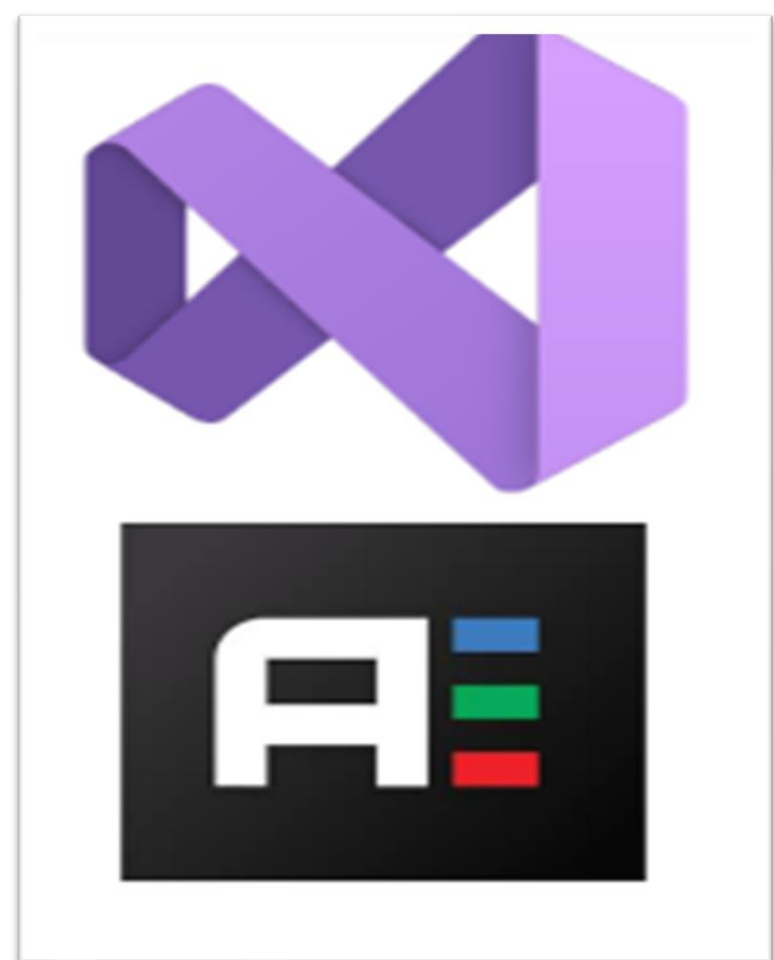




ArenaAssistant

Students: Keller Romer, Vanya Farzamipour, Shivani Patel, Jairo Adarmes, Dennis Alpizar
Mentor: *Jessica Ramella-Roman, Ph.D. Florida International University*
Instructor/Faculty: *Masoud Sadjadi*, Florida International University

PROBLEM

Polarized light is a powerful tool that has been utilized in glasses, radio and microwave signals, quantum cryptography, and in our team's case, fertilization procedure. Polar ized light can be used to view the extracellular medium and is particularly responsive to collagen, the protein mostly liable for proving the structural support to the skin, bones, and collective tissues. This application of polarized light can help view information detailed to this reaction and can allow in the new possibilities.

VERIFICATION

The software underwent inspection by QA testers after new features were implemented, being careful to reach acceptance criteria for every button available to them. Tests fell under these categories:

- **Readability** – Users foresee what a button should do
- **Usability** – Users can properly understand how to use the button with instant feedback
- **Functionality** – Feature works as intended, noting any oddities and bugs that occur

