INSTRUCTIONS TO USE LHT_CI.py

The file LHT_CI.py is a Python3 program that performs the calculations.

1. Data should be in a .csv file with only three columns, for instance:

t	n	h
1	50	0
2	50	0
3	50	0
4	49	0
5	49	0
6	49	0
7	49	0
8	48	0
9	46	0
10	44	28
11	44	28
12	44	10
13	43	118
14	41	111

The **first column** are the units of time. The **second column** contains number of individuals alive at that unit of time. The **third column** contains offspring production in that unit of time.

2. Inside the code, modify the alpha required and change the file name:

```
alpha = 0.05                # 1-alpha is the confidence level of CI,
fnam =  "test_data.csv"         # Change file name.
                            # (Put data file and Python program in same folder)
```

3. Run the program, an example output is:

```
Initial number of individuals N :  50                          ----(Initial number of individuals)
Offspring size K :  2430                                       ----(Total offspring)
R0 :  48.6                                                     ----(R0, the basic reproductive number)
Longevity :  [ 28.34   302.0644  23.5226  33.1574]    ---- (mean variance and CI for longevity)
Generation time :  [ 26.884 151.77  26.3945 27.374] ----(mean variance and CI for gen. time)
r :  [0.20209, 0.198870, 0.2055]                               -----(mean and CI for r)
lambda:  [1.223964994, 1.22002366, 1.22814391]   -----(mean and CI for lambda)
Saved to:  test_data_added.csv                          -----(outcome was saved to this file)
```