

CS110: Computer Programming Lab

Department of CSE

IIT, Guwahati

Module 01 Stage 02 Exercise 03

Please read Module 01 Stage 02 Practice Drill document before you read this document.

Problem description

On 01 January this year, a farmer received a newly born rabbit pair from his friend. Each pair needs one calendar month to mature. A matured rabbit-pair delivers exactly one rabbit-pair on the last day of the month.

How many rabbit pairs the farmer will have on the first day of the next year? Your program must have fewer than 7 variables and must rely only on the assignment statements.

Guiding instructions

The problem is easily solved by a series of assignment statements that update the appropriate variables once for each month at month start. The population of rabbits is divided in two groups: a count of the mature pairs (m), and a count of baby pairs (b). On any day the total population is the sum of these two numbers.

As you can see, the count of mature pairs next month will be equal to the total pair count this month. At the same time, new pair born pairs in the next month will equal the count of mature pairs this month.

See the following table for details.

First day of Month	Count of mature pairs	Count of baby pairs	Population in pairs
1	0	1	1
2	1	0	1
3	1	1	2
4	2	1	3
5	3	2	5
6	5	3	8

In writing your program, you must carefully select the variables and their purpose. Use appropriate names for the variables. In addition, you must determine how you will update your variables for each month. Finally, decide how many updates the variables require before you print the answer?