Assignment 02

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Exercise 1

a)

Defining directional vectors in horizontal and vertical axes:

$$\vec{u} = \frac{P_3 - P_1}{\|P_3 - P_1\|}, \quad \vec{v} = \frac{P_2 - P_1}{\|P_2 - P_1\|}$$

Calculating distances from the eye to the edges of the screen:

$$l' = \vec{u} \cdot (P_1 - P_e), \quad r' = \vec{u} \cdot (P_3 - P_e)$$

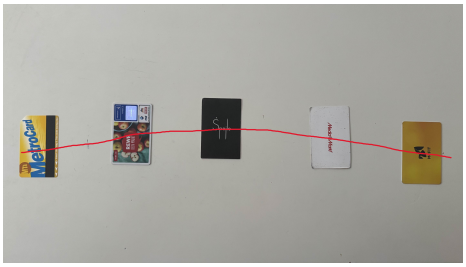
$$b' = \vec{v} \cdot (P_2 - P_e), \quad t' = \vec{v} \cdot (P_1 - P_e)$$

Transforming to the Near Plane

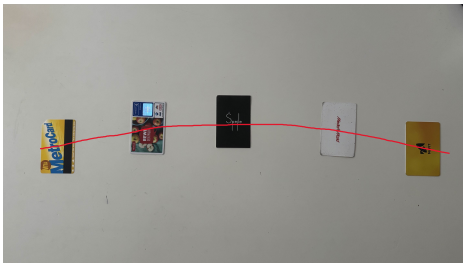
$$l = \frac{l'}{d} \cdot n, \quad r = \frac{r'}{d} \cdot n, \quad b = \frac{b'}{d} \cdot n, \quad t = \frac{t'}{d} \cdot n$$

b)

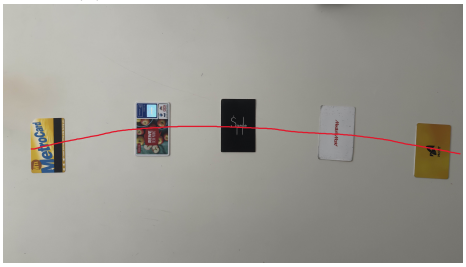
Exercise 2



(a) Close setup; face is near the table



(b) Middle setup approx. 30 cm



(c) Long setup approx. 50 cm