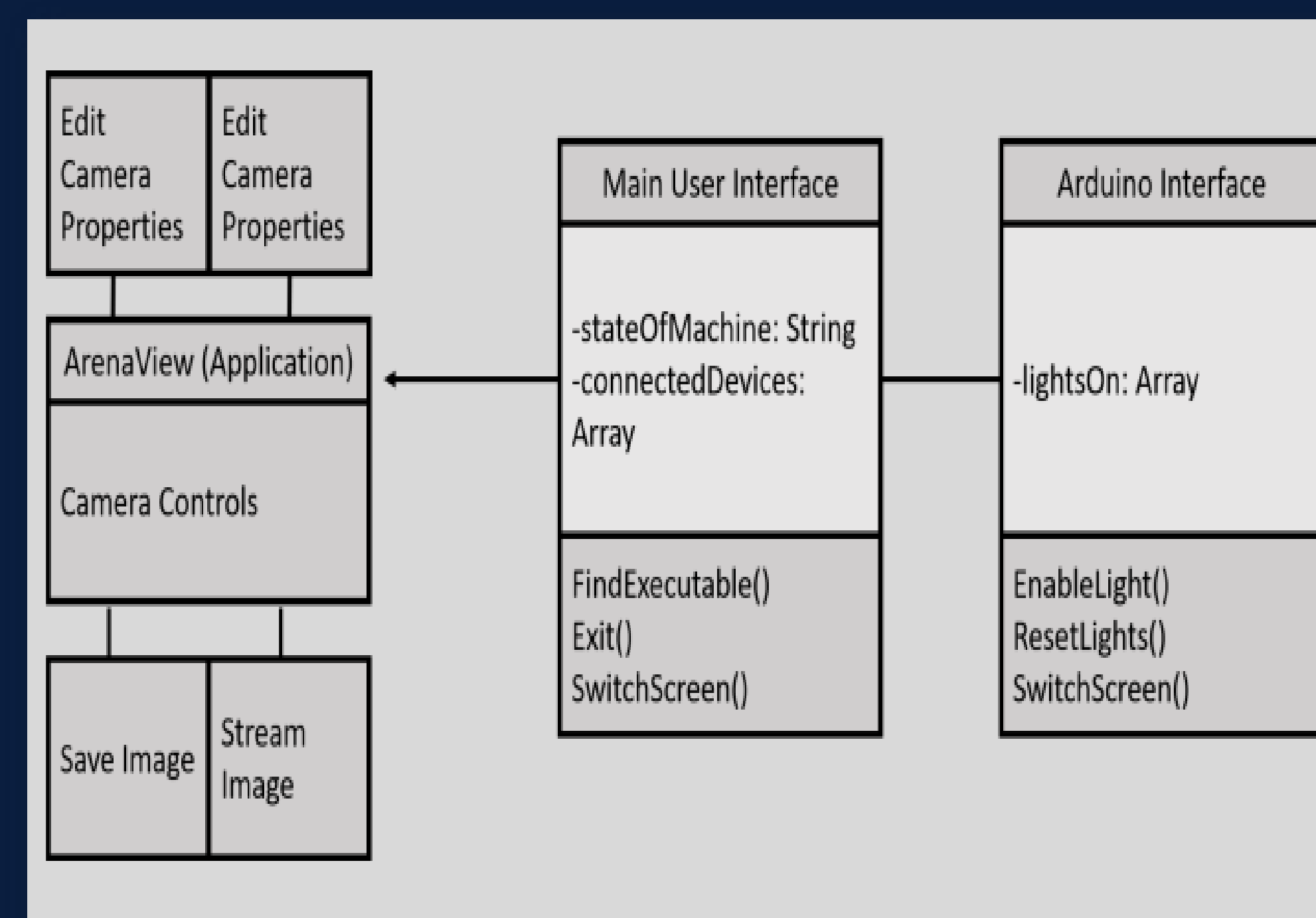
SUMMARY

Our program, ArenaAssistant, is a GUI model that has lots of room for expansion for more features. These are supported by its framework, QT, and its relatively simple interface that can allow for features to be added without interrupting any previous progress. It is also more lightweight and manageable than the previous implementation through MATLAB, as it can be launched in its own executable.

CURRENT SYSTEM

A specialized GUI is needed to control technologies such as Lucid Vision Labs' polarization camera and LEDs of Arduino circuits which are used to build the model. The current system, based upon a MATLAB GUI, runs into issues like crashing impulsively and irregular packet loss. This project aims to resolve these issues and offer an immaculate product.

