A Population Model

1 Introduction

Below is a table of birth and survival rates for female sheep in New Zealand[1].

Age (years)	Birth Rate	Survival Rate	Population in 1965
0-1	0.000	0.845	120
1-2	0.045	0.975	156
2-3	0.391	0.965	175
3-4	0.472	0.950	201
4-5	0.484	0.926	186
5-6	0.546	0.895	153
6-7	0.543	0.850	134
7-8	0.502	0.786	126
8-9	0.468	0.691	98
9-10	0.459	0.561	76
10-11	0.433	0.370	52
11-12	0.421	0.000	22

Table 1: Birth and Survival Rates for Female New Zealand Sheep

In this activity you will construct a discrete population model for female sheep in New Zealand.

2 Objective

The goal of this activity is to estimate the population of female sheep in New Zealand in 1975 using the values in Table 1.

3 Grading Criteria

This project is worth a total of 10 points:

- (3 points) Introduction and Discussion - Introduce the problem and explain how your algorithm/function works.
- (5 points) Algorithm and Implementation - The algorithm designed and implemented in Python solves the problem. You will not receive credit for a brute-force method.

[1] G. Caughley, "Parameters for Seasonally Breeding Populations," Ecology 48(1967)834-839

- (2 points) Neatness and Timeliness - Your write-up is neat, clear, and turned in on time. The assignment must be typed (as a Jupyter notebook) and completed by 11:59pm on November 25th.