Solution for Assignment #3

Submission Dat	te: 2025. 02. 17.
Name:	

□ Experiment Setting

- O Cameras Setup
 - # of Cameras: 14 connections
 - > FPS for Cameras: 15fps is maximum
 - > Count fps on 2 minutes streaming
- O Setting for FFMPEG
 - ➤ Latency: (cannot set latency)

- Setting for GStreamer
 - > Latency: 200ms

- Setting for Visualization
 - > Resolution: [640, 480]
 - # of Visualizer: 14 visualizers in opency

☐ Problem #1. FPS Comparison in Sequential Case

• Result for FFMPEG in Frame Grab

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Avg.														

• Result for FFMPEG in Visualization

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.90	7.90	7.90	7.90	7.90	7.90
2	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85	7.85
3	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41
Avg.														

• Result for GStreamer in Frame Grab

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	15.0	15.0	14.9	14.9	15.0	14.9	15.0	14.9	15.0	15.0	15.0	15.0	15.0	15.0
	0	2	8	9	0	6	0	8	2	1	1	2	3	1
2	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	14.9	15.0	15.0	15.0	15.0	15.0
2	1	0	1	2	2	0	1	1	9	2	0	2	1	2
•	15.0	15.0	15.0	14.9	15.0	15.0	15.0	14.9	15.0	15.0	15.0	15.0	15.0	15.0
3	0	0	1	8	2	0	2	8	3	2	3	1	1	1
Avg.														

• Result for GStreamer in Visualization

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	7.34	7.33	7.31	7.34	7.34	7.33	7.29	7.34	7.34	7.35	7.35	7.35	7.34	7.35
2	7.42	7.41	7.42	7.42	7.40	7.42	7.40	7.42	7.42	7.39	7.41	7.42	7.42	7.41
3	7.45	7.44	7.42	7.46	7.46	7.44	7.44	7.46	7.46	7.46	7.46	7.46	7.46	7.45
Avg.														

☐ Problem #2. FPS Comparison in Parallel Case: Multi-Threading

• Result for FFMPEG in Frame Grab

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
-	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.
	18	21	30	17	19	19	18	18	31	30	16	18	18	11
2	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.
	18	29	31	18	20	18	18	19	33	22	20	20	16	11
2	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.
3	19	31	31	06	18	19	19	19	31	31	17	20	19	11
Avg.														

• Result for FFMPEG in Visualization

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	9.18	9.21	9.21	9.08	9.21	9.22	9.19	9.24	9.24	9.22	9.22	9.21	9.22	9.22
2	9.41	9.38	9.40	9.20	9.37	9.39	9.37	9.42	9.42	9.42	9.24	9.39	9.41	9.41
3	8.93	8.97	8.94	8.97	8.94	8.99	8.98	8.98	8.99	8.96	8.86	9.00	8.98	8.98
Avg.														

• Result for GStreamer in Frame Grab

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	14.9	14.9	14.9	14.9	15.0	14.9	14.9	15.0	14.9	14.9	15.0	15.0	15.0	15.0
	9	5	7	7	2	8	9	0	6	8	2	1	0	2
2														
3														
Avg.														

• Result for GStreamer in Visualization

Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	8.68	8.76	8.65	8.78	8.72	8.77	8.76	8.76	8.76	8.72	8.77	8.74	8.77	8.77
2														
3														
Avg.														

☐ Problem #3. FPS Comparison in Parallel Case: Multiprocessing

• Result for FFMPEG in Frame Grab

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
-	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.
	33	63	40	33	36	36	36	37	61	38	12	35	37	20
2	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.
	23	61	60	35	38	35	35	36	61	60	35	38	37	20
2	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.	15.
3	35	61	60	37	35	37	37	35	60	62	37	37	37	21
Avg.														

• Result for FFMPEG in Visualization

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	9.30	9.32	9.31	9.31	9.33	9.31	9.31	9.33	9.33	9.32	9.20	9.32	9.34	9.32
2	9.13	9.20	9.23	9.25	9.24	9.24	9.24	9.26	9.23	9.21	9.24	9.23	9.24	9.23
3	9.07	9.14	9.14	9.14	9.15	9.13	9.15	9.15	9.14	9.12	9.14	9.16	9.16	9.16
Avg.														

• Result for GStreamer in Frame Grab

Cam Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	15. 00	14.9 9	15. 01	15. 02	14.9 9	15. 01	15. 00	15. 02	15. 02	15. 02	15. 01	15. 02	15. 02	15. 02
2														
3														
Avg.														

• Result for GStreamer in Visualization

Cases	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	8.90	8.88	8.91	8.88	8.89	8.88	8.90	8.90	8.90	8.91	8.90	8.91	8.90	8.91
2														
3														
Avg														

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