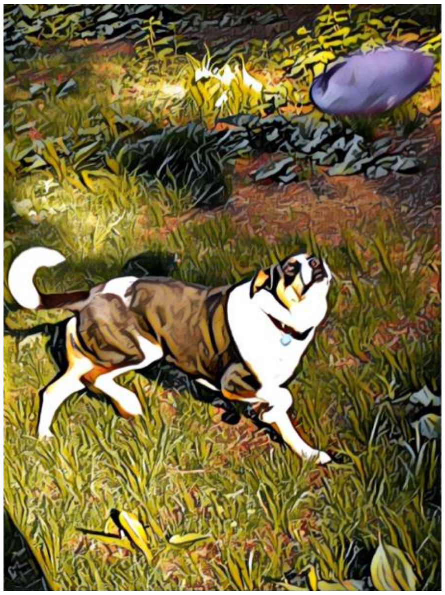
Class Homework 0

CS 100 2017F

Due (section dependent)
Submit your solutions to Problems 1-5 below as file named *dog.py* via Moodle.

Read Review and refer to the slides on classes as needed. Read about classes in the Python tutorial (https://docs.python.org/3/tutorial/classes.html#) beginning with section 9 through section 9.6.



In this homework you will design a class *Dog* and save it in a file named *dog.py*. (**Important hint:** when you change the file *dog.py* the changes will not be reflected in an old shell, even if you import *dog* again. Start a new shell to test your changes.)

Problem 1. Write a class definition line and a one line docstring for the class *Dog*. Write an ***__init__*** method for the class *Dog* that gives each dog its own name and breed. Make sure that you test this on a successful creation of a dog object. For example,

```
>>> import dog
>>> sugar = dog.Dog('Sugar', 'border collie')
>>> sugar.name
Sugar
>>> sugar.breed
border collie
```

Problem 2. Add a list attribute *tricks* to each dog and initialize it in ***__init__*** to the empty list. (The user does not have to supply a list of tricks when creating a dog.) Make sure that you test this successfully.

```
>>> sugar.tricks
[]
```

Problem 3. Write a method *teach* as part of the class *Dog*. The method *teach* should add a passed string parameter to *tricks* and print a message that the dog that knows the trick.

```
>>> sugar.teach('frisbee')
Sugar knows frisbee
```

Problem 4. Write a method *knows* as part of the class *Dog*. The method *knows* should check whether a passed string parameter is in the dog’s list of tricks, print an appropriate message and return True or False.

```
>>> sugar.knows('frisbee')
Yes, Sugar knows frisbee
True
>>> sugar.knows('arithmetic')
No, Sugar doesn't know arithmetic
False
```

Problem 5. Create a data attribute *species* as part of the class *Dog* and set its value to 'canis familiaris'. The method *species* should be defined within the class Dog but outside of any method.

```
>>> dog.Dog.species
'Canis familiaris'
>>> sugar.species
'Canis familiaris'
```