

Appendix A. Appendix

A.1. In-Context Learning Examples

A.1.1. MULTI-HOP LINK PREDICTION ICL EXAMPLE IN ABLATION FRAMEWORK

Context:

Node_47405 has relation_179 with Node_46497. Node_46497 has relation_180 with Node_46501.
Is Node_47405 connected with Node_46501?

Answer:

The answer is yes.

A.1.2. MULTI-HOP LINK PREDICTION ICL EXAMPLE IN KG-LLM FRAMEWORK

Context:

Node_47405 has relation_179 with Node_46497. Node_46497 has relation_180 with Node_46501.
Is Node_47405 connected with Node_46501?

Answer:

Node_47405 has relation_179 with Node_46497, means Miles Davis music artist is associated with genre Bebop. Node_46497 has relation_180 with Node_46501, means Bebop genre is under the broader genre Jazz. So Miles Davis music artist is associated with genre Jazz.

The answer is yes.

A.1.3. MULTI-HOP RELATION PREDICTION ICL EXAMPLE IN ABLATION FRAMEWORK

Context:

Node_47405 has relation_179 with Node_46497. Node_46497 has relation_180 with Node_46501.
What is the relationship between Node_47405 and Node_46501?

Answer:

The relationship between the Node_47405 and Node_46501 is relation_179.

A.1.4. MULTI-HOP RELATION PREDICTION ICL EXAMPLE IN KG-LLM FRAMEWORK

Context:

Node_47405 has relation_179 with Node_46497. Node_46497 has relation_180 with Node_46501.
What is the relationship between Node_47405 and Node_46501?

Answer:

Node_47405 has relation_179 with Node_46497, means Miles Davis music artist is associated with genre Bebop. Node_46497 has relation_180 with Node_46501, means Bebop genre is under the broader genre Jazz. So Miles Davis music artist is associated with genre Jazz.

The relationship between Miles Davis and Jazz is music_artist_genre.

A.2. Dataset 2

A.2.1. ABLATION FRAMEWORK ONE-SHOT IN-CONTEXT LEARNING FOR MULTI-HOP LINK PREDICTION

Context:
node_11809 has relation_9 with node_12218. node_12218 has relation_1 with node_9431. Is node 11809 connected with node 9431?
Answer:
The answer is yes.

A.2.2. KG-LLM FRAMEWORK ONE-SHOT IN-CONTEXT LEARNING FOR MULTI-HOP LINK PREDICTION

Context:
node_11809 has relation_9 with node_12218. node_12218 has relation_1 with node_9431. Is node 11809 connected with node 9431?
Answer:
node_11809 has relation_9 with node_12218, means node_11809 _verb_group node_12218. node_12218 has relation_1 with node_9431, means node_12218 _derivationally_related_form node_9431. So node 11809 _derivationally_related_form node 9431. The answer is yes.

A.2.3. ABLATION FRAMEWORK ONE-SHOT IN-CONTEXT LEARNING FOR MULTI-HOP RELATION PREDICTION

Context:
node_11809 has relation_9 with node_12218. node_12218 has relation_1 with node_9431. What is the relationship between node_11809 and node_9431?
Answer:
The relationship between the first node and the last node is relation_1.

A.2.4. KG-LLM FRAMEWORK ONE-SHOT IN-CONTEXT LEARNING FOR MULTI-HOP RELATION PREDICTION

Context:
node_11809 has relation_9 with node_12218. node_12218 has relation_1 with node_9431. What is the relationship between node_11809 and node_9431?
Answer:
node_11809 has relation_9 with node_12218, means node_11809 _verb_group node_12218. node_12218 has relation_1 with node_9431, means node_12218 _derivationally_related_form node_9431. So node 11809 _derivationally_related_form node 9431. The relationship between the first node and the last node is _derivationally_related_form.