HÁSKÓLINN Í REYKJAVÍK

T-869-COMP

Assignment 1

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To measure the processing time for one video frame, the program was run for five seconds and an average taken.
Just displaying a frame continuously takes 0.03468 seconds for each frame, making it 28.8 FPS.
After adding the functionality to display the brightest spot each frame takes 0.03459 seconds, so it takes slightly longer to process that.
The reddest point is the pixel with the highest RGB red value. Now, when marking the reddest point, the average time is 0.03506 seconds for each frame. When the frame is not displayed the average time drops down to 0.03333 seconds per frame, so it is shorter.
Using double for loop, the video becomes really laggy and each frame takes 0.3473 seconds to display. This indicates that the built in method is around 10 times faster.
When using the double for-loop method, the latency, estimated by moving a hand into the frame is around 3 frames, 1 second.
Using the double for loop method, the latency was found with the same method for IP camera on an Android phone. 33 frames with average processing time of each frame 0.7368 seconds, around 24 seconds of latency.
Using the built in method, there is no noticeable delay for the built in camera and around 2 seconds using IP camera from a phone.
I used the IP Webcam app from Google Play Store.

Defining the reddest pixel as humans would define it should be done using the HSV value with hue close to 0 or 360 and saturation and value rather high. I could not get this to work before the deadline so the "reddest spot"is often close to white in my method which is not great.