

# Task Processing Example

## Input

{Flight Data}

```
1  {"timestamp": "2024-09-06T08:46:39.269Z", "plane_altitude":  
   "2823.8271042", "ground_altitude": "1531.7495142",  
   "plane_pitch_degrees": "0.3688242", "plane_bank_degrees":  
   "6.7081217", "plane_heading_degrees_true": "2.4565288",  
   "plane_heading_degrees_magnetic": "7.3234036", "airspeed_indicated":  
   "114.2792892", "airspeed_true": "119.6937180", "ground_velocity":  
   "119.9242658", "vertical_speed": "-42.2037399", "incidence_beta":  
   "0.1000674", "acceleration_body_x": "3.7824792",  
   "acceleration_body_y": "0.4417917", "acceleration_body_z":  
   "-0.4913789", "incidence_alpha": "0.7312113"}
```

{Flight Data History}

```
1  ...  
2  {"timestamp": "2024-09-06T08:46:35.034Z", "plane_altitude":  
   "2826.2583471", "ground_altitude": "1596.3541001",  
   "plane_pitch_degrees": "0.2295061", "plane_bank_degrees": "1.850024",  
   "plane_heading_degrees_true": "0.0143399",  
   "plane_heading_degrees_magnetic": "4.8684123", "airspeed_indicated":  
   "115.4417801", "airspeed_true": "120.9286728", "ground_velocity":  
   "121.0771166", "vertical_speed": "12.7733517", "incidence_beta":  
   "0.0190023", "acceleration_body_x": "1.0522842",  
   "acceleration_body_y": "-0.4461369", "acceleration_body_z":  
   "-0.5000830", "incidence_alpha": "0.5381842"}  
3  {"timestamp": "2024-09-06T08:46:36.168Z", "plane_altitude":  
   "2825.9202890", "ground_altitude": "1585.6049985",  
   "plane_pitch_degrees": "0.2772206", "plane_bank_degrees":  
   "2.7117283", "plane_heading_degrees_true": "0.3817939",  
   "plane_heading_degrees_magnetic": "5.2380254", "airspeed_indicated":  
   "115.1224976", "airspeed_true": "120.5920410", "ground_velocity":  
   "120.7607713", "vertical_speed": "-11.4441741", "incidence_beta":  
   "0.0377090", "acceleration_body_x": "1.5406277",  
   "acceleration_body_y": "-0.1343975", "acceleration_body_z":  
   "-0.4881969", "incidence_alpha": "0.5984350"}
```

```

4  {"timestamp": "2024-09-06T08:46:37.267Z", "plane_altitude":
   "2825.2668432", "ground_altitude": "1560.4985777",
   "plane_pitch_degrees": "0.3647206", "plane_bank_degrees":
   "3.6509816", "plane_heading_degrees_true": "0.9211164",
   "plane_heading_degrees_magnetic": "5.7796848", "airspeed_indicated":
   "114.8247299", "airspeed_true": "120.2685165", "ground_velocity":
   "120.4570669", "vertical_speed": "-28.3617729", "incidence_beta":
   "0.0519594", "acceleration_body_x": "2.0682362",
   "acceleration_body_y": "-0.0133297", "acceleration_body_z":
   "-0.5237955", "incidence_alpha": "0.6408543"}
5  {"timestamp": "2024-09-06T08:46:37.267Z", "plane_altitude":
   "2825.2668432", "ground_altitude": "1560.4985777",
   "plane_pitch_degrees": "0.3647206", "plane_bank_degrees":
   "3.6509816", "plane_heading_degrees_true": "0.9211164",
   "plane_heading_degrees_magnetic": "5.7796848", "airspeed_indicated":
   "114.8247299", "airspeed_true": "120.2685165", "ground_velocity":
   "120.4570669", "vertical_speed": "-28.3617729", "incidence_beta":
   "0.0519594", "acceleration_body_x": "2.0682362",
   "acceleration_body_y": "-0.0133297", "acceleration_body_z":
   "-0.5237955", "incidence_alpha": "0.6408543"}
6  {"timestamp": "2024-09-06T08:46:38.290Z", "plane_altitude":
   "2824.5887155", "ground_altitude": "1536.9317659",
   "plane_pitch_degrees": "0.3609554", "plane_bank_degrees":
   "4.8823411", "plane_heading_degrees_true": "1.5845759",
   "plane_heading_degrees_magnetic": "6.4465311", "airspeed_indicated":
   "114.5464401", "airspeed_true": "119.9626083", "ground_velocity":
   "120.1746931", "vertical_speed": "-37.3900151", "incidence_beta":
   "0.0708005", "acceleration_body_x": "2.7845694",
   "acceleration_body_y": "0.1987263", "acceleration_body_z":
   "-0.4836686", "incidence_alpha": "0.6799494"}

