**Assessment for Day 1**



Person\_1

Person\_2

***Anne is minded by her babysitter.***

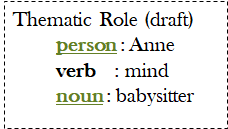
**Q**. Assuming all the similar images (images with two persons only) have been tagged by AI\_Image\_Tagger with the two Pixel boxes, Person\_1 and Person\_2, how to enable your Cognitive System to correctly align the Person\_1 to “Anne” and the Person\_2 to “babysitter”?

You may use the ConceptNet as the knowledge bases and define the rules which are generalisable and programmable.

In order to answer the question, you are expected to:

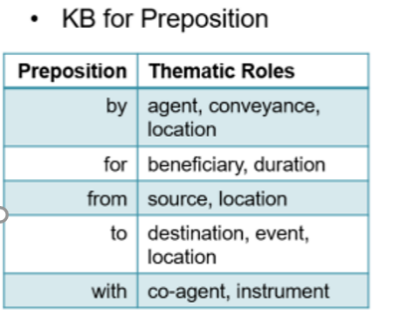
1. Use *Thematic Role* to represent the caption “*Anne is minded by her babysitter”****.***

*Start with the draft of Thematic Role as below*



*Apply Rule\_A: “Person” belongs to the role “Agent”*

*Then integrate with the KB for Preposition*



*What will be the complete Thematic Role ?*

Agent: babysitter

Verb: mind (primitive: take care)

Agent: Anne

1. Since the size/area of pixel boxes can be easily calculated, then the fact *sizeofPixel(Persion\_1) < sizeofPixel(Person\_2)* is true (programmable). If we define the Rule\_B based on experience as follow:

Rule\_B: SizeOfPixel (babysitter) > SizeOfPixel(Anne)

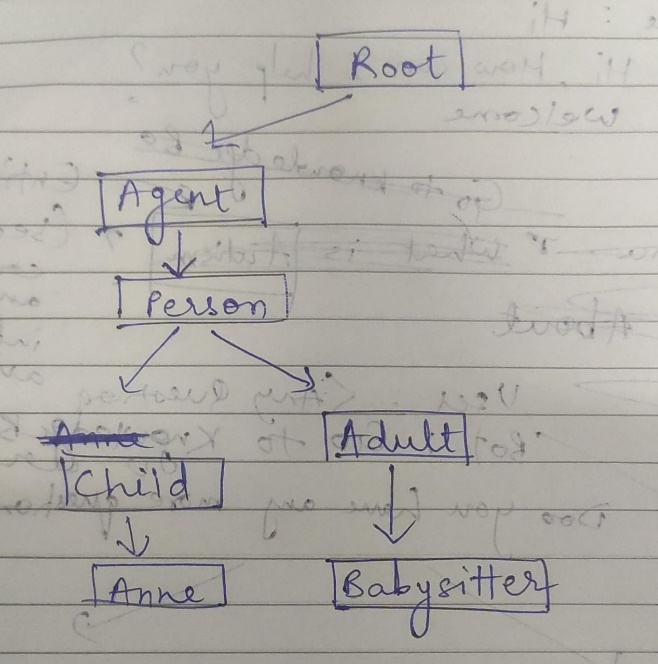
Then the alignment is reasoned out already as:

Babysitter = Person\_2, Anne=Person\_1.

However, the rule\_b is too specific and it cannot be generalized to other captions/pictures.

Could you **modify the “Rule b”** to make it more generalisable? Remember that the modified “Rule\_b” will be eventually used together with a Knowledge Graph constructed from [*ConceptNet*](http://conceptnet.io/)*,* in order toreason out the alignment. Thus please **construct the Knowledge Graph** based on *ConceptNet* and integrate with Rule\_b to **explain how** the alignment can be finally reason out.

Knowledge Graph



Rule\_b: IsChild(Anne) and IsAdult(babysitter) and

AgeOfPerson(Anne)< AgeOfPerson(babysitter)

Then babysitter = Person\_2 and Anne = Person\_1