

Problem

Some applications from vendors are allowed to be installed on multiple computers per user with specific restrictions. In our scenario, each copy of the application (ID 374) allows the user to install the application on to two computers if at least one of them is a laptop. Given the provided data, create a utility that would calculate the minimum number of copies of the application the company must purchase. Examples

Example 1

Given the following scenario

ComputerID	UserID	ApplicationID	ComputerType	Comment
1	1	374	LAPTOP	Exported from System A
2	1	374	DESKTOP	Exported from System A

Only one copy of the application is required as the user has installed it on two computers, with one of them being a laptop.

Example 2

In the following scenario

ComputerID	UserID	ApplicationID	ComputerType	Comment
1	1	374	LAPTOP	Exported from System A
2	1	374	DESKTOP	Exported from System A
3	2	374	DESKTOP	Exported from System A
4	2	374	DESKTOP	Exported from System A

Three copies of the application are required as UserID 2 has installed the application on two computers, but neither of them is a laptop and thus both computers require a purchase of the application.

Example 3

Occasionally the data may contain duplicate records, in the following scenario

ComputerID	UserID	ApplicationID	ComputerType	Comment
1	1	374	LAPTOP	Exported from System A
2	2	374	DESKTOP	Exported from System A
2	2	374	desktop	Exported from System B

Only two copies of the application are required as the data from the second and third rows are effectively duplicates even though the ComputerType is lower case and the comment is different.

Expectations

Please provide a solution that calculates the minimum of copies of the application with ID 374 a company must purchase and include some unit tests to show that your code has basic test coverage.

Note:

- This test is to assess your ability to write world class production code that would be included in our Flexera products
- Please write this code to the standard you would expect of a world class product
- Please write your tests to the level that you would expect to write for production code
- Please imagine this assignment is a small part of a larger product, and include the degree of OO modelling you would expect to include if this assignment was part of your work at Flexera
- Please design and write this code to cover the full set of non-functional concerns you would expect from a software product with high quality

Assumptions

You will not have to consider unexpected situations such as empty values, computers with multiple users or computers that are both desktops and laptops.