

The laboratory work 4

1. Create a new project, and include in it the class Person that you just created.

Create a class "Student" and another class "Teacher", both descendants of "Person".

The class "Student" will have a public method "GoToClasses", which will write on screen "I'm going to class."

The class "Teacher" will have a public method "Explain", which will show on screen "Explanation begins". Also, it will have a private attribute "subject", a string.

The class Person must have a method "SetAge (int n)" which will indicate the value of their age (eg, 20 years old).

The student will have a public method "ShowAge" which will write on the screen "My age is: 20 years old" (or the corresponding number).

You must create another test class called "StudentAndTeacherTest" that will contain "Main" and:

Create a Person and make it say hello

Create a student, set his age to 21, tell him to Greet and display his age

Create a teacher, 30 years old, ask him to say hello and then explain.

2. Create a class "PhotoAlbum" with a private attribute "numberOfPages."

It should also have a public method "GetNumberOfPages", which will return the number of pages.

The default constructor will create an album with 16 pages. There will be an additional constructor, with which we can specify the number of pages we want in the album.

Create a class "BigPhotoAlbum" whose constructor will create an album with 64 pages.

Create a test class "AlbumTest" to create an album with its default constructor, one with 24 pages, a "BigPhotoAlbum" and show the number of pages that the three albums have.

3. Create a class named "Table". It must have a constructor, indicating the width and height of the board. It will have a method "ShowData" which will write on the screen the width and that height of the table. Create an array containing 10 tables, with random sizes between 50 and 200 cm, and display all the data.
4. Create a class "House", with an attribute "area", a constructor that sets its value and a method "ShowData" to display "I am a house, my area is 200 m2" (instead of 200, it will show the real surface). Include getters and setters for the area, too.

The "House" will contain a door. Each door will have an attribute "color" (a string), and a method "ShowData" which will display "I am a door, my color is brown" (or whatever color it really is). Include a getter and a setter. Also, create a "GetDoor" in the house.

A "SmallApartment" is a subclass of House, with a preset area of 50 m2.

Also create a class Person, with a name (string). Each person will have a house. The method "ShowData" for a person will display his/her name, show the data of his/her house and the data of the door of that house.

Write a Main to create a SmallApartment, a person to live in it, and to show the data of the person.

5. Create a project named "Tables2", based on the "Tables" project.

In it, create a class "CoffeeTable" that inherits from "Table". Its method "ShowData", besides writing the width and height, must display "(Coffee table)."

Create an array that contains 5 tables and 5 coffee tables. The tables must have random sizes between 50 and 200 cm, and the coffee tables from 40 to 120 cm. Show all their data.