

1 TTI

1.0.1 Check Again Prompt Used

```
"""You just decided to take this action:  
{{"name": "{action_r1.name}", "arguments": {json.dumps(action_r1.kwargs)}}}
```

WAIT - Before executing, let's verify:

1. Does this action follow the policy and task requirements?
2. Have you gathered all necessary information?
3. Is there a more effective action you could take?

Respond with your decision in this exact format:

Thought:

<One-line reasoning about whether to keep or change the action>

Action:

```
{{"name": <action_name>, "arguments": <arguments>}}
```

If you decide to KEEP the original action, just repeat it. If you decide to CHANGE, provide
"""

1.0.2 Change of of TTI Status

Table 2 shows the average action-change across TTI refinement rounds (Basically, every time the action changes because of TTI)

Environment	TTI-1	TTI-2	TTI-4	TTI-6
Airline	7.34%	6.98%	5.63%	4.54%
Retail	25.50%	28.93%	28.38%	37.99%

Table 2: Average action-change rate across TTI refinement rounds for Airline and Retail

1.0.3 Examples

Example1

Following is example of Task 1, Retail for when the the action from ReAct is retained.

```
{  
    "role": "user",  
    "content": "Hi, I need to exchange some items from an order I just  
    received. The order number is W2378156."  
},  
{  
    "role": "assistant",  
    "content": "Thought:  
    I need to authenticate the user identity before proceeding with any  
    actions related to their order. I will first locate the user ID
```

```

using the provided order number. Since the order number was provided
, I will attempt to find the user ID by looking up the order details
.

Action:
{\\"name\": \"get_order_details\", \"arguments\": {\"order_id\": \"#
W2378156\"}}"
},
{
"role": "user",
"content": "You just decided to take this action:
{\\"name\": \"get_order_details\", \"arguments\": {\"order_id\": \"#
W2378156\"}}"

WAIT - Refinement round 1/1. Before executing , let's verify:
1. Does this action follow the policy and task requirements?
2. Have you gathered all necessary information?
3. Is there a more effective action you could take?

Respond with your decision in this exact format:
Thought:
<One-line reasoning about whether to keep or change the action>
Action:
{\\"name\": <action_name>, \"arguments\": <arguments>}

If you decide to KEEP the original action , just repeat it. If you
decide to CHANGE , provide the new action.
"
},
{
"role": "assistant",
"content": "Thought:
The action to retrieve order details is appropriate and necessary to
authenticate the user and verify the order status before proceeding
with an exchange. The order ID was provided , and checking its
details will confirm if it is eligible for exchange (i.e., delivered
status). This step aligns with the policy and ensures safe handling
of the request.

Action:
{\\"name\": \"get_order_details\", \"arguments\": {\"order_id\": \"#
W2378156\"}}"
}

```

You can see that the assistant model produces "The action to retrieve order details is appropriate" even after the TTI Refinement prompt.

Example 2 Following is example of Task 14, Airline for when the the action from ReAct is changed because of the TTI.

```
{

```

```

"role": "assistant",
"content": "Thought:
I have now searched for both flight segments to obtain business class
prices. With both prices, I can calculate the cost difference for
upgrading two passengers.

Action:
{\\"name\": \"calculate\", \"arguments\": {\"expression\": \"(127 - 122)
+ (127 - 122) * 2\"}}"
},
{
"role": "user",
"content": "You just decided to take this action:
{\\"name\": \"calculate\", \"arguments\": {\"expression\": \"(127 -
122) + (127 - 122) * 2\"}}"

WAIT - Refinement round 6/6. Before executing, let's verify:
1. Does this action follow the policy and task requirements?
2. Have you gathered all necessary information?
3. Is there a more effective action you could take?

Respond with your decision in this exact format:
Thought:
<One-line reasoning about whether to keep or change the action>
Action:
{\\"name\": <action_name>, \"arguments\": <arguments>}

If you decide to KEEP the original action, just repeat it. If you
decide to CHANGE, provide the new action.
"
},
{
"role": "assistant",
"content": "Thought:
The calculation is incorrect because it does not account for both
segments and both passengers properly. The correct expression should
compute the price difference per segment and multiply by two
passengers.

Action:
{\\"name\": \"calculate\", \"arguments\": {\"expression\": \"(127 - 122)
* 2 + (127 - 122) * 2\"}}"
},
{
"role": "user",
"content": "API output: 20.0"
}

```

Here you can see that before, the action to be taken was $(127 - 122) + (127 - 122) * 2$. After TTI Refinement, $(127 - 122) * 2 + (127 - 122) * 2$