```

{Flight Task}: Steep Turn

## Analyze

### Flight Status Check

prompt:

- 1 You will be given {flight\_data} and the history of previous flight data is: {flight\_data\_history}.
- 2 The pilot is required to first execute a 45° steep turn to the right, completing a 360° turn, and then execute a 45° steep turn to the left,

completing another 360° turn.

- 3 Analyze flight data and previous trends and determine the current phase of the steep turn with the data of angle of bank, pitch and heading.
- 4 Return the current flight status as a string. Please strictly follow the category:
- 5 1. Straight-and-Level Flying: Bank angle is close to 0 degrees, heading is stable.
- 6 2. Entry: Bank angle is increasing towards 45 degrees, heading is changing rapidly.
- 7 3. Maintaining the turn: Bank angle is maintained close to 45 degrees, heading is changing steadily, altitude is maintained.
- 8 4. Recovery: Bank angle is decreasing towards 0 degrees, preparing to return to straight-and-level flight.

output:

```
1 "Based on the provided flight data and previous trends:
2
3 - Plane bank angle: 6.7081217 degrees
4 - Plane heading (true): 2.4565288 degrees
5
6 The bank angle is increasing, indicating that the aircraft is in the process
  of entering the turn. The heading is beginning to change, but it is not yet
  rapid. This suggests that the aircraft is still in the early stages of
  entering the steep turn.
7
8 Therefore, the current flight status is: **Entry**."
```

## Guidance Generation

prompt:

- 1 Retrieve the related operational and attention {Flight Expertise} related to the {Flight Status} in the steep turn.
- 2 Use the following pieces of context to GENERATE {Flight Guidance}.
- 3 If you don't know the answer, just say that you don't know, and DON'T try to make up an answer. If there are multiple answers, PROVIDE each answer and the source file for each answer.

output:

```
1  "Based on the provided flight data and the context, the related operational
   and attention guidance for the current status of **Entry** with a bank angle
   of 6.7081217 degrees is as follows:
2
3  1. **Operational Guidance:**
4      - **Rotate the control stick:** Gently and slowly move the control stick
      to the right (or left, depending on the desired turn direction) to begin the
      turn. Avoid abrupt movements as they may cause the aircraft to lose balance.
      (Source: Second context block, Right Entry 1 and Left Entry 1)
5      - **When the angle of bank reaches 10-15 degrees:** Slightly ease off the
      control stick to prevent the bank angle from increasing too quickly. (Source:
      Second context block, Right Entry 2 and Left Entry 2)
6
7  2. **Attention Guidance:**
8      - **Altitude Indicator:** Monitor the altitude indicator to ensure the
      bank angle does not increase too quickly and to maintain altitude. (Source:
      Second context block, Right Entry 2 and Left Entry 2)
9
10 These steps are part of the initial phase of entering a turn, where the bank
    angle is still increasing and the aircraft is transitioning from straight and
    level flight into a turn."
```

## Output Formatting

prompt:

```
1  Your analysis is based on the {Flight Guidance}.
2  Recommend joystick movements and the instruments to monitor to optimize
   flight performance according to the current {Flight Status} and maneuver.
   Determine what pressure joystick should be applied to make pitch and roll
   adjustments.
3  Strictly output the instruction in the following format:
4  "Guidance Type = Procedure Guidance/Correctiv Guidance
5  pitch = forward/back/no
6  roll = left/right/no
7  instrument = the most important instrument to monitor at the moment"
```

output:

```
1  "Guidance Type=Procedure Guidance
2  pitch=no
```

```
3  roll=right
4  instrument=altitude indicator"
```