Analytics Vidhya

# Introduction to Router Agents

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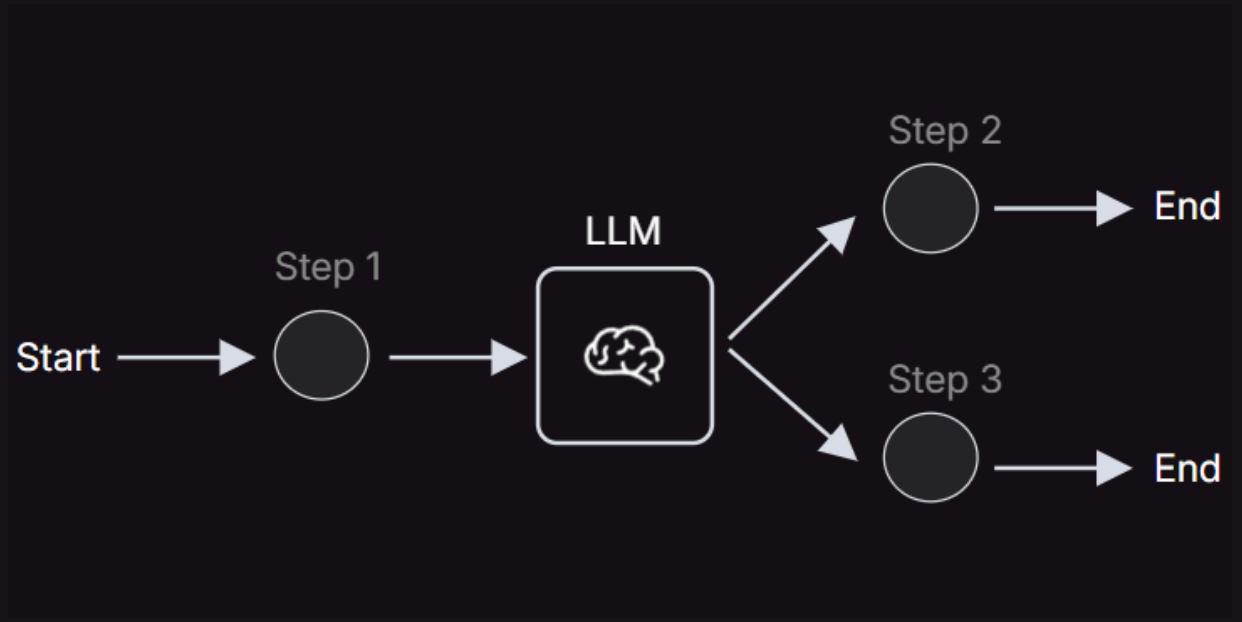
# What are Router Agents?

## Definition

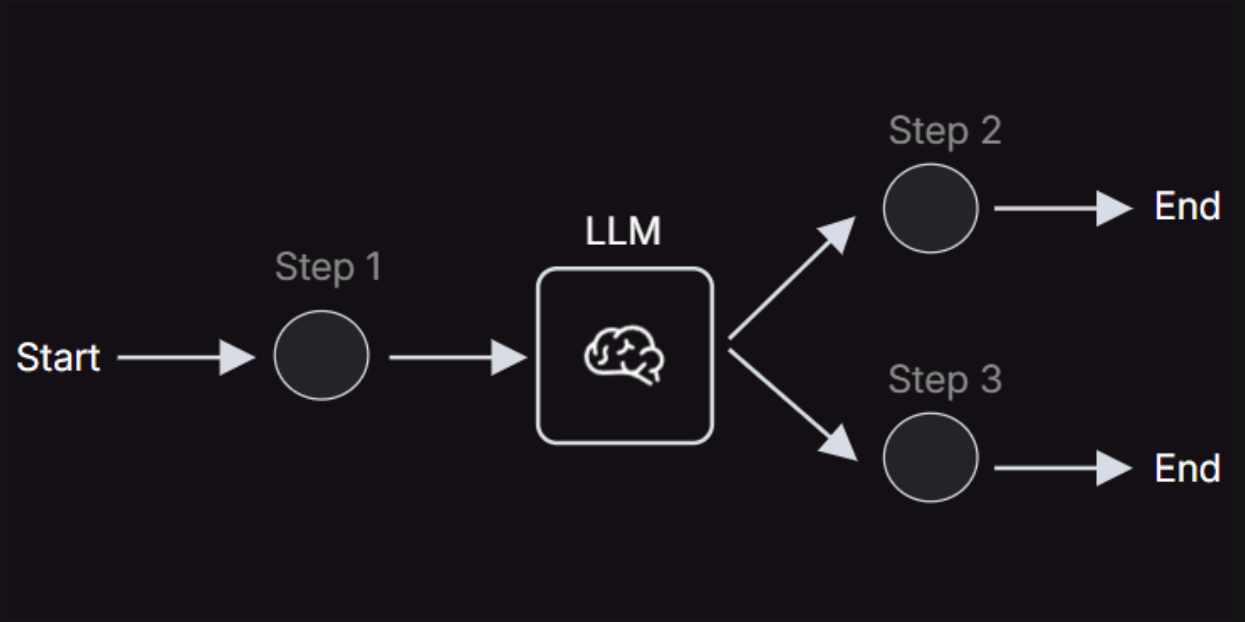
Router agents in LangGraph are specialized components that direct the flow of tasks within an agentic system, ensuring each task is handled by the most appropriate node (which could be an agent subgraph in the case of multi-agent systems)



