



# KNOWLEDGE BASE REPRESENTATION

PROJECT REPORT- FALL 2020

ARTIFICIAL INTELLIGENCE | CSCI 755 | 12/19/2020

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## Assertions:

- I. A child may not carry a weight of three pounds.

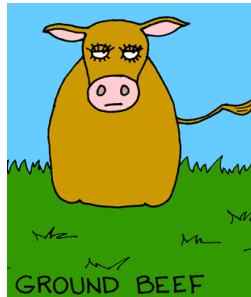


- II. Approximate weights of different types of tomatoes (in pounds):



- 3 medium globe tomatoes = 1 pound
- 8 small plum tomatoes = 1 pounds
- 25 to 30 cherry tomatoes = 1 pound

- III. Ground beef contributes meat .



- IV. Similar categories of items in a supermarket are placed at one area.



- V. Supermarkets do not make tomatoes or other vegetables.
- VI. Supermarkets sell goods produced by others.
- VII. Supermarkets sell all kinds home and personal needs.
- VIII. Tomatoes are the edible items.
- IX. Travelling imposes some expenses.

### OBJECTS:



Supermarket, goods, payment, customer

### CLASSES:

Tomato, deodorant, adult, child, Bob, Mary

### RELATIONSHIPS:

Bob and Mary are customers.

Tomatoes and deodorants are goods.

Payment has two types – through cash or card.

Customer may be adult or a child.

**a. Is Bob a child or an adult? [Adult]**

**b. Does Bob now have at least two tomatoes? [Yes]**

**c. Did Bob buy any meat? [Yes]**

**d. If Mary was buying tomatoes at the same time as Bob, did he see her? [Yes]**

**e. Are the tomatoes made in the supermarket? [No]**

**f. What is Bob going to do with the tomatoes? [Eat them]**

**g. Does Shop and Shop sell deodorant? [Yes]**

**h. Did Bob bring some money or a credit card to the supermarket? [Yes]**

**i. Does Bob have less money after going to the supermarket? [Yes]**

**From the acquired knowledge base the questions can be answered with the logical reasoning as:**

(a) Bob is an adult  
Bob being a child may not carry two pounds of tomatoes and one pound of ground beef.

(b) Yes, Bob has at least two tomatoes.  
One pound weighs a minimum of three tomatoes. So, Bob has at least two tomatoes.

(c) Yes, Bob bought meat.  
Ground beef's meat is taken.

(d) Bob sees Mary if she buys tomatoes at the same time when Bob buys.  
As all the tomatoes are placed at same area, Bob and Mary will be at same place while buying and can see each other.

(e) Tomatoes are not made in the supermarket.  
Tomatoes are brought from some market or dealer and are sold in the supermarket.

(f) Bob is going to eat tomatoes.  
Tomatoes are the edible things. They are for the purpose of eating.

(g) Stop-n-Shop sells deodorant  
Deodorants are the part of items that are sold in supermarkets.

(h) Yes, Bob brings some money or credit card to the supermarket.  
To purchase any items in a supermarket, amount is to be paid.

(i) Yes, Bob has less money after going to the supermarket.  
Bob has to travel all the way to supermarket. He expends some amount for travelling.

**a. Are there other people in the Stop-n-Shop while Bob is there? [Yes—staff!]**  
Guard, Supervisor, Other Customers and Cashier  
Either the Supervisor or the other customers of the store may help Bob in choosing the goods based on their quality.

Cashier may help Bob with hi transactional procedures.

**b. Is Bob a vegetarian? [No]**

Bob bought Ground beef for meat.

**c. Who owns the deodorant in Stop-n-Shop?**

Any number of merchandises may own a deodorant.

Bob can buy what he likes.

**d. Did Bob have an ounce of ground beef? [Yes]**

Bob already have an ounce of ground beef

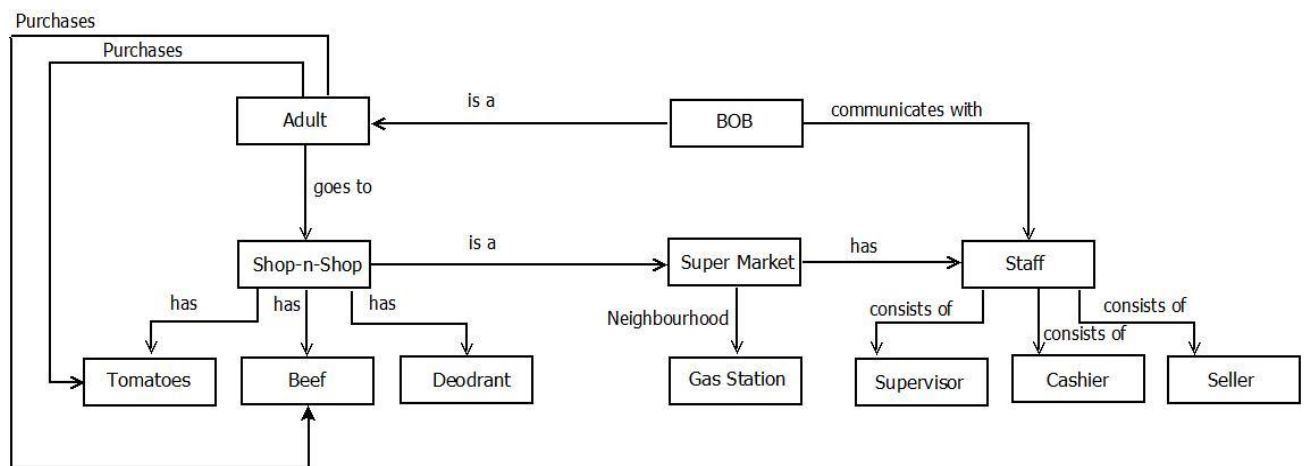
**e. Does the Shell station next door have any gas? [Yes]**

Every Shell station next door will have gas

**f. Do the tomatoes fit in Bob's car trunk? [Yes]**

Bob's car trunk is huge so tomatoes can fit in the trunk

## Semantic Network :





# THE FUTURE IS NOW !

