

Animal Guessing Game



Prompt: This is an animal attributes dataset. I have a hidden animal in mind. You are allowed to ask me binary questions about the hidden animal's attributes, for you to figure out the hidden animal. After receiving an answer, at each step, you must print what your current belief distribution is, about the possible hidden animal. We can stop when there's no more distinguishing attributes between the leftover options.

(You're not allowed to solve this using programming.)

```
animals = {
  "cat": {
    "mammal": True,
    "bird": False,
    "reptile": False,
    "amphibian": False,
    "fish": False,
    "insect": False,
    "big": False,
    "can_fly": False,
    "can_swim": False,
    "has_fur": True,
    "domestic": True,
    "carnivore": True,
    "herbivore": False,
    "lays_eggs": False
  },
  "dog": {
    "mammal": True,
    "bird": False,
    "reptile": False,
    "amphibian": False,
    "fish": False,
    "insect": False,
    "big": False,
    "can_fly": False,
    "can_swim": True,
    "has_fur": True,
    "domestic": True,
    "carnivore": True,
    "herbivore": False,
    "lays_eggs": False
  },
  "lion": {
    "mammal": True,
    "bird": False,
    "reptile": False,
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"amphibian": False,
"fish": False,
"insect": False,
"big": True,
"can_fly": False,
"can_swim": False,
"has_fur": True,
"domestic": False,
"carnivore": True,
"herbivore": False,
"lays_eggs": False
},
"elephant": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": False,
  "has_fur": False,
  "domestic": False,
  "carnivore": False,
  "herbivore": True,
  "lays_eggs": False
},
"whale": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": True,
  "has_fur": False,
  "domestic": False,
  "carnivore": True,
  "herbivore": False,
  "lays_eggs": False
},
"shark": {
  "mammal": False,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": True,
  "insect": False,

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"big": True,
"can_fly": False,
"can_swim": True,
"has_fur": False,
"domestic": False,
"carnivore": True,
"herbivore": False,
"lays_eggs": True
},
"eagle": {
  "mammal": False,
  "bird": True,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": False,
  "can_fly": True,
  "can_swim": False,
  "has_fur": False,
  "domestic": False,
  "carnivore": True,
  "herbivore": False,
  "lays_eggs": True
},
"penguin": {
  "mammal": False,
  "bird": True,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": False,
  "can_fly": False,
  "can_swim": True,
  "has_fur": False,
  "domestic": False,
  "carnivore": True,
  "herbivore": False,
  "lays_eggs": True
},
"crocodile": {
  "mammal": False,
  "bird": False,
  "reptile": True,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": True,

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    "has_fur": False,
    "domestic": False,
    "carnivore": True,
    "herbivore": False,
    "lays_eggs": True
  },
  "frog": {
    "mammal": False,
    "bird": False,
    "reptile": False,
    "amphibian": True,
    "fish": False,
    "insect": False,
    "big": False,
    "can_fly": False,
    "can_swim": True,
    "has_fur": False,
    "domestic": False,
    "carnivore": True,
    "herbivore": False,
    "lays_eggs": True
  },
  "snake": {
    "mammal": False,
    "bird": False,
    "reptile": True,
    "amphibian": False,
    "fish": False,
    "insect": False,
    "big": False,
    "can_fly": False,
    "can_swim": True,
    "has_fur": False,
    "domestic": False,
    "carnivore": True,
    "herbivore": False,
    "lays_eggs": True
  },
  "kangaroo": {
    "mammal": True,
    "bird": False,
    "reptile": False,
    "amphibian": False,
    "fish": False,
    "insect": False,
    "big": True,
    "can_fly": False,
    "can_swim": True,
    "has_fur": True,
    "domestic": False,
    "carnivore": False,

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    "herbivore": True,
    "lays_eggs": False
  },
  "bat": {
    "mammal": True,
    "bird": False,
    "reptile": False,
    "amphibian": False,
    "fish": False,
    "insect": False,
    "big": False,
    "can_fly": True,
    "can_swim": False,
    "has_fur": True,
    "domestic": False,
    "carnivore": False,
    "herbivore": False,
    "lays_eggs": False
  },
  "chicken": {
    "mammal": False,
    "bird": True,
    "reptile": False,
    "amphibian": False,
    "fish": False,
    "insect": False,
    "big": False,
    "can_fly": False,
    "can_swim": False,
    "has_fur": False,
    "domestic": True,
    "carnivore": False,
    "herbivore": False,
    "lays_eggs": True
  },
  "cuttlefish": {
    "mammal": False,
    "bird": False,
    "reptile": False,
    "amphibian": False,
    "fish": False,
    "insect": False,
    "big": False,
    "can_fly": False,
    "can_swim": True,
    "has_fur": False,
    "domestic": False,
    "carnivore": True,
    "herbivore": False,
    "lays_eggs": True
  },

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"giraffe": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": False,
  "has_fur": True,
  "domestic": False,
  "carnivore": False,
  "herbivore": True,
  "lays_eggs": False
},
"hippopotamus": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": True,
  "has_fur": False,
  "domestic": False,
  "carnivore": False,
  "herbivore": True,
  "lays_eggs": False
},
"rhino": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": False,
  "has_fur": False,
  "domestic": False,
  "carnivore": False,
  "herbivore": True,
  "lays_eggs": False
},
"tiger": {
  "mammal": True,
  "bird": False,

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"reptile": False,
"amphibian": False,
"fish": False,
"insect": False,
"big": True,
"can_fly": False,
"can_swim": True,
"has_fur": True,
"domestic": False,
"carnivore": True,
"herbivore": False,
"lays_eggs": False
},
"bear": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": True,
  "has_fur": True,
  "domestic": False,
  "carnivore": True,
  "herbivore": False,
  "lays_eggs": False
},
"panda": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": False,
  "has_fur": True,
  "domestic": False,
  "carnivore": False,
  "herbivore": True,
  "lays_eggs": False
},
"cow": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,

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"insect": False,
"big": True,
"can_fly": False,
"can_swim": False,
"has_fur": True,
"domestic": True,
"carnivore": False,
"herbivore": True,
"lays_eggs": False
},
"goat": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
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  "can_fly": False,
  "can_swim": False,
  "has_fur": True,
  "domestic": True,
  "carnivore": False,
  "herbivore": True,
  "lays_eggs": False
},
"horse": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": True,
  "can_fly": False,
  "can_swim": True,
  "has_fur": True,
  "domestic": True,
  "carnivore": False,
  "herbivore": True,
  "lays_eggs": False
},
"monkey": {
  "mammal": True,
  "bird": False,
  "reptile": False,
  "amphibian": False,
  "fish": False,
  "insect": False,
  "big": False,
  "can_fly": False,

