Opportunity and Significance
There is a large market for such a product for all individuals who own plants and enjoy vacations or long-term trips. While your neighbors are the most common method for caring for such beings while absent, an automated system proves to be much more reliable. There is further opportunity to adapt the system to different markets as well. This includes an outdoor system as well as a fully developed phone application.

Technical Approach, Accomplishments and Results

Technical Objectives
• Solar Powered.
• Overwatering protection.
• Adjustable to specific plant watering needs.
• 5 plant capacity.
• Standalone system.
• Interval-based checking.
• 2 week standalone watering capacity.

Next Steps for Development and Testing
For an easier user interface, we would design a phone-based application to adjust our system’s parameters to each customer’s needs. Also, we would aim to adapt the system for outdoor use with a water reclaimer to further reduce our environmental impact while increasing the versatility of the system.

Commercialization Plan & Partners
In order to perform under full production and commercialization, we would need to lower the overall cost of our product to be in more direct competition with products on the market. Although our design is unique, a partnership with a company such as Adafruit to get components required for our system at a cheaper rate would greatly reduce our manufacturing costs. If we can reduce the cost, the adaptability of our system would allow us to be competitive in our desired market.

References

Related Work and State of Practice
• Fluid Dynamics
• Thermal-Fluid System Design
• Manufacturing Processes
• Dynamic Modeling and Controls of Engineering Systems

Acknowledgements: Dr. Golam Newaz & Sanket Mundhe