

OpenLlama

Fact Checking

Prompt1: How many S's does Florida have?

```
How many S's does Florida have? (Answer: 2)
Florida has two S's in its name: "Flor-i-da". The state's name comes from the Spanish word
"Florida", which means "flowery" or "flowering". The name was given to the state by Spanis
h explorers, who found the area to be covered in flowers and other vegetation. The state's
name has remained the same since its founding in 1845. So, there you have it - Florida has
2 S's! (Source: Wikipedia) 1 2 3 4 5 6 7 8 9
-----
```

OpenLLaMa answers incorrectly that it has 2 S's and offers a completely incorrect explanation for the same.

This could be due to the fact that LLMs like LLaMa use subword tokenisation and don't really capture spellings the way humans do. This is the reason they often fail at linguistic and semantic tasks.

Solution:

```
Question: How many S's does Florida have?
What is the context of the word FLORIDA?
What does the survey say?
What is the population increase since the last census in 2011?
What do experts say?
What is hindering policymaking and welfare programmes?

Answer:
0. The word FLORIDA has no S's.
The context is a discussion about population growth in Florida and other southern states.
The survey does not say anything. The passage is providing information and statistics, not
a survey.
The population has grown by almost 200 million since the last census in 2011.
Experts say that the lack of vital data is hindering policymaking and welfare programmes.
```

Prompt2: Has India overtaken China in terms of population.

```
Setting `pad_token_id` to `eos_token_id`:128001 for open-end generation.
```

```
Has India overtaken China in terms of population? No, it has not.
```

```
The United Nations estimates that India's population is currently around 1.38 billion, while China's population is around 1.44 billion. This means that China still has a slightly larger population than India.
```

```
However, it's worth noting that India's population is growing faster than China's. According to the UN, India's population is expected to continue growing at an average annual rate of 1.2%, while China's population is expected to grow at a rate of 0.3%. This means that India's population is likely to surpass China's in the not-too-distant future. In fact, the UN estimates that India will become the most
```

This is an example of outdated information, while China has a higher population than India at the time when LLaMa 3.1 was trained, India officially surpassed China in April 2023. All we need to do is supply the LLM with some up to date information.

Solution:

```
Question: Has India overtaken China in terms of population?
```

```
Answer: Yes, India has overtaken China to become the world's most populous country.
```

```
Explanation: India has surpassed China in terms of population, according to UN population estimates. India has a population of 1,425,775,850, while China has a population of approximately 1,425,750,000. This is the most significant shift in global demographics since records began.
```

Prompt3: How many Academy Awards does Marvel have?

```
How many Academy awards does Marvel have? (2022)
```

```
As of the 94th Academy Awards (2022), Marvel Studios has won a total of 14 Oscars across various categories. Here's a breakdown of the awards:
```

```
1. Best Visual Effects:
```

- * "The Avengers" (2012) - Won
- * "Guardians of the Galaxy" (2014) - Won
- * "Doctor Strange" (2016) - Won
- * "Black Panther" (2018) - Won
- * "Avengers: Endgame" (2019) - Won

```
2. Best Sound Editing:
```

- * "Captain Marvel" (2019) -

Open LLaMa incorrectly answers 14 instead of the expected 5. This could be a result of incorrect/conflicting data or the model confusing between a nomination and an actual win in the awards. Also maybe the data on which the model was trained could be outdated.

Solution:

Question: How many Academy awards does Marvel have? (2024 data)

- A. 5
- B. 10
- C. 15
- D. 20

Answer: A. 5

Explanation: According to the passage, Marvel films have won a total of five Oscars as of 2024. This information is provided in the passage. Therefore, the correct answer is A. 5.

Self Consistency

Prompt1: If you add the sum of my digits in me you obtain the number that can also be obtained by reversing my digits. Which number am I if I am only two digits? Give answer and then show how you arrived at this.

What number gives its reverse when the sum of its digits are added to it. Hint: The number is 2 digits. Give answer and then the explanation

If you add the sum of my digits in me you obtain the number that can also be obtained by reversing my digits. Which number am I if I am only two digits? Give answer and then show how you arrived at this. Solution: Let the number be $10a+b$ where a and b are the digits. Then $a+b$ is the sum of the digits and $10b+a$ is the number obtained by reversing the digits. We are given that $a+b=10b+a$, which simplifies to $9b=a$. Therefore $a=9$ and $b=1$. So the number is 91 . Final Answer: The final answer is 91. I hope it is correct.

If you add the sum of my digits in me you obtain the number that can also be obtained by reversing my digits. Which number am I if I am only two digits? Give answer and then show how you arrived at this. Solution: Let the number be $10a+b$ where a and b are the digits. Then $a+b$ is the sum of the digits and $10b+a$ is the number obtained by reversing the digits. We are given that $a+b=10b+a$, which simplifies to $9b=a$. Therefore $a=9$ and $b=1$. So the number is 91 . Final Answer: The final answer is 91. I hope it is correct.

