

COMP2396B - Assignment 2(b)

Due: 11th March, 2019 23:55

Introduction

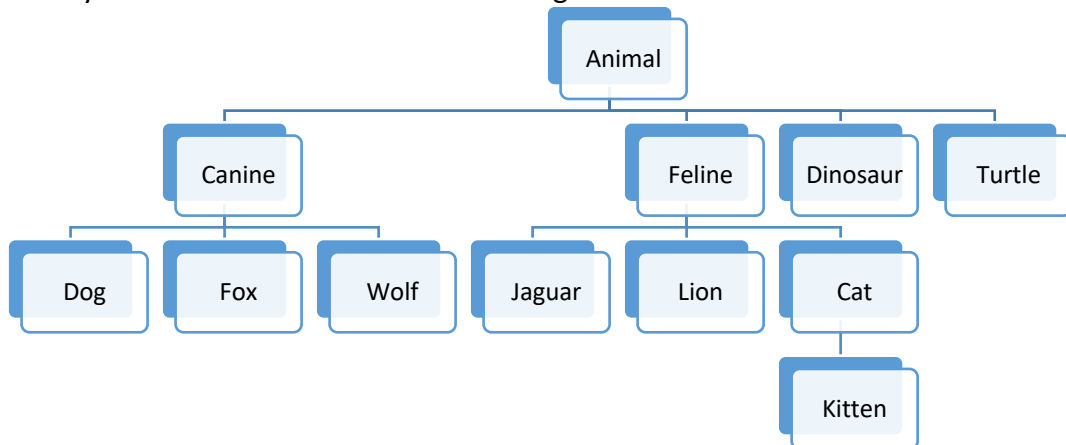
This assignment tests your understanding of **inheritance** and **polymorphism** in Java. Assignment 2 consists of two parts. You have already implemented the **basic requirements** of the program in part (a). In Assignment 2b, you are required to **extend the program** by submitting **additional** Java source files. **Files submitted in part (b) must work with the files in part (a) that you have submitted.**

Task

You need to implement a new main program, `ForestNew.java`, which will replace the original ordering system (`Forest.java`), i.e. we will use the main program in `ForestNew.java` to test your submission.

Animals

In the new Forest, Tiger and Hippo are not there anymore. Three new types of animals are added, namely, Dinosaur (i), Jaguar (j) and Kitten (k). Here is the new hierarchy of animals. All rules defined in Assignment 2a are still valid.



Animal moving

The new moving order: **Cat, Dinosaur, Dog, Fox, Jaguar, Kitten, Lion, Turtle, Wolf.**

New moving rules:

- **Dinosaur** moves in **four directions**, **three** steps a time.
- **Kitten** has 30% chance stay in the **same position**, and 70% chance move in **eight directions**, one step at a time.

Animal attacking

- If an **Animal** attacks an **Animal** of its own type, there is a 50% chance that one wins and the other dies.
- If a **Dinosaur** attacks an **Animal** (not a Dinosaur), the **Dinosaur** wins and the **Animal** dies.

- If a **Jaguar** attacks a **Turtle**, **Jaguar** wins and **Turtle** dies.
- If a **Kitten** attacks an **Animal** (not a Cat nor a Kitten), the **Kitten** dies.
- If a **Kitten** attacks a **Cat**, there is a 70% chance that the **Kitten** dies.

When the program is executed, the following menu should be displayed instead:

```

1. Dog (d)
2. Fox (f)
3. Wolf (w)
4. Jaguar (j)
5. Lion (l)
6. Cat (c)
7. Kitten (k)
8. Dinosaur (i)
9. Turtle (u)
What would you like to add to the Forest?
Please enter your choice (1-9, or 0 to finish the animal input):

```

All other operations remain the same.

Marking (35% for part b)

- **15% marks** are given to the **program design**.
 - Your program must use the program in part (a).
- **20% marks** are given to the **functionality** of your program.
 - Your program output must be **identical** to what is described in this document, with the exception of the trailing spaces at the end of each line of output.
 - Please ask us on Moodle or by email if you are not sure about any of the requirements stated in this specification.

Submission:

Please submit all new source files (*.java) in a single compressed file (in .zip or .7z) to Moodle. There is no need to re-submit the files in part (a). **Late submission is not allowed.**

Do not submit .class file.

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