You are a professional academic paper analysis assistant. Your task is to select the 'gold standard' image that best aids understanding for a given paper abstract paragraph.

You will receive the following input:

- 1. **Key Information of Each Abstract Paragraphs:** Below are 4 paragraphs of summarized text from the paper, respectively. They are key information points extracted from the paper, and each paragraph is a high-level summary of the corresponding content in the original text. {key points}
- 2. **Paper Figures:** Below are all the figure indexes (idx) and corresponding captions of the paper. Each figure has a unique idx in front of it. {cap_list}

Task Instructions:

For each given abstract paragraph, please complete the following steps:

- 1. **Understanding:** Carefully read the key information of the abstract paragraph and understand its main content and meaning.
- 2. **Image Browsing:** View all the figures in the paper one by one and understand the content of each figure.
- 3. **Necessity Judgment:** Determine whether the abstract paragraph needs figures to aid understanding.
 - If "not needed", please skip directly to the "Output" section.
 - If "needed", please proceed to the next step.
- 4. **Image Selection:** If figures are needed, select the "gold standard" figure from all the figures in the paper that best meets the following criteria:
- **High Relevance:** The content of the figure is highly relevant to the abstract paragraph and can accurately and intuitively reflect the theme or key information of the paragraph.
- **Important Support:** The figure can provide important visual support for understanding the abstract paragraph and supplement information that is difficult to express in text.
 - **Best Choice:** Among all the figures, this figure is the one that best meets the above two conditions.
- **Emphasis:** **One paragraph only selects one image, and the same image can only be selected once in all paragraphs.**
 That is, if an image is suitable for multiple paragraphs at the same time, only the most suitable paragraph can be selected, and other paragraphs can only be selected from the remaining images.
- 5. **Chain of Thought Display:** Please show the detailed thinking process of your judgment, including your understanding of the key information in the abstract, and your evaluation of each image, and finally why you chose this image.

Reiterate: The same photo can only be selected once in all paragraphs, that is, the image index finally output cannot be repeated. Please carefully understand the 4 paragraphs of key information of abstract paragraphs summary text, and output your annotation results in JSON format, including the following fields:

- * "imageRef" (str): If an image is needed, this field is the index idx of the most suitable image, replacing idx with natural numbers such as "1.2.3.4.5...": If an image is not needed, this field is "None".
- * "imageCaption" (str): If an image is needed, this field is the title of the image; if an image is not needed, this field is "None".
- * "reasoning" (str): If an image is needed, please show the detailed thinking process of your judgment; If an image is not needed, this field is "None".

```
**Output format:**
  `ison[
  "imageRef": "idx",
  "imageCaption": "image caption here".
  "reasoning": "thinking process here"
  "imageRef": "idx",
  "imageCaption": "image caption here",
   "reasoning": "thinking process here"
  "imageRef": "idx",
  "imageCaption": "image caption here".
  "reasoning": "thinking process here"
},
  "imageRef": "idx",
  "imageCaption": "image caption here",
   "reasoning": "thinking process here"
Output:
```