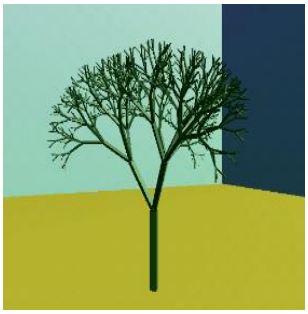

Cicada Cycles

GATS Programming Challenges

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Introduction

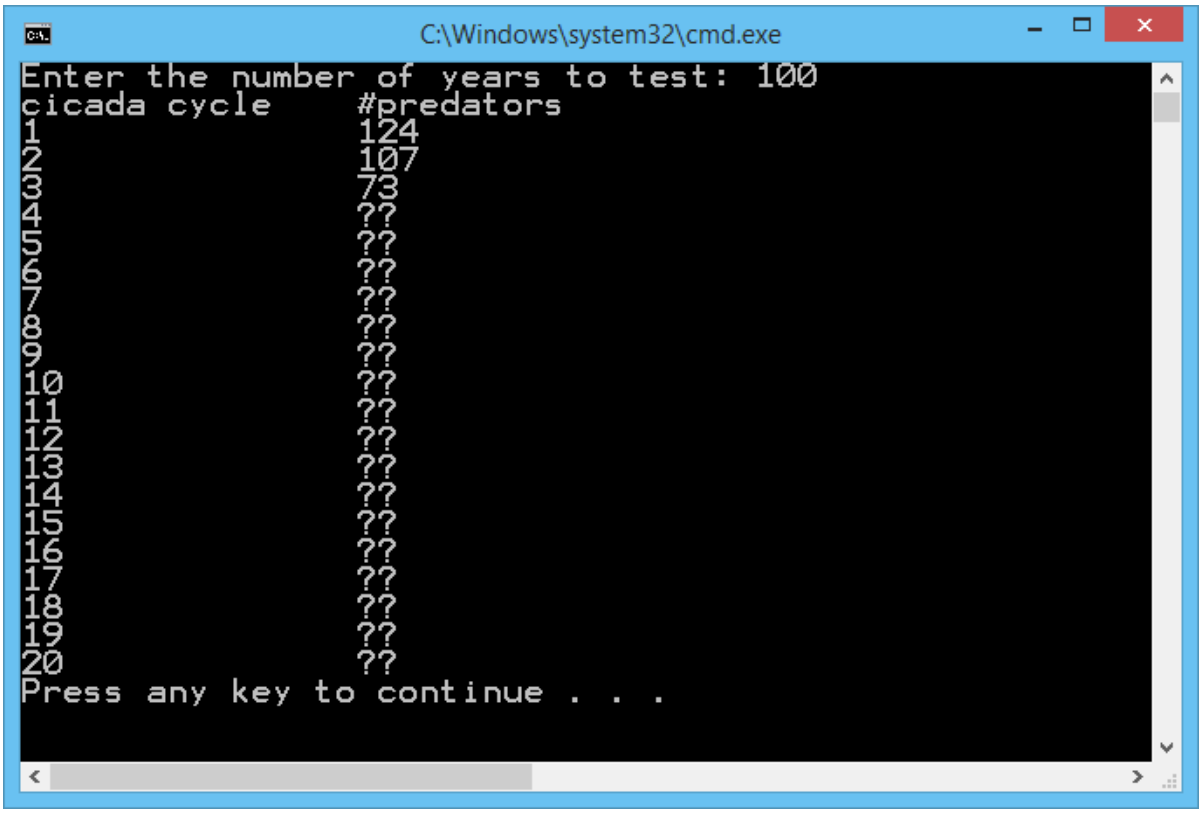
Many insects lay dormant underground for years only to emerge for a few weeks, where they eat and procreate. Predator insects commonly have life cycles of 2, 3, 4, and 6 years (meaning they emerge every other year, every third year, every fourth year, or every sixth year). Cicadas (genus *magicicada*) want to avoid as many of the predators as possible and have evolved to have life cycles of 11, 13, or 17 years.

The Challenge

Write a program that tries all the possible cicada life cycles from one to twenty years, counting how many times in a period of 100 years the cicadas will encounter 2, 3, 4, or 6-year cycle predators.

Optionally, allow the user to enter the number of years in the trial.

Example



I'm hiding the results above 3… (I don't want to spoil the fun).

The questions

1. What are the four worst year cycles for cicada survival?
2. What are the four optimal year cycles for cicada survival?
3. What is special about numbers of optimal year cycles?
4. Why do you think this occurred?

The Solutions

- Python
- C
- C++
- Java