Lab 08

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3/12/2021

## LOGISTIC GROWTH BACKGROUND

This document contains the functions about the logistic growth model that measures the populations abundances over time given an intrinsic growth rate, starting population, carrying capacity, and generations. You can find the final metadata and results file [here](https://github.com/smgering/CompBioLabsAndHW/tree/main/Labs08/LogisticGrowth.csv)

## LOGISTIC GROWTH EQUATION

The logistic growth equation is the following:  
   
n[t] <- n[t-1] + ( r \* n[t-1] \* (K - n[t-1])/K )  
  
Where n[t] is the abundance of the population at time t, n[t – 1] is the abundance of the population in the previous time step, r is the intrinsic growth rate of the population, and K is the environmental carrying capacity for the population.

## LOGISTICAL MODEL FUNCTION

# Function Definition  
Logistic\_Growth <- function( r, K, t, n) {  
 abundance <- rep(n, t)  
 for (i in 2:t) {  
 abundance[i] <- ((abundance[i-1] + ((r \* abundance[i-1]) \* ((K - abundance[i-1]) / K ))))   
 }  
 return(abundance)  
}  
  
# Demonstration of Usage with numerical information about each component in the function  
Logistic\_Growth(0.8, 10000, 12, 2500)

## LOGISTICAL MODEL OF THE PLOT

