CENTER FOR TECHNICAL EDUCATION **BITS Pilani K.K.Birla Goa Campus**

Introduction to Programming with Python **Compre exam – Part B(Closed Book – 40 Marks)**

Name : **ID :** **Marks Obtained :**

Note : 1. Python 3 is being used
2. There are ZERO mistakes/ambiguities in the paper. In case you want some clarification raise your hand and we will attend to you. DO NOT call out loudly and disturb others.

1. Use Inheritance to solve the following question on a zoo database:

   - The input will be taken in the form of (2 lines or 3 lines input):
     Name AnimalType Species Mass
     <Some additional input, depending on the AnimalType>

     Explanation:
     Name: The animal's individual name. Contains no white space.
     AnimalType: The type of animal. One of: Mammal, Reptile, Bird
     Species: The animal's species. Contains no white space.
     Mass: The animal's mass (weight) in pounds. A whole number ≥ 1

     Examples:
     Animal data should be input like this:

     Bob Mammal Bear 300
     Lucy Reptile Lizard 2
     Oliver Bird Ostrich 75

   - The data following the first line in each animal record depends on the AnimalType:

1. Mammals:
   The first line of data for animals of type Mammal is followed by: LitterSize
   Explanation:
   LitterSize: The average number of offspring the mammal has. A whole number ≥ 1

2. Reptiles:
   The first line of data for animals of type Reptile is followed by: VenomousOrNot

Explanation:
VenomousOrNot: Indicates whether the reptile has a venomous bite. One of: Venomous, Nonvenomous

3. Birds:
   The first line of data for animals of type Bird is followed by: Wingspan TalksOrMute
   Explanation:
   Wingspan: The wingspan of the bird in inches. A whole number ≥ 1
   TalksOrMute: Indicates whether the bird talks. One of: Talks, Mute

   Finally, birds that talk have an additional line of data: Phrase
   Explanation:
   Phrase: What the bird says. May contain whitespace, but is no more than one line long.

Example Inputs:
Here is an example of inputs given:

Bob Mammal Bear 300
2
Lucy Reptile Lizard 2
Nonvenomous
Carl Reptile Cottonmouth 3
Venomous
Oliver Bird Ostrich 75
60 Mute
Polly Bird Parrot 1
2 Talks
I want a cracker
Doug Mammal Dog 20
4

For this exercise, assume that each animal has a unique name.

Program Output:

Once the program has taken all the input, it should request and process interactive queries from the user. It should request queries in the following format:

Zoo data read in.
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]?

The user interactively queries the database for information on individual animals. The following example demonstrates all varieties of queries and responses, using the data provided in the above example file.

Zoo data read in.
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? s
Animal Name? Bob
Bob species is Bear
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? m
Animal Name? Lucy
Lucy mass is 2
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? l
Animal Name? Bob
Bob litter size is 2
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? v
Animal Name? Carl
Carl is Venomous
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? v
Animal Name? Lucy
Lucy is Nonvenomous
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? w
Animal Name? Oliver
Oliver Wing Span is 60
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? t
Animal Name? Oliver
Oliver is Mute
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? t
Animal Name? Polly
Polly talks.
Polly says I want a cracker
Query animal species[s], mass[m], litter[l], venom[v], wingspan[w], talk[t] or exit session[e]? e
Goodbye!