



IT TAKES A VILLAGE: HOW ENGINEERING CAN HELP SPEEDY THE TURTLE WALK AGAIN

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PROJECT SUMMARY:

This project is dedicated to improving the quality of life for Speedy, a tortoise who was run over by a car and left with paralyzed back legs. In connection with All Things Wild animal rehabilitation in Georgetown, Speedy was greatly aided but sees significant limitations to his daily movement due to his accident. Although he now has a fully healed shell, without support, Speedy's ability to move freely and engage with his environment is severely limited. Our goal is to design and construct a custom-built mobility aid that restores his independence, reduces physical strain, and increases his overall comfort. At the same time, we aim to create a replicable design that can benefit other tortoises facing similar challenges.

While prosthetic and mobility devices have been developed for sea turtles, their anatomy and movement patterns differ significantly from those of tortoises. This leaves a critical gap: existing designs are not well suited for tortoises like Speedy. By focusing specifically on tortoise mobility, this project seeks to expand the scope of reptile prosthetics and address needs that have so far gone unmet.

Our background in engineering and electronics motivates and equips us to see this project through to completion. The technical knowledge we have gained in SU classes allows us to design and test a device that integrates both structural and functional considerations. By combining these skills with compassion for Speedy's situation, we are confident that we can develop a practical solution that is not only effective but also adaptable for others. The project will involve several stages. First, the designing and prototyping stage where we will carefully assess Speedy's mobility limitations and define the physical requirements for a supportive device. Next, we will design a build that enhances Speedy's ability to move independently, while ensuring stability and safety. Throughout the process, we will document each step in detail so the design can be improved once a limitation is assessed with the prototype. The process will be notated and written to allow for replications or modifications by others working with tortoises in similar circumstances. By the end of the project, we aim to deliver a fully tested and functional device for Speedy, alongside thorough documentation of the methodology. This documentation will serve as a guide for future applications, amplifying the project's impact beyond a single animal and offering a valuable resource for others seeking to help tortoises with mobility impairments.
