Dalarna University

GIK29B: Python- and R-programming 7.5 Credits

Lab - Classes and Object-Oriented Programming

# Contents

# Formalities

Solve the exercises and present the code verbally and *independently* by a recording. See below.

Present 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

Monday 3rd of October

## 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
    o 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
    o *all* pet's should be listed or
    o 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! :)