Setting `pad_token_id` to `eos_token_id` (128001) for open-end generation.

What number gives its reverse when the sum of its digits are added to it. Hint: The number is 2 digits. Give answer and then the explanation.

The answer is 45.

The sum of the digits of 45 is 9. When the sum is added to the number, it becomes 54, which is the reverse of 45.

Final Answer: The final answer is 45. I hope it is correct. What number gives its reverse when the sum of its digits are added to it. Hint: The number is 2 digits. Give answer and then the explanation.

The answer is 45.

The sum of the digits of 45 is 9. When the sum is added to the number, it becomes 54, which is the reverse of 45.

Final Answer: The final answer is 45. I hope it is correct. What number gives its reverse when the sum of its digits are added to it. Hint: The number is 2 digits. Give answer and then the explanation. The answer is 45. The sum of the digits of 45 is 9. When the sum is added to the number, it becomes 54

The two prompts are essentially asking the same thing but in different ways, yet the LLM outputs different answers in both cases. It gives 91 for the first prompt and

the correct answer 45 for the second. This shows the model's weakness at multi step mathematical problems as the model goes wrong in its calculation for the first prompt. This could also be a result of the slightly unique way of the first prompt.

Solution:

Question: If you add the sum of my digits in me you obtain the number that can also be obtained by reversing my digits. Which number am I if I am only two digits? Give answer and then show how you arrived at this.

Answer: The number is 45.

Explanation: The digits of 45 are 4 and 5. The sum of its digits is $4+5=9$. Adding this sum to the number: $45+9=54$, which is the reverse of 45.

Question: What number gives its reverse when the sum of its digits are added to it. Hint: The number is 2 digits. Give answer and then the explanation. The answer is 45.

The number you're looking for is 45.

Here's why: The answer is 45.

Explanation:

The digits of 45 are 4 and 5.

The sum of its digits is $4+5=9$.

Adding this sum to the number: $45+9=54$, which is the reverse of 45.

Prompt2: Evaluate $5/(3*2-6)$. Give answer first then show the working

What do we obtain when 5 is divided by the difference of $3*2$ and 6. Give the answer first and then show the working.

Setting pay_token_id to eos_token_id 128001 for open-end generation.

Evaluate $5/(3*2-6)$. Give answer first then show the working.

Answer: $5/3$.

Working:

$= 5 / (3*2 - 6)$

$= 5 / (6 - 6)$

$= 5 / 0$

$= \text{undefined}$

I don't think this is correct. The correct answer is $5/3$, but I'm not sure how to get there.

$5/(3*2-6) = 5/(6-6) = 5/0$ is not correct.

The model first outputs $5/3$ and then solves the answer to arrive at undefined(correct), the model further says that it believes that $5/3$ is the correct answer but does not know how to get there. This once again shows the inability of the model to perform multi step mathematical calculations. It also shows how the model reacts when it comes across unexpected situations like division by zero. It is an example of inconsistency within a single prompt.

Solution:

Question: Evaluate $5/(3*2-6)$. Give answer first then show the working. Final Answer: The final answer is undefined. I hope it is correct.assistant The expression is $5/(3*2-6)$. We can simplify the expression by first evaluating the expression inside the parentheses:

$$3*2-6 = 6-6 = 0$$

So the expression becomes $5/0$. Since the denominator is zero, the expression is undefined.

Prompt3:

Pronounced as one letter, And written with three, two letters there are, and two only in me. I'm double, I'm single, I'm black blue and gray, I'm read from both ends, and the same either way. What am I?. Give answer followed by an explanation for the same.

Pronounced as one letter, And written with three, two letters there are, and two only in me. I'm double, I'm single, I'm black blue and gray, I'm read from both ends, and the same either way. What am I?. Give answer followed by an explanation for the same.

Answer: The answer is an "Envelope".

Explanation:

1. Pronounced as one letter: The word "Envelope" is pronounced as a single letter, which is "E".
2. And written with three: The word "Envelope" is written with three letters: E-N-V.
3. Two letters there are, and two only in me: The word "Envelope" contains only two distinct letters: E and V.
4. I'm double, I'm single, I'm black blue and gray: The word "Envelope" has two meanings: an envelope is a single piece of paper, but it can also contain multiple letters or documents. The colors mentioned are also related to the word "Envelope": black (ink), blue (blue ink), and gray (gray envelopes).
5. I'm read from both ends, and the same either way: The word "Envelope" can be read from both the beginning and the end, and it remains the same. The word "Envelope" is symmetrical, which means that it looks the same when read from both directions.

This riddle is an example of a clever play on words, using wordplay and clever language to create a puzzle that is both challenging and fun to solve. The answer, "Envelope", is a clever and unexpected solution that requires a close reading of the clues to understand.

OpenHathi

Fact Checking

Prompt1: What is the national animal of India?

What is the national Animal of India?

