/problem

Question 3

Write a simple program to simulate the game rock paper and scissor. Example is available at
https://www.rock-paper-scissors-game.com/

Question 4

Write a short Python program to open the jpeg image **myImage.jpg** . Display the image with your program. Convert the image to gray scale and save it as myImage_gray.jpg . Use the opencv cv2 module for image processing. Other modules can be used too. Download the ImageJ software https://imagej.nih.gov/ij/download.html to preview the image. Examine the image properties such as image type, colour format, image resolution and bits per sample. Move the mouse over different parts of the image and examine the RGB colour value and the pixel coordinate values.

Question 5

Write a short Python program to read the audio file myAudio.wav . Play the sound with your program. Find the sampling rate. Modify the program to read sound from the microphone.

Question 6

Write a short Python program to open the video file myVideo.mp4 . Use the program to play the video. Convert the video to grayscale and save it as myVideo_gray.mp4. Repeat the same problem using video from your webcam. Use the opencv cv2 module for video processing.