```



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"can_swim": False,
"has_fur": True,
"domestic": False,
"carnivore": False,
"herbivore": False,
"lays_eggs": False
}
}

```

Great! I'll start by asking a question to narrow down the possibilities.

Question 1: Is the hidden animal a **mammal**?

(Please answer with "Yes" or "No")



Yes.

Thanks! You've confirmed the animal is a **mammal**.

Let's update the belief distribution. The remaining possibilities are only mammals:

- **cat**
- **dog**
- **lion**
- **elephant**
- **whale**
- **kangaroo**
- **bat**
- **giraffe**
- **hippopotamus**
- **rhino**
- **tiger**
- **bear**
- **panda**
- **cow**
- **goat**
- **horse**
- **monkey**

That's **17 animals** remaining.

Question 2: Does the animal have **fur**?



Yes.

Based on your answers so far, here is the updated belief distribution. The hidden animal must be a mammal that has fur. This leaves us with:

- **cat**
- **dog**
- **lion**
- **kangaroo**
- **bat**
- **giraffe**
- **tiger**
- **bear**
- **panda**
- **cow**
- **goat**
- **horse**
- **monkey**

That is **13 animals** remaining.

Question 3: Is the animal **domestic**?

(Please answer with "Yes" or "No")



No.

Thanks. So the animal is a **mammal**, has **fur**, and is **not domestic**.

Here is the updated belief distribution:

- **lion**
- **kangaroo**
- **bat**
- **giraffe**
- **tiger**
- **bear**
- **panda**

- **monkey**

We're down to **8 animals**.

Question 4: Is the animal **big**?



Yes.

Great. The animal is a **mammal**, has **fur**, is **not domestic**, and is **big**.

Updated belief distribution:

- **lion**
- **kangaroo**
- **giraffe**
- **tiger**
- **bear**
- **panda**

We're now down to **6 animals**.

Question 5: Is the animal a **herbivore**?



No.

Thanks. So the animal is **not a herbivore**.

Updated belief distribution:

- **lion**
- **tiger**
- **bear**

These are the remaining animals that are:

- Mammals
- Have fur
- Not domestic
- Big
- Not herbivores

We're down to **3 animals**.

Question 6: Can the animal **swim**?



Yes.

Good to know. The animal **can swim**.

Updated belief distribution:

- **tiger**
- **bear**

This eliminates the **lion**, which cannot swim.

We're now down to **2 animals**.

Question 7: Is the animal known to live in the **wild primarily in Asia**?