

## Unit 6 Formative Activity: Agent Dialogue Using KQML and KIF

Scenario:

- Alice is an agent designed to procure stock.
- Bob is an agent that controls the stock levels for a warehouse.
- The dialogue covers Alice asking Bob about the available stock of 50 inch televisions and querying the number of HDMI slots the televisions have.

### Dialogue Example

Below is an example dialogue using KQML for message exchange and KIF for content representation.

1. Alice asks Bob about the available stock of 50 inch televisions.

KQML Message:

(sender Alice)

(receiver Bob)

(performative ask-one)

(language KIF)

(content (available-stock ?item))

(ontology warehouse)

(reply-with stock-query-001)

KIF Content:

(= ?item (tv-50-inch))

2. Bob replies with the available stock.

KQML Message:

(sender Bob)

(receiver Alice)

(performative tell)

(language KIF)

(content (available-stock (tv-50-inch) 14))

(ontology warehouse)

(in-reply-to stock-query-001)

KIF Content:

(= (available-stock (tv-50-inch)) 14)

3. Alice queries the number of HDMI slots on the televisions.

KQML Message:

(sender Alice)

(receiver Bob)

(performative ask-one)

(language KIF)

(content (hdmi-slots ?item ?num))

(ontology warehouse)

(reply-with hdmi-query-002)

KIF Content:

(= ?item (tv-50-inch))

4. Bob replies with the number of HDMI slots.

KQML Message:

(sender Bob)

(receiver Alice)

(performative tell)

(language KIF)

(content (hdmi-slots (tv-50-inch) 3))

(ontology warehouse)

(in-reply-to hdmi-query-002)

KIF Content:

(= (hdmi-slots (tv-50-inch)) 3)

## References

### References

Finin, T., Labrou, Y. and Mayfield, J., 1994. KQML as an agent communication language. Proceedings of the Third International Conference on Information and Knowledge Management, New York: ACM, pp.456-463. Available at: <https://doi.org/10.1145/191246.191322> [Accessed 17 Apr. 2025].

Genesereth, M.R. and Fikes, R.E., 1992. Knowledge Interchange Format, Version 3.0 Reference Manual. Stanford University. Available at: <https://logic.stanford.edu/kif/kif.html> [Accessed 17 Apr. 2025].