

# Inheritance

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## 1 Lærervejledningn

**Emne** UML diagrams

**Sværhedsgrad** Let

## 2 Introduktion

## 3 Opgave(r)

1. Draw the UML diagram for the following programming structure: A Person class has data attributes for a person's name, address, and telephone number. A Customer has data attribute for a customer number and a Boolean data attribute indicating whether the customer wishes to be on a mailing list.

2. Make an UML diagram for the following structure:

A Employee class that keeps data attributes for the following pieces of information:

- Employee name
- Employee number

A subclass ProductionWorker that is a subclass of the Employee class. The ProductionWorker class should keep data attributes for the following information:

- Shift number (an integer, such as 1 or 2)
- Hourly pay rate

A class Factory which has one or more instances of ProductionWorker objects.

3. Write a UML diagram for the following:

A class called Animal and has the following attributes (choose names yourself):

- The amount of food needed daily (measured in kilograms)

- The weight of the animal (measured in kilograms)
- The maximum speed of the animal (measured in kilometres per hour)
- The current speed of the animal (measured in kilometres per hour)

The Animal class should have two methods (choose appropriate names):

- The first method should set the current speed of the animal proportionately to its food intake and maximum speed as follows: if the animal eats 100% of the amount of food it needs daily, the animal's current speed should be its maximum speed; if the animal eats 50% of the amount of food it needs daily, the animal's current speed should be 50% of its maximum speed, and so on.
- The second method should set the amount of food needed daily proportionately to the animal's weight as follows: the animal should eat half its own weight in food every day (if the animal weighs 50 kg, it should eat 25kg of food daily).

A subclass Carnivore that inherits everything from class Animal.

A subclass Herbivore that inherits everything from class Animal, and modifies the second method as follows: the animal should eat 40% of its own weight in food every day.

A class called Game consisting of one or more instances of Carnivore and Herbivore.