WORKSHOP 01

Exercise 1

1. Design and code a class **Fan** that holds information of a fan.

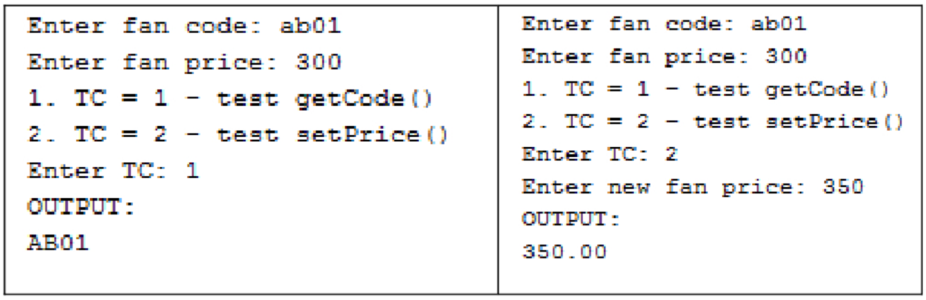
Fan
-code:String -price:double
+Fan () +Fan (code:String, price:double) +getCode():String +getPrice():double +setPrice(price:double):void

Where:

- Fan() - Default Constructor.
- Fan(code:String, price:double) - Constructor, which sets this.code=code and this.price=price.
- getCode(): String – return code in **uppercase** format.
- getPrice(): double – return price.
- setPrice(price:double): void – set this.price = price.

Do not format the result.

2. Build Test class contains main function such that the program output might look something like:



```
Enter fan code: ab01
Enter fan price: 300
1. TC = 1 - test getCode()
2. TC = 2 - test setPrice()
Enter TC: 1
OUTPUT:
AB01
```

```
Enter fan code: ab01
Enter fan price: 300
1. TC = 1 - test getCode()
2. TC = 2 - test setPrice()
Enter TC: 2
Enter new fan price: 350
OUTPUT:
350.00
```

Exercise 2

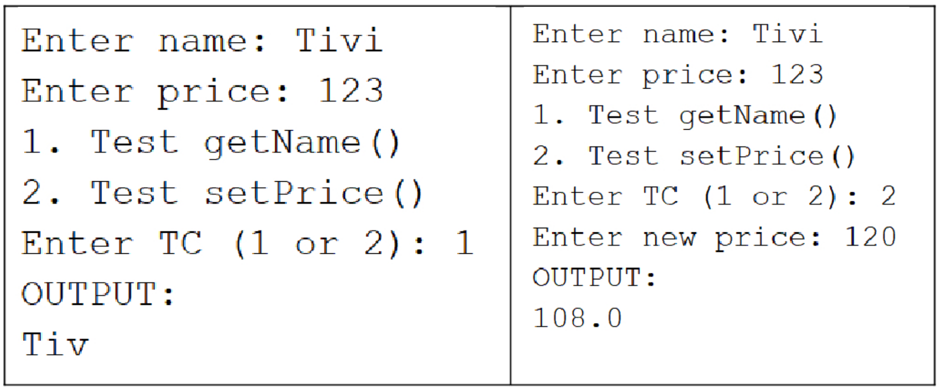
Write a class named **Book** that holds information of a book.

Book
-name:String -price:double
+Book () + Book(name:String,price:double) +getName():String +getPrice():double +setPrice(price:double):void

Where:

- Book() - Default Constructor.
- Book(name:String, price:double) - Parameterized constructor, which sets values to name and price.
- getName(): String - return 3 the first characters of name.
- getPrice(): double - return price which is reduced by 10%
- setPrice(price:double): void – update the value of price.

2. Build Test class contains main function such that the program output might look something like:



```
Enter name: Tivi
Enter price: 123
1. Test getName()
2. Test setPrice()
Enter TC (1 or 2): 1
OUTPUT:
Tiv
```

```
Enter name: Tivi
Enter price: 123
1. Test getName()
2. Test setPrice()
Enter TC (1 or 2): 2
Enter new price: 120
OUTPUT:
108.0
```

Exercise 3

1) Create a class named **Product** that contains:

- Attributes: ID, Name, Company, Color, Price.

- Methods: setters/ getters for attributes, explicit constructors, explicit constructors.

- Methods: setters/ getters for attributes, explicit constructors, explicit constructors, method for calculating discount, given discount=20%* Price.

2) Build Test class contains main function:

- Enter a list of n Products;

- Display the list of Products which their color are “RED” or “BLUE”.

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Exercise 4

1) Create a class named **Pupil** that contains:

- Attributes: ID, Name, ClassID, Literature, Math.

- Methods: setters/ getters for attributes, explicit constructors, explicit constructors, method for calculating Result, given Result=(Literature+ Math)/2

2) Build Test class contains main function:

- Enter a list of n Pupils;

- Display the list of Pupils which has highest result.

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Exercise 5

1) Create a class named **Teacher** that contains:

- Attributes: ID, Name, Gender, Address, Grading.

- Methods: setters/ getters for attributes, explicit constructors, explicit constructors, method for calculating Salary, given Salary=1.500.000* Grading.

2) Build Test class contains main function:

- Enter a list of n Teachers;

- Display the list of Teachers which has smallest Salary.

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Exercise 6

1) Create a class named **Car** that contains:

- Attributes: ID, Name, Country, Color, Price.

- Methods: setters/ getters for attributes, explicit constructors, explicit constructors.

- Methods: setters/ getters for attributes, explicit constructors, explicit constructors, method for calculating discount, given if color=”red” then discount=20%* Price.

2) Build Test class contains main function:

- Enter a list of n Cars;

- Count and return the number of Cars that have Price less than Price of the first car in the list.

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