



Dalarna University

GIK29B: Python- and R-programming 7.5 Credits

Lab - Classes and Object-Oriented Programming

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## Formalities

You solve the exercises within your group and present the code verbally and *independently* by a recording. See below.

Each member in the group presents both exercises with a voice recording, max 5-7 minutes. Explain the logic of the code and run the code. The following site can be used, which is easy to get started with:

- Apowersoft - Free Online Screen Recorder
  - the files can be stored in different formats but **store the file as a .mp4-file**

## Deadline

Wednesday 23rd of February

## Resources

Tips on resources or help:

- the course literature
- w3schools - Classes/Objects

## Exercises

In each exercise, make sure to comment your code

## Exercise 1: Personal Information Class

Design a class that holds the following *personal* data:

- name
- address
- age
- phone number

Write appropriate accessor and mutator methods. Also, create a program that creates three instances of the class. One instance should hold your information, and the other two should hold your friends' or family members' information.

## Exercise 2: Pet Class

Write a class named `Pet`, that has the following data attributes:

name (for the name of a pet)

- `__animal_type` (for the type of animal that a pet is. Example values are "Dog", "Cat", and "Bird")
- `__age` (for the pet's age)

The `Pet` class should have an `__init__` method that creates these attributes. It should also have the following methods:

- `set_name` (This method assigns a value to the `__name` field)
- `set_animal_type` (This method assigns a value to the `__animal_type` field)
- `set_age` (This method assigns a value to the `__age` field)
- `get_name` (This method returns the value of the `__name` field)
- `get_animal_type` (This method returns the value of the `__animal_type` field)
- `get_age` (This method returns the value of the `__age` field)

Once you have written the Pet Class:

write a program that can create objects of the class and prompts the user to enter the name, type, and age of his or her pet. See some more info below....

- ask user *how many pets* that should be entered
- enter data about each pet
- create object for each pet entered
- the data about each pet should be stored as the object's attributes
  - use i.e. set-methods in the class
- store each pet-object created in a "list"
- let the user have an option to choose if
  - *all* pet's should be listed or
  - just all pets of a *certain type*
- use a loop to go through, iterate, the list and display the requested data according to the option chosen by user, all or just specific type of pets.

## Hand-in

The hand-in is done in Learn with,

- your Python files and a report zipped together as a **.zip**-file.

The report should be *short*, max one A4 page, where you reflect on how the lab went.

I.e. did you encounter any obstacles? How did you overcome them? Was the lab hard or easy?

and...

- a link to your recorded presentation or an .mp4 file included in the hand-in ;)

Good luck/ Hans