

## Assignment (Color Model + Projection)

### Color Model

- 1a. What do you understand about monochromatic light? Suppose you want to design a monochromatic light of intensity 0.5 with RGB color model. Determine the parameters of the model to attain the above scenario?
- 1b. Mr. Ross is a xeroxer. He got a Microsoft Word file for printing. At first, he opened the file and checked it on the monitor. Then, he printed the file using a color printer. Choose the color models used in the devices used by Mr. Ross?
- 1c. For a CMY model, values are given as follows:  $C = 0.3$ ,  $M = 0.4$ , and  $Y = 0.6$ . Compute the Hue, Saturation, and Brightness of that model.

### Projection

- 2a. Explain the differences between perspective projection and parallel projection
- 2b. Mr. Roy is a wildlife photographer. While visiting the Amazon, he took a photo of a Jaguar. Unfortunately, he could not take a full-body photo of that Jaguar since it was very close to his position. Due to which projection mechanism this scenario happened? State your reasons.
- 2c. Suppose for a Perspective Projection, the origin is at the Projection Plane (PP) and the Center of Projection (COP) is at a distance of 175 units from the PP and the projection plane is on the xy plane. Calculate the coordinates of the projected pixel  $P'$  for the point  $P(35, 60, -300)$ ?