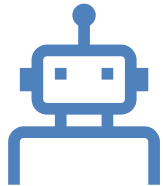# Building Human-in-the-Loop Workflows with LangGraph

Why Human-in-the-Loop Matters

- Full automation isn't always enough.

- Critical tasks need human validation.

- Human-in-the-Loop = AI speed + Human judgment.

What is Human-in-the-Loop?

- AI pauses for human input at key stages.

- Human reviews, edits, or approves outputs.

- Essential for compliance, content quality, decision-making.

Human-in-the-Loop in LangGraph

- Powered by the interrupt() function.

- Graph execution pauses at key nodes.

- Resumes with human-provided feedback.

Core Use Cases

- - Reviewing tool calls.

- - Validating LLM outputs.

- - Providing additional context.

- - Supporting multi-turn conversations.

How Interrupt Works

- - Step 1: Pause graph at interrupt.
- - Step 2: Present output to human.
- - Step 3: Human edits, approves, or rejects.
- - Step 4: Resume graph execution.

Code Example - Simple Human Approval

```python
from langgraph.types import interrupt, Command

def human_approval(state: State) -> Command:
    is_approved = interrupt({
        'question': 'Is this correct?',
        'output': state['llm_output']
    })
    if is_approved:
        return Command(goto='next_node')
    else:
        return Command(goto='alternative_node')
```
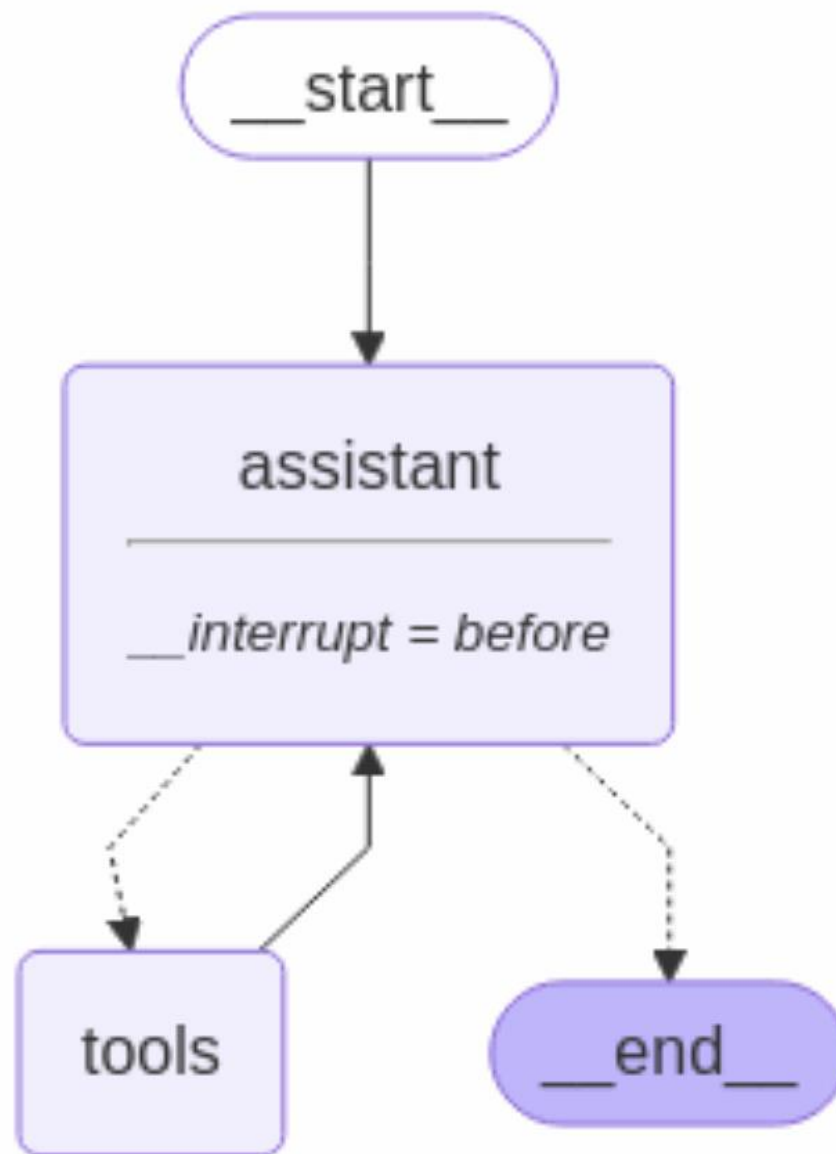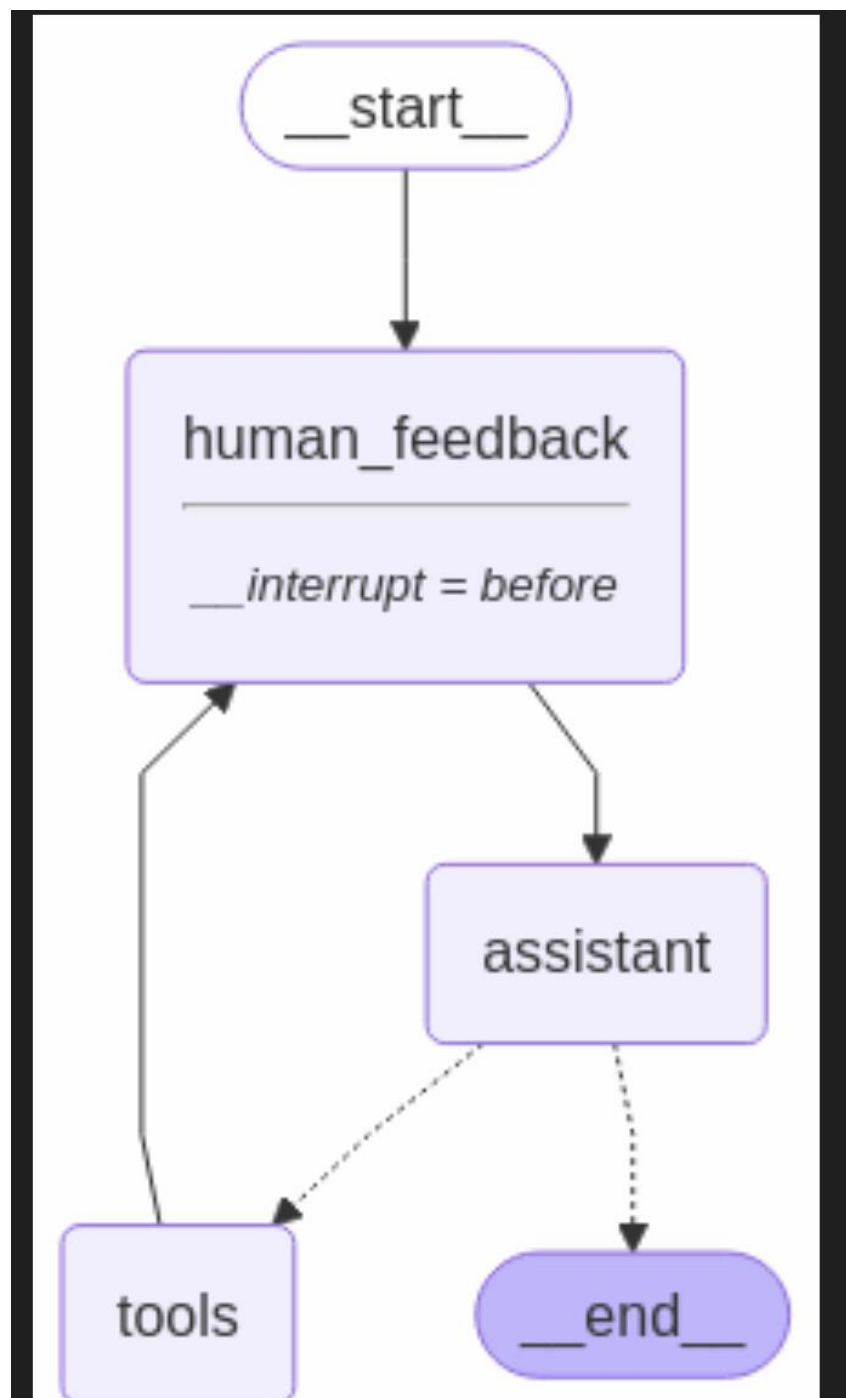
Best Practices for Using Interrupt

- - Place interrupts early in a node.
- - Always checkpoint graph state.
- - Validate human inputs carefully.
- - Keep node structure stable across executions.

Common Pitfalls

- - Avoid API calls before interrupts.

- - Handle multiple interrupts carefully.

- - Plan fallback paths for missing human inputs.

Real-World Scenarios

- - AI content reviewed by human editors.

- - Legal compliance validation.

- - Customer service escalations.

- - Financial transaction approvals.

Why This Matters for AI Builders

- - Build safer, more reliable AI systems.

- - Increase trust and adoption.

- - Enable more complex AI workflows.

Conclusion

- - Human-in-the-Loop bridges automation with trust.

- - LangGraph makes integration easy.

- - Start building responsible AI today!

Q&A

- Questions? Let's Discuss!