SYSTEM DESIGN



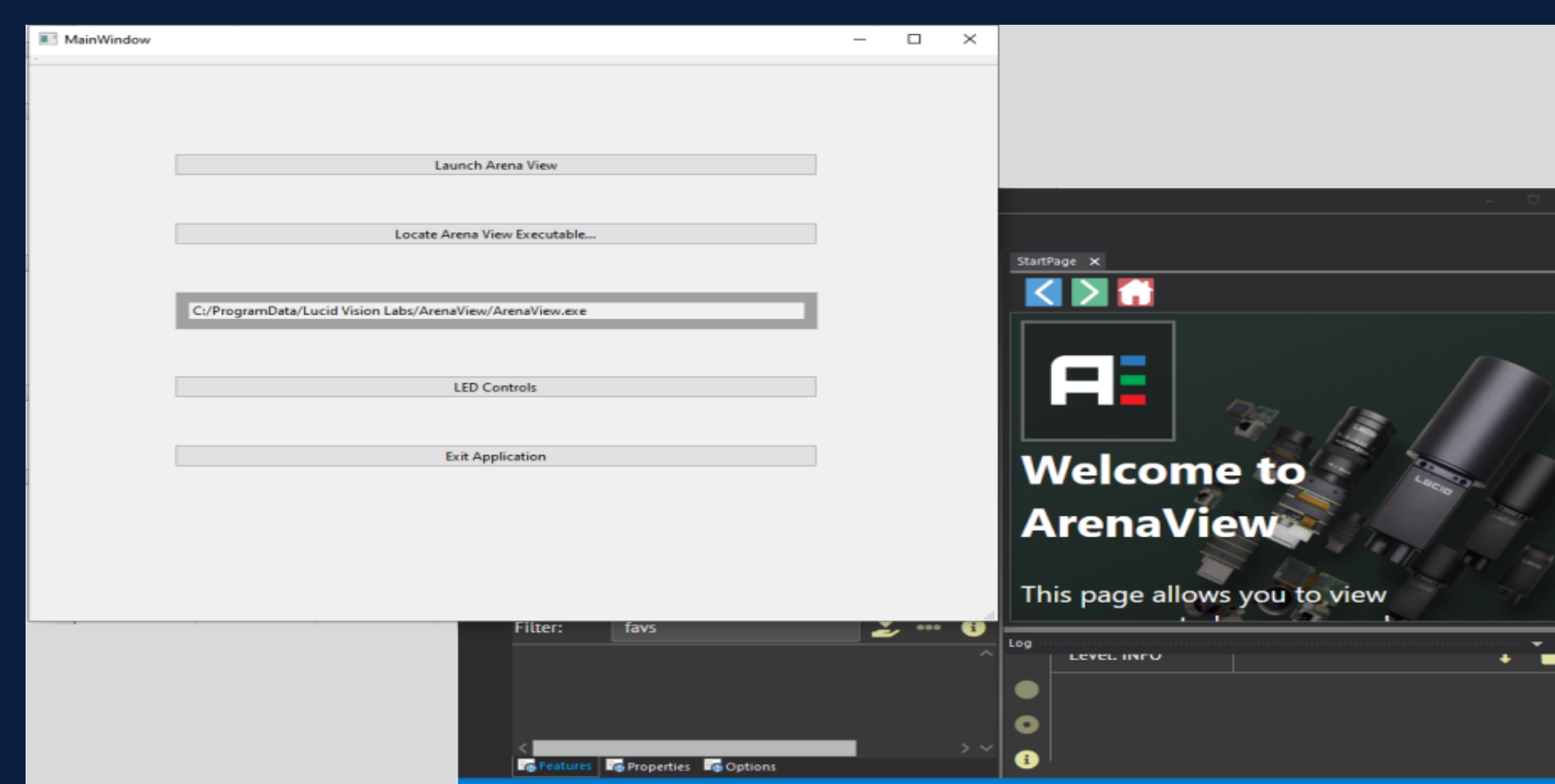
REQUIREMENTS

- Users will be able to launch ArenaView through the GUI, allowing for access to camera controls
- Users can access Arduino controls (LED controls) through a special page in the GUI
- Users can preview images that were saved from the camera
- Users can edit camera properties like camera frame rate/exposure time

IMPLEMENTATION

- The GUI is written in C++ through the QT framework
- The library for Lucid Labs camera access was provided by Arena SDK, a product of Lucid Vision Labs
- The GUI for camera controls is accessed through Arena View, a program by Lucid Vision Labs
- Arduino controls were provided by Arduino IDE

Screenshots



ACKNOWLEDGEMENT

The material presented in this poster is based upon the work done by (Capston-1, 2 team members). Special thanks to our product owner and mentor, Jessica Ramella Roman, and our instructor Masoud Sadjadi.