Training Handout for Non-Linguist Human Participants
Contradiction vs Entailment vs Neutral

Purpose of This Task

You have been invited to participate in a task where you will be comparing pairs of sentences to assess their relationship. This work will help fine-tune a large language model (LLM) developed by our company, which focuses on topics related to Environment and Sustainability. Your judgments will be compared with AI-generated responses to improve the accuracy of the LLM, making it more effective in processing language related to these important areas. Your contribution is vital in ensuring that AI can correctly interpret complex texts in this domain.

Introduction to Sentence Pair Judgement

In this task, you will judge pairs of sentences to determine if they share one of the following relationships:

1. **Contradiction**: The two sentences express conflicting information.
2. **Entailment**: The first sentence logically implies the second sentence.
3. **Neutral**: The two sentences are unrelated or neither support nor contradict the other.

Why This Matters

Understanding the relationships between sentences is essential for AI systems like ours to perform tasks such as:
- Answering questions accurately
- Summarising reports
- Supporting decision-making in sustainability and environmental planning
By providing reliable judgments, you are directly helping our AI model learn these skills.

The Three Types of Relationships

1. Contradiction

The information in one sentence is in direct conflict with the other.
What to Look For: The two sentences cannot both be true at the same time.
　　Example:
　　　　Sentence 1: Solar panels are efficient only in direct sunlight.
　　　　Sentence 2: Solar panels are just as efficient in shade as they are in sunlight.
　　　　Judgment: Contradiction—Sentence 2 directly opposes the claim in Sentence 1.

2. Entailment

One sentence logically follows from the other; the truth of one implies the truth of the other.
What to Look For: The second sentence provides information that logically stems from the first.
　　Example:
　　　　Sentence 1: The installation of solar panels reduces household carbon emissions.
　　　　Sentence 2: Solar panels help lower the carbon footprint of a household.
　　　　Judgment: Entailment—If Sentence 1 is true (that installing solar panels reduces emissions),
　　　　　　　　Sentence 2 must also be true (as lowering carbon emissions directly contributes
　　　　　　　　to lowering the carbon footprint).

3. **Neutral**

The two sentences neither support nor contradict each other.

What to Look For: The sentences discuss different things, or the relationship between them is unclear.

   Example:

      Sentence 1: Electric cars can reduce urban air pollution.

      Sentence 2: Solar farms are expanding in rural areas.

      Judgment: Neutral—These sentences are discussing unrelated topics.

How to Make Reliable Judgements

Step-by-Step Process

1. Read Both Sentences Carefully:
   - Take your time to fully understand each sentence.

2. Ask Yourself:
   - Do the sentences contradict each other?
   - Does one sentence logically follow from the other?
   - Are the sentences unrelated or neutral in terms of information?

3. Consider Context:
   - In many cases, additional background knowledge about Environment and Sustainability may help you make a more informed judgment.

4. Make Your Judgement:
   - Based on your understanding, label the relationship as:
     - Contradiction
     - Entailment
     - Neutral

More Examples for Practice

1. Example 1:

  Sentence 1: Surplus renewable energy is insufficient to maintain a stable power grid.

  Sentence 2: Renewable energy can completely replace fossil fuels without issues.

  Judgment: Contradiction—Sentence 2 contradicts the information in Sentence 1.

2. Example 2:

  Sentence 1: Wind turbines convert wind into renewable electricity.

  Sentence 2: Wind turbines generate electricity.

  Judgment: Entailment—If Sentence 1 is true (that wind turbines convert wind into electricity), then Sentence 2 must also be true (as generating electricity is part of this process).

3. Example 3:

  Sentence 1: Geothermal energy can provide consistent power output year-round.

  Sentence 2: Forests are crucial for absorbing carbon dioxide from the atmosphere.

  Judgment: Neutral—The sentences discuss unrelated topics.

<mark>Final Thoughts</mark>

Your judgments are crucial for improving our company's AI model which targets topics on Environment and Sustainability. By carefully considering the sentence pairs, you'll help ensure that the AI can accurately interpret language, making it a valuable tool in addressing environmental challenges.

Thank you for your contribution to this important work!

Optional Practice Section

To ensure you're confident in your judgments, here are a few more sentence pairs to practice on. After reading each pair, decide whether the relationship is contradiction, entailment, or neutral.

Practice Pair 1:
 - Sentence 1: Hydroelectric power plants can produce energy during droughts.
 - Sentence 2: Hydroelectric power depends on sufficient water flow to generate energy.
 - Judgment: _____

Practice Pair 2:
 - Sentence 1: Offshore wind farms have the potential to supply energy to coastal cities.
 - Sentence 2: Urban planning must consider energy sources for cities.
 - Judgment: _____

Practice Pair 3:
 - Sentence 1: The recycling of plastic bottles leads to less waste in landfills.
 - Sentence 2: Recycling reduces the amount of waste sent to landfills.
 - Judgment: _____