# What are Router Agents?

## Functionality

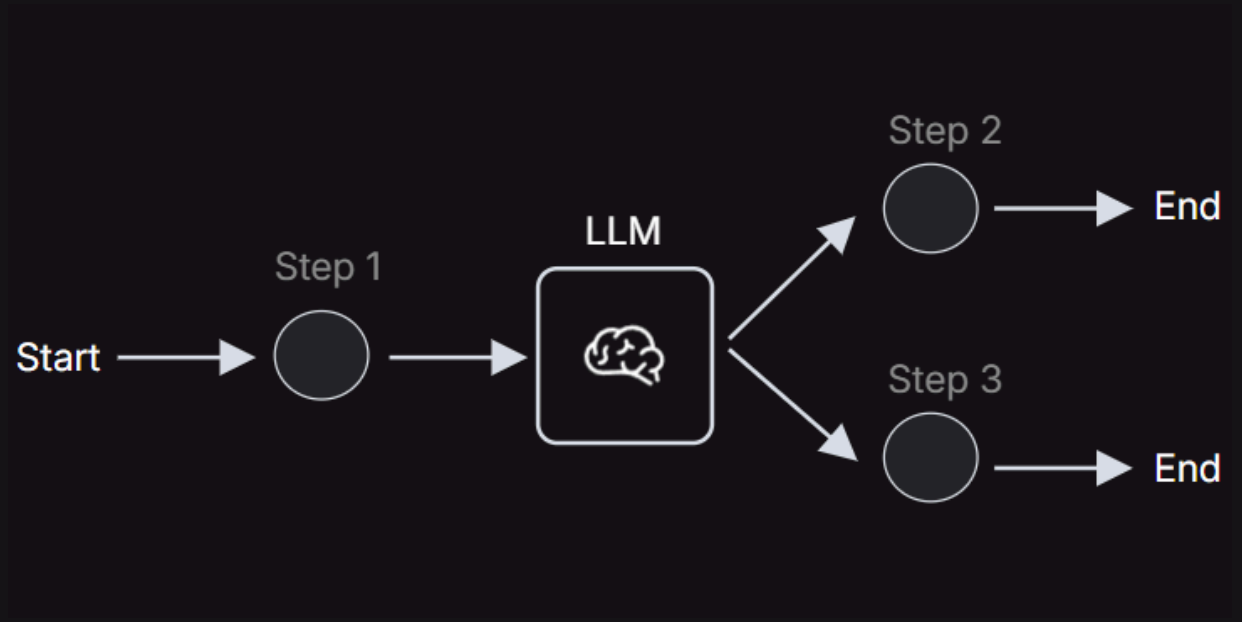
They evaluate incoming user inputs or data and determine the optimal path (nodes) or agent (subgraph) for processing, enhancing efficiency and accuracy.



# What are Router Agents?

## Structured Decision-Making

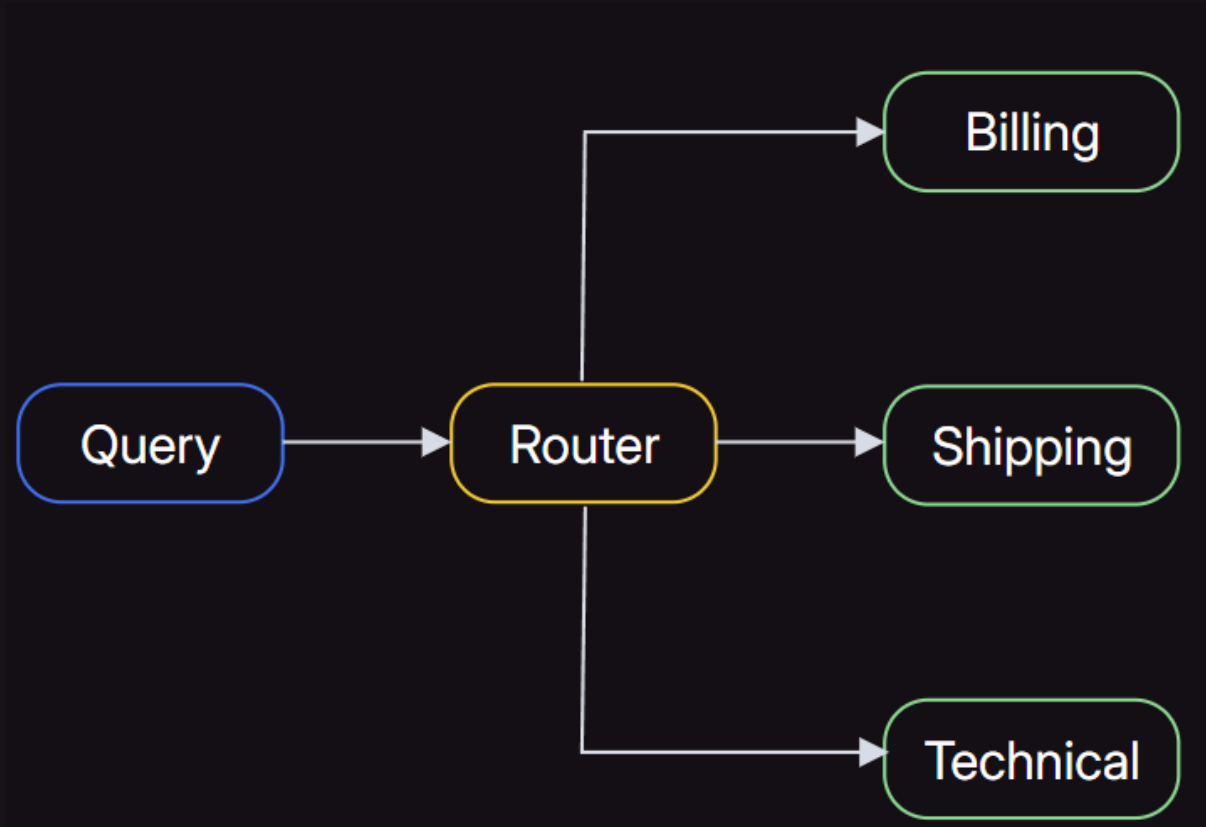
Utilize structured outputs from LLM calls to make informed routing decisions, often employing prompt engineering and structured output parsers along with conditional routing to guide the route selection process.