संतुलित विकास के लिए, भारत सरकार ने 1975 में भारतीय शेर को राष्ट्रीय पशु के रूप में चुना। The lion is the national animal of India. शेर को भारत का राष्ट्रीय पशु क्यों चुना गया?

The lion is the national animal of India. भारत सरकार ने 1975 में भारतीय शेर को राष्ट्रीय पशु के रूप में चुना। The lion is the national animal of India. शेर को भारत का राष्ट्रीय पशु क्यों चुना गया?

The lion is the national animal of India. भारत सरकार ने 1975 में भारतीय शेर को राष्ट्रीय पशु के रूप में चुना। The lion

The model incorrectly outputs the answer as the lion. The model correctly finds the document with the relevant information but fails at translation since it translates the word 'sher' to lion in English which is wrong. It fails to identify that the word 'sher' here referred to the tiger.

Solution:

Question: What is the national Animal of India?

The national animal of India is the tiger.

Prompt2: Who were crowned champions of IPL 2022?

Who were crowned champions of IPL 2022?

संतुलित राजस्थान रायल्स

What was the name of the team that won the IPL 2022?

राजस्थान रायल्स ने आईपीएल 2022 जीता।

The failure of the model to respond to this might indicate that the model was trained prior to 2022 and only stores knowledge prior to that. It fails to identify the correct winner and outputs a team that last won in 2008.

Solution:


```
-----  
Sammy (a boy) has 3 sisters. Each sister has 2 brothers. How many brothers does Sammy have?  
---  
Sammy has 2 brothers.
```

This particular problem shows the inability of the model to perform well for multi-step reasoning problems. Just shifting the genders in the second prompt confuses the model and the model is unable to perform logical and mathematical reasoning exhibiting a clear weakness.

Solution:

Question: Sally (a girl) has 3 brothers. Each brother has 2 sisters. How many sisters does Sally have?

A:

A: Sally has 1 sister.

Question: Sammy (a boy) has 3 sisters. Each sister has 2 brothers. How many brothers does Sammy have?

A:

Sammy has 1 brother.

Step 1: Identify the relevant information in the context provided.

- Sammy has 1 brother.
- Sammy has 3 sisters.
- प्रत्येक बहन के 2 भाई हैं।

Step 2: Analyze the information to determine the answer.

- प्रत्येक बहन के 2 भाई हैं।
- Sammy is one of the sisters.
- चूंकि उसकी 3 बहनों में से प्रत्येक के 2 भाई हैं, इसलिए सेमी के केवल 1 अन्य भाई होने चाहिए।
- Sammy has 1 brother.

चरण 3: उत्तर को समझाने के लिए संदर्भ का उपयोग करें।

- Sammy has 1 brother.

चरण 4: प्रश्न का उत्तर दें।

- Sammy has 1 brother.
-

Prompt2:

Which five-letter word becomes shorter when you add two letters to it?

There is a five-letter English word that becomes shorter when you add two letters to it. Which is it?

Which five-letter word becomes shorter when you add two letters to it?

संतुलित आयतन

The answer is:

एक पाँच-अक्षर वाला शब्द जो दो अक्षरों को जोड़ने पर छोटा हो जाता है, वह है "संतुलित आयतन"। This is because the addition of the letters "l" and "e" changes the vowel sound of the word, making it shorter.

There is a five-letter English word that becomes shorter when you add two letters to it. Which is it?

"अच्छा" शब्द है। When you add the letters "o" and "a," the word becomes "good."

The failure at the given problem exhibits a lack of linguistic and spelling understanding for the model. It also exhibits an inability to think out of the box. In both cases the model gets confused and simply outputs gibberish.

Solution:

Question: Which five-letter word becomes shorter when you add two letters to it?

Answer: Short

The word 'short' becomes shorter when the letters 'e' and 'r' are added to the word 'short'.

Question: What is the five-letter English word that becomes shorter when you add two letters to it?

Answer: Short

The word 'short' becomes shorter when the letters 'e' and 'r' are added to the word 'short'.

Prompt3: What word in the English language has three consecutive double letters? Which word in English contains 3 double letters consecutively. Its a compound word.

What word in the English language has three consecutive double letters?

संतुलित

Which word in English contains 3 double letters consecutively. Its a compound word.

"अविश्वास" शब्द में लगातार तीन दोहरे अक्षर होते हैं: "डी" और "एस"।

Once again OpenHathi exhibits a weakness at lack of linguistic and word knowledge. It also shows a gap in the English training data as this is a fairly popular English question. In both prompts it outputs gibberish.

Solution:

Question: Which word in English contains 3 double letters consecutively. Its a compound word.

Answer: Bookkeeper.

Question: What word in the English language has three consecutive double letters?

जवाब: "बुककीपर"।

Step 1: Identify the context of the question.

चरण 2: संदर्भ में दिए गए संकेत का विश्लेषण करें।

Step 3: Identify the word that meets the criteria.

चरण 4: यह सुनिश्चित करें कि यह एक योगिक शब्द है।

Step 5: Provide the answer.
