

# AFRICAN ECOSYSTEM

New Mexico

Supercomputing Challenge

Final Report

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Team Number: DesertAcad-5

Desert Academy

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## **Team Members**

Francisco Diaz

Caden Kalfin

## **Teacher**

Mario Ruiz

## **Project Mentor**

Josephine Kilde

**Caden's Email:** [caden.kalfin@gmail.com](mailto:caden.kalfin@gmail.com)

**Francisco's Email:** [arow47703@gmail.com](mailto:arow47703@gmail.com)

### **An Executive Summary That Is Shorter Than One Page:**

This project is based on an animal ecosystem taking place in South Africa. There are 5 animals: leopards, lions, impalas, buffalos, and elephants. Basically there are 3 herbivores and 2 predators. It works like this: all the herbivores eat grass such as buffalos, impalas, and elephants. The predators eat either buffalos and impalas. If one of the predators gets near an elephant, the elephant will squash them. And with a few buttons you can control the ecosystem and experiment yourself!

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### **Our Most Significant Achievement:**

Our best achievement was when we finally figured out the "eating" code. For example: Before we had our most important code, we could not make the predators eat the prey and that was frustrating. But then we decided to inspect a model in the models library called "Sheep Wolf Predatory" and we finally found code to model. So that was our biggest Achievement in this project.

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### **A statement of the problem that you investigated:**

We researched what could affect the livelihood of animals and we saw poachers were a main factor. Poachers are animal killers which lowers their population. We tried to include poachers and we also tried to get more information on poachers.

### **A Description of the method you used to solve your problems:**

We were looking on various websites to see what affects decreases in animal's populations, and we found one. And we studied the model code again and again until we understood what the code meant after that we put all the code together and added poachers.

**Acknowledgments:**

We have got to give some credit to a bush ranger in South Africa named Luke Street which taught us a lot about animals and ecosystems, our supporting teacher Mr. Ruiz, who helped us through a lot when we had our difficulties and problems and supported us.

**Results of our study:**

We learned that animal ecosystems are very delicate and an intrusion from an unexpected variable like poachers can affect them greatly. We also found almost every animal species dies at some point in the ecosystem if its not kept in balance.