

Marked lab exercises

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1 Purpose

First term marked labs consist of 5 exercises. All 5 exercises are worth 15%. this will allow students to practise use of arrays and conditionals and iterations, loops

Exercise 1— worth 3%

Given the following scenario: A family consisting of 10 couples decide they don't want to buy a Christmas present to everyone in the family but, each member of the family will buy a nice present to one and only person. The five couples are as follow:

$couple_1 = (x_1, y_1), couple_2 = (x_2, y_2), couple_3 = (x_3, y_3), \dots, couple_{10} = (x_{10}, y_{10})$

You were asked to write a program called *ChristmassDraw.java* for their Christmas draw. should generate two draws; this year and next year's draw taking account the following constraint:

- Couples are not allowed to buy for each other .i.e. x_i is not allowed to to buy for y_i and vis-versa
- This year's draw combinations are not allowed in next year's draw .i.e. if x_i is buying for x_j, y_j this year then x_i is not allowed to buy for x_j, y_j next year

The output of your program should be something like:
List of this year's draw:

- y_4 is not allowed to buy for y_2
- x_3 is not allowed to buy for y_5
- y_5 is not allowed to buy for x_1
- x_2 is not allowed to buy for x_3
- y_3 is not allowed to buy for y_1
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List of next year's draw:

- y_2 is not allowed to buy for x_4
- x_4 is not allowed to buy for y_3
- x_5 is not allowed to buy for x_2
- y_1 is not allowed to buy for x_5
- x_1 is not allowed to buy for y_4 .
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