

Software design and architecture problem:

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Klingelberg produces a number of machines that they sell to customers, and each machine uses one or more Assets. All Assets are given series number like S1, S2, S3, ... etc. which is incremented each time the management approves new series proposed by design department.

Consider the file matrix.txt which contains information about which series of various Assets are being used by each type of machine sold by Klingelberg.

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C300, Cutter head, S6
C40, Cutter head, S7
C300, Blade safety cover, S10
C60, Blade safety cover, S11
C300, Deburring blades, S6
C60, Cutter head, S8
C60, Clamping fixture, S2
C40, Blade safety cover, S11
C40, Shutter gripper, S3
```

Each line of this file consists of comma separated fields. The first field is a Machine name, second field is an Asset name and the third field is the series number of that asset. The example given above indicates that the C300 machine uses Asset named "Cutter head" of series S6, the C40 machine uses Asset named "Cutter head" of series S7, and the machine C300 uses Asset named "Blade safety cover" of series S10 and so on. For the purpose of this program, assume that all Series numbers are of the form S<digits> where <digits> represents one or more decimal digits.

Write a C# service program that will read this file and exposes below functionalities.

- Get the list of Asset names for given machine type.
- Get the list of all machine types on which given asset is used.
- Get the machine types which are using the latest series of all the assets that it uses.

Note: if an Asset has only one series, then that series is obviously considered the latest series.

Thus, in case of the example input above, the output of your program should be: C60
Because C60 machine is using 3 Assets and it is using the latest series of all 3 of those Assets.
C300 is not listed because it is using oldest series of Asset named Cutter head as well as the Asset named Blade safety cover, and C40 machine is not listed because it is using an older series of Asset named Cutter head.

Design classes in such a way that input format is independent of the main logic so that if decided to use JSON file instead of txt file then only piece of code which is performing IO operations, will get affected. All other code remains as it is.

Later on, we have to create the Web Api to consume above service to expose the functionalities via apis.

Kindly add Swagger document to perform above operations on exposed apis.