Optimization of Genus Aves Through Genetic Algorithm

*Anjali Gupta, Penny Brant*

**Area of Interest:**Genetic algorithms, graphs, saving endangered species

**Objectives:**

* Helping the endangered species of flappy bird in evolving so it can survive
* Visualization of a bird moving through an obstacle course
* Genetic Algorithm that modifies traits of birds to find the bird that can travel the farthest.
  + Optimization Areas:
    - Wingspan: The height the bird increases with every wing flap
    - Speed: The horizontal speed at which the bird moves forward
    - Size: The size of the bird will determine if it will be able to pass through the pipes
    - Mass: force of gravity varies dependent on mass

Our overall objective is to determine the most optimal flappy bird that is able to travel the farthest.

**Knowledge Needed:**

* What is a genetic algorithm?
* Processing knowledge for creating the visual representation
* How to find the lengths of paths in graphs
* How to manipulate and move through graphs

**Design Limitations:**

* Current program design will not allow for user input
* Generating a very detailed and realistic design implementation