

Kotitehtävä 3 Deadline 28.9. klo 11:45

Maksimipisteet 10

Valitse tehtäviä niin, että saat niistä maksimissaan 10 pistettä

Tehtävä 1: Luokat PlaceToLive ja DisplayPlaces (2p)

Locale, Locale, Locale (Try It Out p. 206)

A PlaceToLive has an address, a number of bedrooms, and an area (in square feet or square meters). Write the PlaceToLive class's code. Write code for a separate class named DisplayThePlaces. Your DisplayThePlaces class creates a few PlaceToLive instances by assigning values to their address, numberOfBedrooms, and area fields. The DisplayThePlaces class also reads (from the keyboard) the cost of living in each place. For each place, your code displays the cost per square foot (or square meter) and the cost per bedroom.

Tehtävä 2: Tiedoston luku (1p)

On the Record (Try It Out p. 215)

Previously in this chapter, you create instances of your own PlaceToLive class and display information about those instances. Modify the text-based version of your code so that it gets each instance's characteristics (address, number of bedrooms, and area) from a disk file.

Tehtävä 3: Selitä (2p)

Selitä, mihin sanalla extend viitataan, kun luokka määritellään seuraavasti:

```
public class FullTimeEmployee extends Employee { ...
```

miten tämä liittyy termeihin subclass ja superclass/child ja parent?

Tehtävä 4: Uudet alaluokat House ja Apartment ja luokan DisplayThePlaces päivitys (2p)

Buy Or Rent (Try It Out p. 224)

Previously in this chapter, you create instances of your own PlaceToLive class and display information about those instances. Create two subclasses of your PlaceToLive class: a House class and an Apartment class. Each House object has a mortgage cost (a monthly amount) and a property tax cost (a yearly amount). Each Apartment object has a rental cost (a monthly amount).

A separate DisplayThePlaces class creates some houses and some apartments. For each house or apartment, your DisplayThePlaces class displays the total cost per square foot (or square meter) and the total cost per bedroom, both calculated monthly.

Tehtävä 5: Luokka Organization_2, aliluokat ProfitMakingOrganization ja NonProfitOrganization (2p)

Tax Breaks (Try It Out p. 225)

In Chapter 7, you create an Organization class. Each instance of your Organization class has a name, an annual revenue amount, and a boolean value indicating whether the organization is or is not a profit-making organization.

Create a new Organization_2 class. Each instance of this new class has only a name and an annual revenue amount. Create two subclasses: a ProfitMakingOrganization class and a NonProfitOrganization class. A profit-making organization pays 10 percent of its revenue in tax, but a nonprofit organization pays only 2 percent of its revenue in tax.

Make a separate class that creates ProfitMakingOrganization instances and NonProfitOrganization instances while also displaying information about each instance, including the amount of tax the organization pays.

Tehtävä 6: Selitä (3-5p)

Tutustu Java Documentaatioista löytyvään tutoriaaliin annotaatioista.

<https://docs.oracle.com/javase/tutorial/java/annotations/> Kerro, mitkä ovat yleisimmät annotaatiot ja mihin niitä käytetään. Anna myös esimerkkejä, miten annotaatioita käytetään. Tehtävää varten ei tarvitse ymmärtää kaikkea, mitä tutoriaalissa sanotaan eikä tarvitse selittää kaikkea.

Jos selitys on kattava (eli menee jo luennolla käydyn asian ulkopuolelle) ja esimerkit oikein hyviä saat 2 lisäpistettä.

Tehtävä 7: Aliluokka ApartmentWithFees (2p)

Pay More and More (Try It Out p. 230)

In previous sections, you create House and Apartment subclasses of your PlaceToLive class. Create an ApartmentWithFees subclass of your Apartment class. In addition to the monthly rental price, someone living in an ApartmentWithFees pays a fixed amount every quarter (every three months). Create a separate class that displays the monthly cost of living in a House instance, an Apartment instance, and an ApartmentWithFees instance.

Tehtävä 8: Vastaa kysymykseen (1p)

Kirjan tehtävä sivu 230, Virtual Methods

Kopioi koodi sivuilta 230-231 ja aja se.

Vastaa seuraavaan kysymykseen:

What output do you see when you run the Main.java file's code? What does this output tell you about variable declarations and method calling in Java?