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Flow and States management in CrewAI

Instructor

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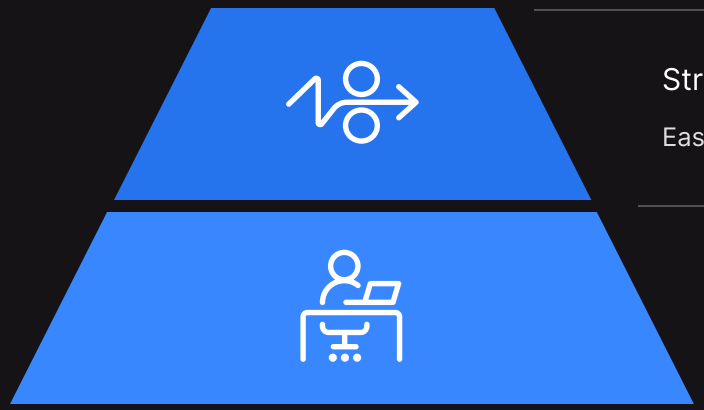
Flows

Streamlined Workflow Creation

Easily link Crews and tasks to build intricate AI workflows.

Flows



Streamlined Workflow Creation

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State Management

Smoothly handle and share state across tasks within workflows.

Flows

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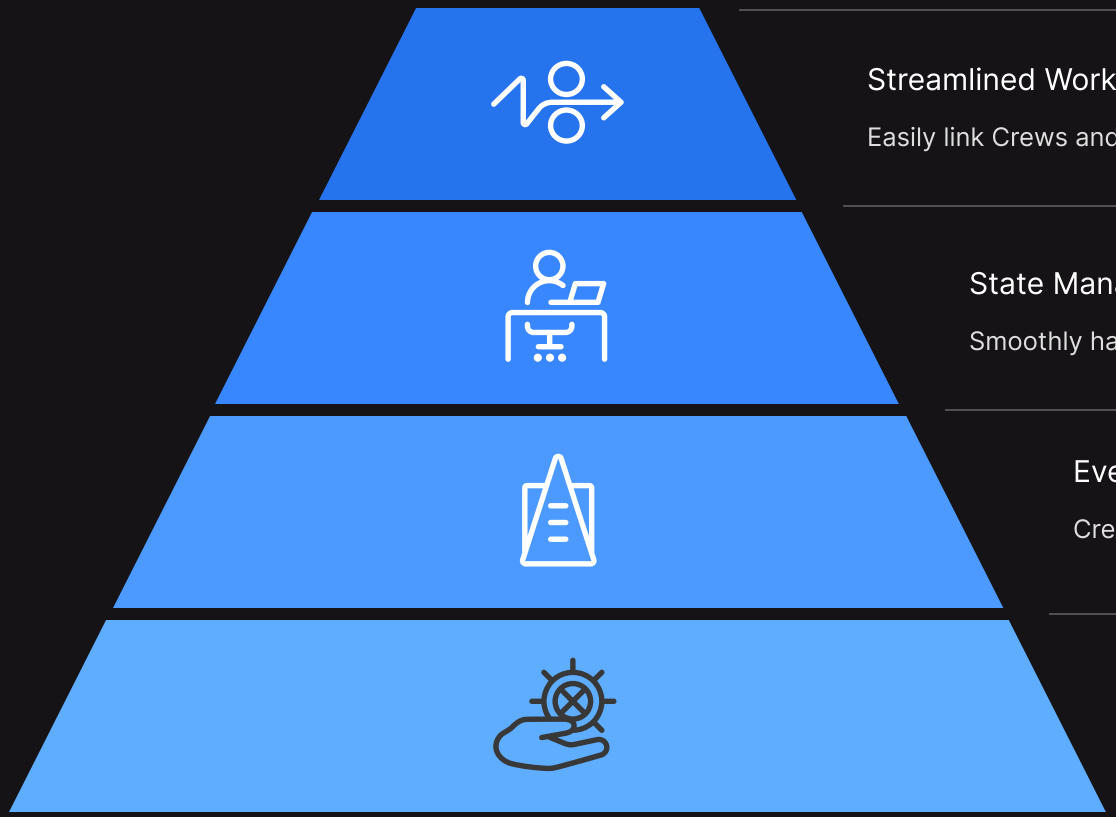
Event-Driven Architecture

Create dynamic, responsive workflows with event-based actions.

Flows



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Flexible Control Flow

Supports conditional logic, loops, and branching for customized processes.

