Conversation Buffer Window

`ConversationBufferWindowMemory` keeps a list of the interactions of the conversation over time. It only uses the last K interactions. This can be useful for keeping a sliding window of the most recent interactions, so the buffer does not get too large.

Let's first explore the basic functionality of this type of memory.

```
from langchain.memory import
ConversationBufferWindowMemory
```

```
memory = ConversationBufferWindowMemory( k=1)
memory.save_context({"input": "hi"},
{"output": "whats up"})
memory.save_context({"input": "not much
you"}, {"output": "not much"})
```

```
memory.load_memory_variables({})
```

```
    {'history': 'Human: not much you\nAI: not
much'}
```

We can also get the history as a list of messages (this is useful if you are using this with a chat model).

```
memory = ConversationBufferWindowMemory( k=1,
return_messages=True)
memory.save_context({"input": "hi"},
{"output": "whats up"})
memory.save_context({"input": "not much
you"}, {"output": "not much"})
```

```
memory.load_memory_variables({})
```

```
    {'history': [HumanMessage(content='not
much you', additional_kwargs={}),
      AIMessage(content='not much',
additional_kwargs={})]}
```

Using in a chain

Let's walk through an example, again setting `verbose=True` so we can see the prompt.

```
from langchain_openai import OpenAI
from langchain.chains import
ConversationChain
conversation_with_summary =
ConversationChain(
    llm=OpenAI(temperature=0),
    # We set a low k=2, to only keep the last
2 interactions in memory

memory=ConversationBufferWindowMemory(k=2),
    verbose=True
)
conversation_with_summary.predict(input="Hi,
what's up?")
```

```
    > Entering new ConversationChain chain...
    Prompt after formatting:
    The following is a friendly conversation
between a human and an AI. The AI is
talkative and provides lots of specific
details from its context. If the AI does not
know the answer to a question, it truthfully
says it does not know.
```

```
    Current conversation:

    Human: Hi, what's up?
    AI:

    > Finished chain.
```

```
    " Hi there! I'm doing great. I'm
currently helping a customer with a technical
issue. How about you?"
```

```
conversation_with_summary.predict(input="What's
their issues?")
```

```
    > Entering new ConversationChain chain...
    Prompt after formatting:
    The following is a friendly conversation
between a human and an AI. The AI is
talkative and provides lots of specific
details from its context. If the AI does not
know the answer to a question, it truthfully
says it does not know.
```

```
    Current conversation:
    Human: Hi, what's up?
    AI:  Hi there! I'm doing great. I'm currently helping a customer with a technical issue. How about you?
    Human: What's their issues?
    AI:

    > Finished chain.
```

```
    " The customer is having trouble connecting to their Wi-Fi network. I'm helping them troubleshoot the issue and get them connected."
```

```
conversation_with_summary.predict(input="Is it going well?")
```

```
    > Entering new ConversationChain chain...
    Prompt after formatting:
    The following is a friendly conversation between a human and an AI. The AI is talkative and provides lots of specific
```

```
details from its context. If the AI does not
know the answer to a question, it truthfully
says it does not know.

    Current conversation:
    Human: Hi, what's up?
    AI:  Hi there! I'm doing great. I'm
currently helping a customer with a technical
issue. How about you?
    Human: What's their issues?
    AI:  The customer is having trouble
connecting to their Wi-Fi network. I'm
helping them troubleshoot the issue and get
them connected.
    Human: Is it going well?
    AI:

    > Finished chain.




    " Yes, it's going well so far. We've
already identified the problem and are now
working on a solution."
```

```
# Notice here that the first interaction does
not appear.
```

```
conversation_with_summary.predict(input="What's
the solution?")
```

```
    > Entering new ConversationChain chain...
    Prompt after formatting:
    The following is a friendly conversation
between a human and an AI. The AI is
talkative and provides lots of specific
details from its context. If the AI does not
know the answer to a question, it truthfully
says it does not know.

    Current conversation:
    Human: What's their issues?
    AI:  The customer is having trouble
connecting to their Wi-Fi network. I'm
helping them troubleshoot the issue and get
them connected.
    Human: Is it going well?
    AI:  Yes, it's going well so far. We've
already identified the problem and are now
working on a solution.
    Human: What's the solution?
    AI:

    > Finished chain.
```

```
    " The solution is to reset the router and
reconfigure the settings. We're currently in
the process of doing that."
```