1. A declarative language is used to represent the following facts about birds:

01 species(eagle, raptor).

02 species(falcon, raptor).

03 species(penguin, flightless).

04 species(ostrich, flightless).

05 species(peacock, galliform).

06 habitat(eagle, mountains).

07 habitat(falcon, cliffs).

08 habitat(penguin, arctic).

09 habitat(ostrich, savanna).

10 habitat(peacock, forest).

11 diet(eagle, carnivore).

12 diet(falcon, carnivore).

13 diet(penguin, piscivore).

14 diet(ostrich, omnivore).

15 diet(peacock, omnivore).

(a) Add more facts to include a pigeon as a species of bird living in cities with an omnivore diet.

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(b) Using the variable Bird, the goal:

habitat(Bird, arctic)

returns

Bird = penguin

Write the result returned by the goal:

habitat(Bird, forest)

Bird = ................................................................................................................................. [1]

(c) (i) Write the goal, using the variable OmnivorousBird, to find all the birds with an omnivore diet.

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(ii) Write the goal, using the variable RaptorCarnivore, to find all the raptor birds with a carnivore diet.

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2. A declarative language is used to represent the following facts about colors:

01 primary(red).

02 primary(blue).

03 primary(yellow).

04 secondary(orange, red, yellow).

05 secondary(green, blue, yellow).

06 secondary(purple, blue, red).

(a) Add more facts to include cyan as a tertiary color that combines blue and green.

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(b) Using the variable PrimaryColor, the goal:

primary(PrimaryColor)

returns

PrimaryColor = red, blue, yellow

Write the result returned by the goal:

secondary(SecondaryColor, \_, \_)

SecondaryColor = ................................................................................................................................. [1]

(c) (i) Write the goal, using the variable ColorA, to find all the secondary colors that include red as one of their components.

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(ii) Write the goal, using the variable ColorB, to find all the colors (primary or secondary) that include blue as one of their components.

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