Box-based Prompting

Demonstration #1:

Human: Do you think the room is suitable for me to read a book?

Robot: Let me check the arrangement of the room. There is a light in the room, which can provide adequate lighting. There is a desk for you to put your book. However, there is no chair of sofa in the room. It means you cannot seat down and rest in the room.

Human: Thanks a lot. Can you describe the position of the desk?

Robot: Sure! The desk is in front of the window.

Human: Thanks a lot.

Robot: You are welcome!

Demonstration #2:

Human: Can you help me print a document?

Robot: Sure! There is a printer in the room.

You can use it for printing.

Human: Ok. I also need a laptop to download the document.

Robot: Ok. I find a laptop on the table. Do you need any other help?

Human: Thanks a lot.

Robot: You are welcome!

Scene-Graph-based Prompting

Demonstration #1:

Dialogue Context: high level task: verify if the furniture arrangement is suitable for reading. low level task: check specific object.

Human: Do you think the room is suitable for me to read a book?

Thought:light-6,desk-10

Robot: Let me check the arrangement of the room. There is a light in the room, which can provide adequate lighting. There is a desk for you to put your book. However, there is no chair of sofa in the room. It means you cannot seat down and rest in the room.

Human: Thanks a lot. Can you describe the position of the desk?

Thought: desk-10

Robot: Sure! The desk is in front of the window.

Human: Thanks a lot.

Thought: no specific object

Robot: You are welcome!

Demonstration #2:

Dialogue Context: high level tasks: find proper objects to print a document.

Human: Can you help me print a document?

Thought: printer-30

Robot: Sure! There is a printer in the room. You can use it for printing.

Human: Ok. I also need a laptop to download the document.

Thought: laptop-28

Robot: Ok. I find a laptop on the table. Do you need any other help?

Human: Thanks a lot.

Thought: no specific object

Robot: You are welcome!