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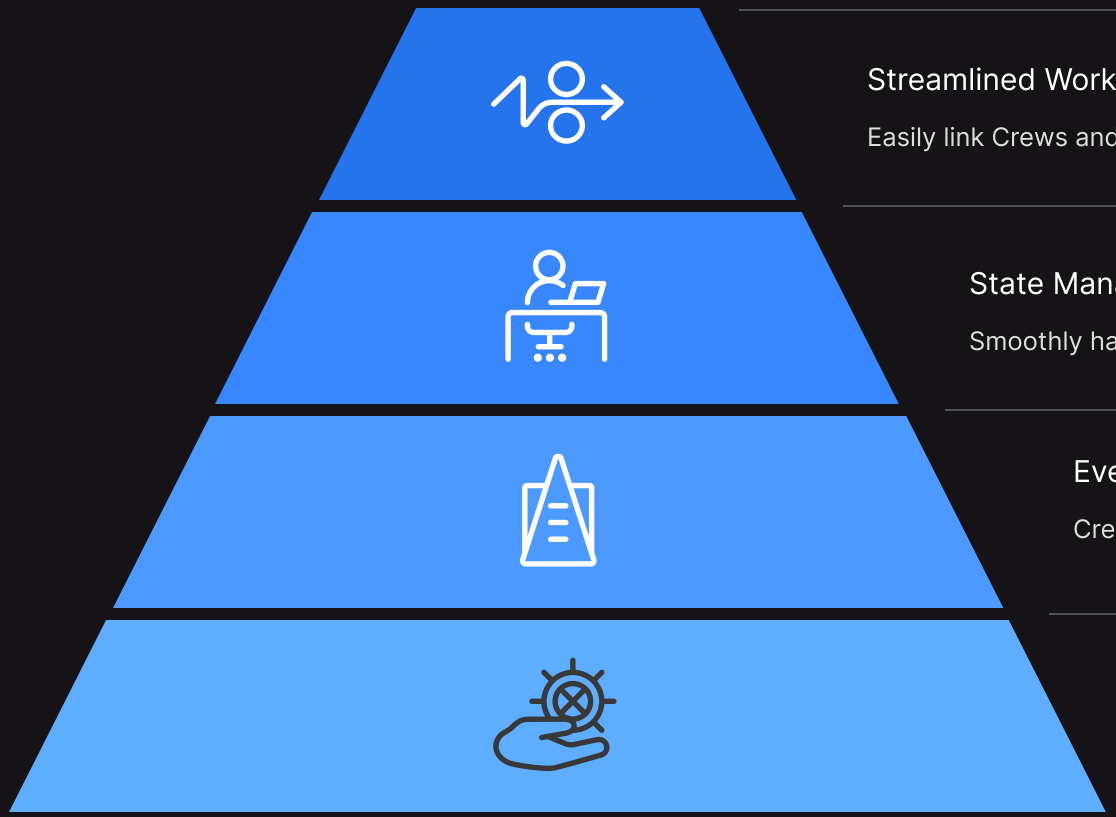

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Flexible Control Flow

Supports conditional logic, loops, and branching for customized processes.

Implement Flows

@start()

- Marks a method as the starting point of a Flow.
- Flexibility
- Parallel Execution

```python
from crewai.flow.flow import Flow, listen, start

class ActorFlow(Flow):

    @start()
    def generate_actor(self):
        # Return a random actor name
        random_actor = "Generate a random actor"
        return random_actor

    @listen(generate_actor)
    def generate_famous_movie(self, actor):
        # Find a famous movie with the given actor
        famous_movie = f"Find a famous movie starring {actor}"
        return famous_movie

# Initialize the flow and start the process
flow = ActorFlow()
print(flow.kickoff())
```

Implement Flows

@listen()

- Marks a method to listen for another task's output in the Flow
- Runs when a specified task emits an output
- Process output as an argument

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# Initialize the flow and start the process
flow = ActorFlow()
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```

Flow

or_ Function

Triggers listener when any specified method emits output.

```python
from crewai.flow.flow import Flow, listen, or_, start

class OrExampleFlow(Flow):

    @start()
    def start_method(self):
        return "Hello from the start method"

    @listen(start_method)
    def second_method(self):
        return "Hello from the second method"

    @listen(or_(start_method, second_method))
    def logger(self, result):
        print(f"Logger: {result}")

flow = OrExampleFlow()
flow.kickoff()
```

Flow

or_ Function

Triggers listener when any specified method emits output.

and_ Function

Triggers listener only when all specified methods emit output.

```python
from crewai.flow.flow import Flow, listen, or_, start

class OrExampleFlow(Flow):

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Flow

or_ Function

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and_ Function

Triggers listener only when all specified methods emit output.

@router() Decoder

Enables conditional routing based on method output.

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```

Flow State Management

- **Structured State Management**

  Ensures data consistency and type safety

```python
from crewai.flow.flow import Flow, listen, start

class UnstructuredExampleFlow(Flow):

    @start()
    def first_method(self):
        self.state.message = "Hello from structured flow"
        self.state.counter = 0

    @listen(first_method)
    def second_method(self):
        self.state.counter += 1
        self.state.message += " - updated"

    @listen(second_method)
    def third_method(self):
        self.state.counter += 1
        self.state.message += " - updated again"

        print(f"State after third_method: {self.state}")

flow = UnstructuredExampleFlow()
flow.kickoff()
```

Flow State Management

- **Structured State Management**

  Ensures data consistency and type safety

- **Schema Models**

  Leverages Pydantic's BaseModel

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```

Flow State Management

- **Structured State Management**

  Ensures data consistency and type safety

- **Schema Models**

  Leverages Pydantic's BaseModel

- **Developer Support**

  Enables validation and auto-completion

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Thank You