Virtual and Augmented Reality Fall 2023
Assignment 4: Depth of Field/Retinal Blur Rendering

Problem 1:
Write a python program that calculates and renders the retinal blur that you would see given the parameters f, D, S, and S1.

You can use this python notebook as a starting point:
https://colab.research.google.com/drive/10VGBQKGvrmgh2-gDRiS9eZDtKrnp0rZh?usp=sharing

Your program should
- Take inputs for the focal length of the eye, the aperture, the focal distance of the image, and the 'actual'(in this case the hypothetical) distance from the image to the eye (2 pts)
- Calculate and print the circle of confusion given the parameters (5 pts)
    - Test with these values: f = 17mm, D = 20mm, S1 = 30mm, S = 1000mm
- Apply the correct size Gaussian blur to an image given the circle of confusion you calculated (5 pts)
- Display the resulting image (3 pts)

Submission Guidelines:
- Please submit either a link to a Google Colab notebook **or** both a pdf of your code and results and the actual code file (.py)