Name: Damian Zukowski

Pair: Only me

Task numbers that you completed: 1, 3, 4, 5, 6, 7, 8, 9

Task numbers that you started but were not able to complete: 2

Task numbers that you left undone: 0

Self-assessment:

This exercise was easy/difficult/ok/etc. for me because… exercise 2 is a killer, I had almost no clue how to even approach it.

Doing this exercise, I learned… more about inheritance and overriding methods and attributes.

I am still wondering… a bit about inheritance and overriding methods. A lot to remember there, what the Parent has and what my Child has to have, what to override etc.

I understood/did not understand that… ; I did/did not know that… ; I did/did not manage to do… Task 2 basically, tough logic there.

Exercise 2 is a killer, I had almost no clue how to even approach it. Tried some ways, nothing worked out.

Answers to other than coding tasks here:

Task 7:

UML Class Diagrams create base class and its sub-classes.

1. Read through the Geeks for Geeks pages about UML class diagrams:

https://www.geeksforgeeks.org/unified-modeling-language-uml-class-diagrams/

• Make sure you understand the basics of UML class diagrams, including classes, attributes,

methods, inheritance, and relationships.

2. Look around you and describe items in an inheritance hierarchy:

• Identify objects around you and think about how they can be categorized. Humans are

really good at dividing the world into taxonomies, so this should not be too difficult.

For example, all kinds of electronic devices – smartphone, PC and monitors. They share some common attributes which can be inherited from a parent, and then just modified depending on the device, like my monitor doesn't have a battery but a smartphone does.

Next example – a chair. I have a hardwood ones on the balcony, then cushioned ones at the dinner table and finally a gaming chair with wheels in my room. Again, a parent class Chair with subclasses DiningChair and GamingChair, inheriting common attributes and methods.

3. Model these objects as you would use them in a computer application:

• Determine the properties and methods that these objects would have. What properties and

methods would they share? Think here our Person – Student – Teacher example that we

went through during the lecture.

A Person would have 2 legs, 2 arms, a torso, a head and a soul 😊 Then the Student would have all of them as well but additionally a study path, course credits, parties counter and overalls patches counter! A Teacher would have a vocation, department, possibly a family etc.

As for methods I think they could share speaking, walking, making friends, riding a bicycle and a car.

4. Identify polymorphically overridden methods:

• Consider which methods would need to be overridden in subclasses. Here the Book

Container example that we went through during the class might be helpful.

Well, in case the Child class needs additional attributes, then the constructor class would be overridden to start with. One example that comes to my mind is parent Animal and children Dog and Cat. Both will share the same attributes and methods but for example speaking method would return different outcomes, depending on the child class or an animal in this case – Woof vs Meow. They would share some body attributes, like having 4 legs, fur/coat and a tail. So overriding Parent methods really depends on the Child and its needs but it still helps a lot because we avoid duplicating code.

5. Identify completely different properties:

• Determine properties that are unique to each subclass.

In the above example, different attributes would be: jump height, length of hair/fur, head size, mouth size and showing emotions.

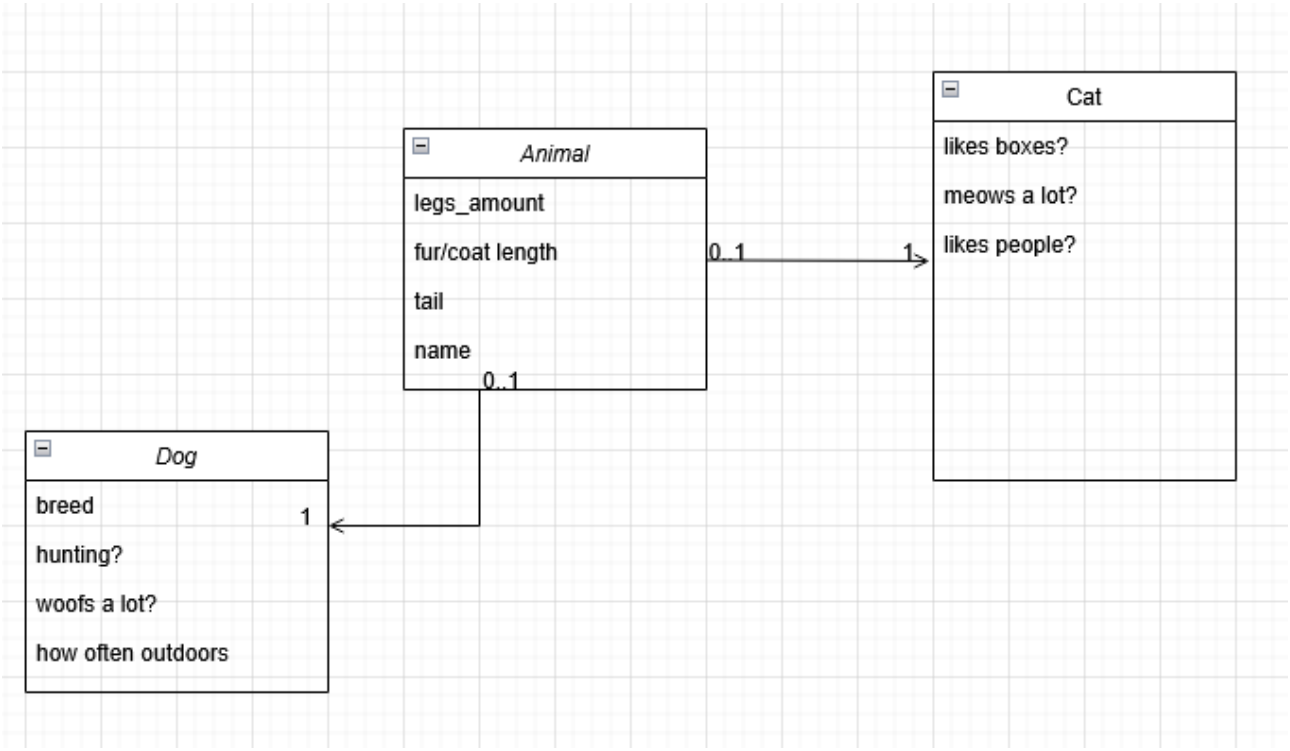
6. Use UML class diagram to visually represent the structure and relationships:

• Create a UML class diagram to show the inheritance hierarchy and relationships between

the classes. You can use online tools like Lucidchart, draw.io, or even pen and paper.

Note you do not have to code anything, but if you do, write something similar with the audio_file.py that

we went through during the lecture.


Cat
likes boxes?
meows a lot?
likes people?
Animal
legs_amount
fur/coat length
tail
name
0..1
1
0..1
Dog
breed
hunting?
woofs a lot?
how often outdoors
1