

ECE 484

Final Project

Presentation (team): April 10, 2023, 11:59pm. Each team needs to submit one video (between 5 and 6 minutes) where two people take turn to present slides. You can use Zoom (One is the host and allows both to have privilege to share screen. Then you can record the presentation). Late submission is not accepted.

Demonstration (team): April 17, 2023, 11:59pm. One video (less than 3 minutes) to demonstrate your results related to each requirement. Late submission is not accepted.

Report (Individual): April 17, 2023, 11:59pm. (Late submission is not accepted). Turn in your report via Canvas.

If you submit your report/presentation/demonstration multiple times, I will grade the last attempt and your submission time will be the time for your last attempt. For presentation and demonstration, only one of your team members can submit videos for the presentation and demonstration, but has to indicate who your teammate in a write-up.

Requirement:

Use on board camera and monitor for your project. This design will allow you to pass camera data through the NIOS processor on the on-board monitor. Use your GUI and WiFi communication from previous Assignment to allow a user to:

1. Add an overlay image to every frame of the video stream from the on-board camera. The overlay image will be transmitted from the GUI on the computer. (Requirement #1)
2. Adjust brightness and contrast of the video stream from the on-board camera. The brightness and contrast values will be transmitted from the GUI on the computer. (Requirement #2)
3. Show the result on the on-board monitor. (Requirement #3)

Note: no open source code.

Demonstration and Presentation: 15% of final grade (Group)

Presentation Format:

1. Each group is allotted 5 minutes, to be divided equally among the group members. Each group should give a coherent presentation, which means: unless it is a medical or family emergency, each person has to present a portion. If anyone does not show up, the remaining team members have to cover his/her portion. Your grade will be based on the group performance. If you do not show up, you will receive 0 point, unless it is a medical or family emergency.

2. Format:
 - a. Introduction
 - Scope of this project
 - b. Design Methodology
 - How to accomplish each requirement (3 requirements in total).
 - c. Alternative Design
 - What item you want to optimize? How you optimize your design? Proof of improvement. (Experimental results to compare it to the original design).
 - d. Conclusion
3. Flow + timing
 - a. **You have 1 minute flexibility (a minimum of 5 minutes). Any contents after 6 minutes do not count.**
 - b. Each person needs to take a part of the presentation.

The grading rubric for the Presentation and Demonstration is shown below:

Concept/Category	Unacceptable (55%)	Marginal (70%)	Acceptable (85%)	Exceptional (100%)	Points
Design Methodology (30 points)	Lacks understanding of the design problem. Partially finish any one requirement	Shows understanding of the design problem. Completely finish any one requirement. Partially finish any one requirement.	Understands the design problem and objective. Completely finish any two requirements.	Shows good understanding of the design method. Completely accomplish three requirements	
Alternative Design (30 points)	Lack of alternative design in the design	Shows understanding of technical problem; Marginal use of alternative design without proof.	Adequate use of alternative design which are reflected in the final design with marginal proof.	Design takes into account all problems and the final design is optimized with proof	
Demonstration (25 points)	Partially finish any one requirement	Completely finish any one requirement. Partially finish any one requirement.	Completely finish any two requirements.	Completely accomplish three requirements.	

Presentation Format (15 points)	Poor organization, timing and formatting. Mechanical errors	Some degree of organization. Proper formatting, timing and relatively error free.	Well organized and properly formatted and error free. Good timing.	Communicates the key concepts effectively. Well organized and properly formatted and error free. Good timing.	
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Report: 20% of final grade (Individual; Late submission is not accepted)

Format is as the same as the lab assignment. However, you need to emphasize your contribution and have adequate write-up to address each requirement for the final project. It is an individual grade.

To be noted:

1. You need to put the copy of your code in the Appendix Section in your report. You can have a copy of your partial code to help you explain your experimental results and design method in other sections in your report if needed.
2. You need to put detailed comments for your code.
3. Follow the guidelines in the syllabus for writing the report. In each assignment, I put a lot of emphasis on “why” and “explain the results”.
4. In the section of Alternative Design, you need to state what the problem is, how you overcome it (e.g., alternative design/solution) with proof (e.g., experimental results to compare it to the original design) to meet the basic requirement, as well as how much improvement it makes.