few_shot

October 13, 2024

[1]:
```python
from __future__ import annotations

from pprint import pprint

import pandas as pd
from priomptipy import (
    AssistantMessage,
    Scope,
    SystemMessage,
    UserMessage,
    render,
)
```

[2]:
```python
def add_few_shot(examples: list[dict]) -> list[Scope]:
    """Convert examples to the required structure.

    Args:
        examples (list[dict]): A list of dictionaries
        containing input and output examples.

    Returns
    -------
        list[Scope]: A list of Scope objects containing
        the few shot examples.
    """
    few_shot_scope = []
    # Create a Scope object for each example with highest priority
    [
        few_shot_scope.append(
            Scope(
                [UserMessage(ex["input"]), AssistantMessage(ex["output"])],
                absolute_priority=10,
            ),
        )
        for ex in examples
    ]
    return few_shot_scope
```

[3]:
```
sales_data = {
    "Product": ["A", "B", "C", "D", "E"],
    "Sales (Jan)": [100, 80, 50, 90, 200],
    "Sales (Feb)": [150, 90, 60, 100, 210],
    "Sales (Mar)": [200, 120, 70, 110, 220],
    "Sales (Apr)": [250, 130, 80, 120, 230],
    "Sales (May)": [300, 160, 100, 130, 240],
    "Sales (Jun)": [350, 200, 110, 140, 250],
}
sales_df = pd.DataFrame(sales_data)
df_as_text = sales_df.to_string(index=False)
```

[4]:
```
few_shot_data = [
    {
        "input": "Analyze the sales trend for Product B over six months.",
        "output": "Product B shows a steady growth over the six-month period. \
        Sales grew from 80 in January to 200 in June, indicating a total \
            increase of 150%.",
    },
    {
        "input": "Which product had the highest total sales over the last six \
            months?",
        "output": "Product E had the highest total sales over six months, \
            with a combined total of 1,350 units.",
    },
    {
        "input": "Compare the growth rates of Products A and C over the \
            six-month period.",
        "output": "Product A grew by 250%, while Product C grew by 120%. \
            Product A exhibited a stronger growth rate.",
    },
    {
        "input": "What is the average monthly sales for Product D?",
        "output": "The average monthly sales for Product D is 115 units.",
    },
]
few_shot_examples = add_few_shot(few_shot_data)
```

[5]:
```
system_message = [SystemMessage("You are Quarkle, an AI Developmental Editor")]

actual_conversation = [
    UserMessage(f"Here is the sales data:\n{df_as_text}\n\
                Calculate the percentage increase in sales for Product E from \
                January to June."),
]
```

[6]:
```
# Combine all message components
messages = system_message + few_shot_examples + actual_conversation
# Set rendering options including token limit and tokenizer
render_options = {"token_limit": 1000, "tokenizer": "cl100k_base"}
# Render the messages
result = await render(messages, render_options)  # noqa: PLE1142
pprint(result["prompt"])
```

```
{'messages': [{'content': 'You are Quarkle, an AI Developmental Editor',
               'role': 'system'},
              {'content': 'Analyze the sales trend for Product B over six '
                          'months.',
               'role': 'user'},
              {'content': 'Product B shows a steady growth over the six-month '
                          'period.         Sales grew from 80 in January to '
                          '200 in June, indicating a total             '
                          'increase of 150%.',
               'role': 'assistant'},
              {'content': 'Which product had the highest total sales over the '
                          'last six             months?',
               'role': 'user'},
              {'content': 'Product E had the highest total sales over six '
                          'months,             with a combined total of 1,350 '
                          'units.',
               'role': 'assistant'},
              {'content': 'Compare the growth rates of Products A and C over '
                          'the             six-month period.',
               'role': 'user'},
              {'content': 'Product A grew by 250%, while Product C grew by '
                          '120%.             Product A exhibited a stronger '
                          'growth rate.',
               'role': 'assistant'},
              {'content': 'What is the average monthly sales for Product D?',
               'role': 'user'},
              {'content': 'The average monthly sales for Product D is 115 '
                          'units.',
               'role': 'assistant'},
              {'content': 'Here is the sales data:\n'
                          'Product  Sales (Jan)  Sales (Feb)  Sales (Mar)  '
                          'Sales (Apr)  Sales (May)  Sales (Jun)\n'
                          '      A          100          150          '
                          '200          250          300          350\n'
                          '      B           80           90          '
                          '120          130          160          200\n'
                          '      C           50           60          '
                          '70           80          100          110\n'
                          '      D           90          100          '
                          '110          120          130          140\n'
```

```
                        '      E          200          210          '
                        '220          230          240          250\n'
                        '               Calculate the percentage increase '
                        'in sales for Product E from                January '
                        'to June.',
             'role': 'user'}],
'type': 'chat'}
```