

CS 514 Applied Artificial Intelligence

Project 1

Domain – Dog breed selector

Abstract

Dogs are the most common pets all around the world. There are hundreds of dog breeds and each one has its own specialty. Selecting the correct dog breed according to your and the dogs' requirements can be a daunting task. This system using JESS rule engine helps potential dog owners select the compatible dog breed or type by asking some questions related to their requirements.

Features

The system takes into consideration some of the following attributes used to determine the perfect dog breed.

1. Living space for the owner and dog
2. Play space for the dog
3. If owner has any children
4. If the owner has ever had a dog before
5. If the owner has other pets
6. Personality of the dog
7. Play time for the dog
8. Alone time for the dog
9. Barking
10. Shedding
11. Size of the dog
12. Exercise time for the dog
13. Training time
14. Dietary restrictions

User gets to select answers from a given list. Each answer contributes to determine a better compatible dog breed for the owner. For example, If the living space is small, and shedding is an issue, then a smaller breed of the dog such as Poodle Terrier is more suitable than a larger dog such as a Great Dane.

Rules and description

Knowledgebase of the system consists of following

Facts –

1. Questions: Various questions to find out the requirements of the owner and environment for the dog.

Templates –

1. Applicant template: stores all the answers to the questions for an applicant.
2. Question template: stores questions in the format to be asked to the users
3. Answer template: Stores all the answers to the questions asked.
4. Final result template: holds final result for the selector.
5. Live check: checks living conditions (space) for the owner.
6. Personality check: stores personality related answers for the dog.
7. Size check: stores size related answers for the dog.

Rules –

1. defrule ask::ask-question-by-id
To asks the questions to user.
2. defrule welcome
Displays the welcome message to the user.
3. defrule request-live
Ask about living space
4. defrule request-kids
Ask about kids and their ages for owners
5. defrule request-exper
Ask about experience as a dog owner
6. defrule request-otherpets
Ask about other pets in the living space
7. defrule request-personality
Ask about the personality of the dog. This will determine if the dog is protective or friendly.
8. defrule request-playtime
Ask about how much physical exercise the dog might get
9. defrule request-alonetime
Ask about how much time will the dog be alone in a day
10. defrule request-size
Ask about what size of dog would the owner prefer

11.defrule request-shed

Ask is dog shedding its fur is an issue for the owner

12.defrule request-barking

Ask if dog barking is an issue for the owner

13.defmodule result

prints result

Usage manual

1. Save the dogbreed.clp file in ".../Jess/bin" folder
2. Open jess batch file
3. Run as `Jess> (batch "dogbreed.clp")`

Test cases

#1

This copy of Jess will expire in 14 day(s).

Jess> (batch "dogBreed.clp")

What is your name? Harry

Let's get you a new dog, Harry!

Where will your dog live? <1>Apartment <2>House

2

How much space will it have to play? <1>Small yard <2>Average yard <3>Huge yard

1

Do you have any kids? <1>Yes <2>No

1

Have you owned a dog before? <1>Yes <2>No

2

Do you have any other pets? <1>Yes <2>No

1

Which best describes your dog's personality? <1>Protective <2>Friendly

2

In terms of barking how much noise can you tolerate? <1>None <2>Some <3>Barking is not an issue

1

How much exercise will the dog get? <1>Indoors <2>Everyday runs

2

How many hours a day will the dog be spending alone? <1>Less than 4
<2>More than 4

2

What size a dog you are comfortable with? <1>Small <2>Average <3>Large

2

How important is to have a dog that doesn't shed much? <1>Very <2>Not much

2

Calculating...

A medium sized dog with a friendly attitude is a good fit for you. Your best buddy would be a golden retriever. Enjoy your day!

#2.

This copy of Jess will expire in 14 day(s).

Jess> (batch "dogBreed.clp")

What is your name? Ron

Let's get you a new dog, Ron!

Where will your dog live? <1>Apartment <2>House

2

How much space will it have to play? <1>Small yard <2>Average yard <3>Huge yard

1

Do you have any kids? <1>Yes <2>No

1

Have you owned a dog before? <1>Yes <2>No

1

Do you have any other pets? <1>Yes <2>No

2

Which best describes your dog's personality? <1>Protective <2>Friendly

1

In terms of barking how much noise can you tolerate? <1>None <2>Some
<3>Barking is not an issue

3

How much exercise will the dog get? <1>Indoors <2>Everyday runs

2

How many hours a day will the dog be spending alone? <1>Less than 4
<2>More than 4

1

What size a dog you are comfortable with? <1>Small <2>Average <3>Large

3

How important is to have a dog that doesn't shed much? <1>Very <2>Not much

2

Calculating...

A large sized protective dog is a good fit for you. Your best buddy would be a German Shephard. Enjoy your day!

#3

This copy of Jess will expire in 14 day(s).

Jess> (batch "dogBreed.clp")

What is your name? Hermione

Let's get you a new dog, Hermione!

Where will your dog live? <1>Apartment <2>House

1

How much space will it have to play? <1>Small yard <2>Average yard <3>Huge yard

1

Do you have any kids? <1>Yes <2>No

2

Have you owned a dog before? <1>Yes <2>No

2

Do you have any other pets? <1>Yes <2>No

1

Which best describes your dog's personality? <1>Protective <2>Friendly

2

In terms of barking how much noise can you tolerate? <1>None <2>Some <3>Barking is not an issue

1

How much exercise will the dog get? <1>Indoors <2>Everyday runs

1

How many hours a day will the dog be spending alone? <1>Less than 4 <2>More than 4

1

What size a dog you are comfortable with? <1>Small <2>Average <3>Large

1

How important is to have a dog that doesn't shed much? <1>Very <2>Not
much

1

Calculating...

A small sized dog with a friendly attitude that does not shed much is a good fit
for you. Your best buddy would be a Poodle Terrier mix. Enjoy your day!

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