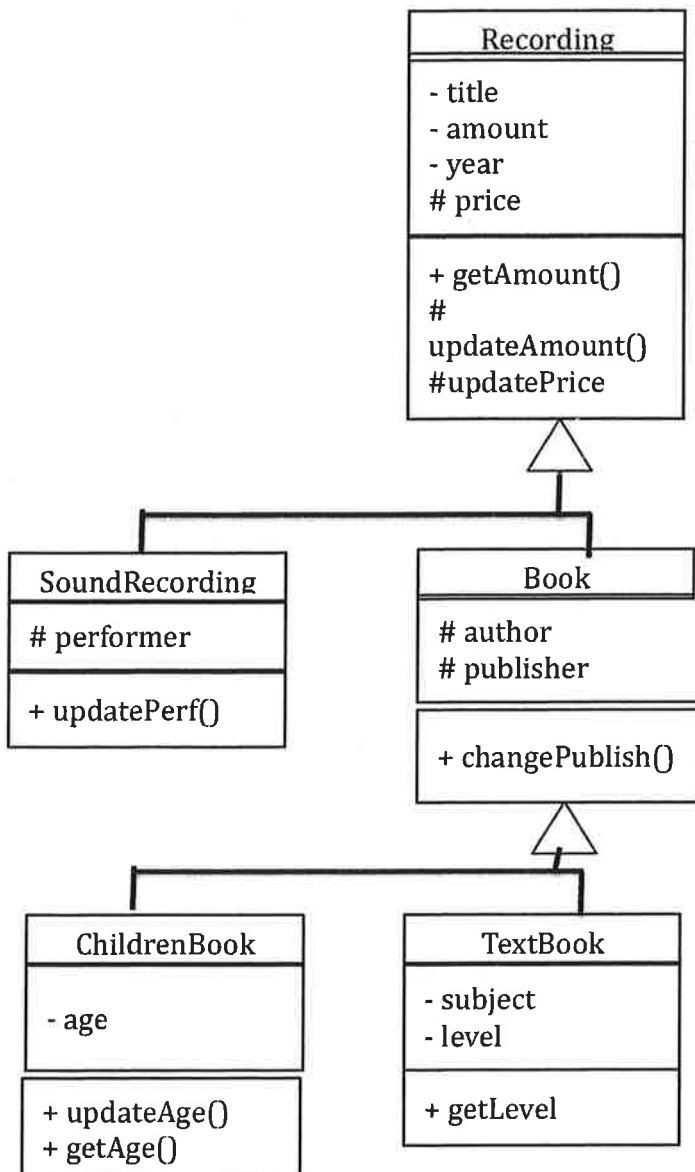


1. Class structure is following. Classes are designed with Liskov substitution principle

- What the principle tells us about TextBook-objects?
- What attributes a TextBook-object has?
- What are the methods of TextBook-object that an outsider can call?
- What are the attributes and methods that can be used in the code of class Book?
- We have a Book-object. Can it behave as i) Recording-object ii) SoundRecording-object iii) ChildrenBook-object?



2. We need a object of class ClassSomething.

It has three attributes A1, A2 and A3. First, all have value 0.
It has four public methods:

method1:

```
IF A3 = 1 THEN
  do nothing
ELSE
  IF A1=0 and A2=0 THEN
    change A1 to 1.
  ELSE do nothing.
```

method2:

```
IF A3 = 1 THEN
  do nothing
ELSE
  IF A1 =1 and A2 = 0 THEN
    change A2 to 1
    call method3
  ELSE do nothing.
```

method3:

```
IF A3 = 1 THEN
  do nothing
ELSE
  IF A1 =1 and A2 = 1 THEN
    change both A1 and A2 to 0.
  ELSE do nothing
```

method4:

```
If A3 =0 THEN
  change A3 to 1
ELSE
  change A3 to 0
```

Design a state machine diagram. You need two states "A3=0" and "A3=1" Another has substates and history pseudostate.
Piirrä tilakonekaavio. Tarvitset tilat "A3=0" ja "A3=1" Toisessa on alitiloja ja historiapseudotila.

3. BankAccount is a class with public methods:

getBalance()

withdraw(amount) -*nostaa*

deposit(amount) -*panna*

lockAccount()

closeAccount()

The problem is that only first two methods are allowed for account owner. Instead, all methods are allowed for bank staff.

Draw a class diagram. Use Read-only Interface -design pattern in order to solve problem.

4.

UML:ssä attribuutille määritelty:

- primitiivitetotyyppi
- itsehty datatyyppi
- oliotyyppi.

UML definitions of attribute type:

- primitive datatype
- own datatype
- object type.