# Example of a Router Agent - Customer Support Assistant

## Role of the Router

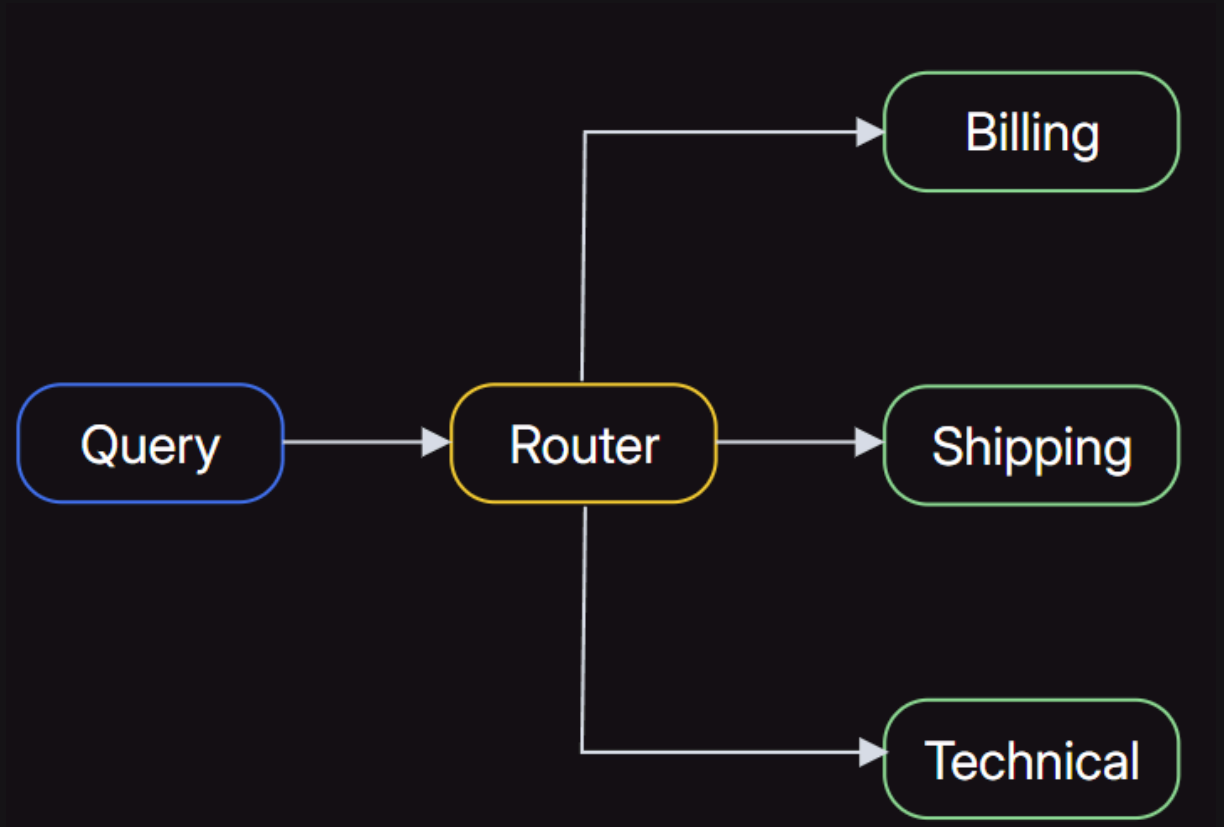
Acts as the central decision-maker, analyzing incoming queries and directing them to the appropriate nodes like Billing, Shipping, or Technical support.



# Example of a Router Agent - Customer Support Assistant

## Dynamic Query Handling

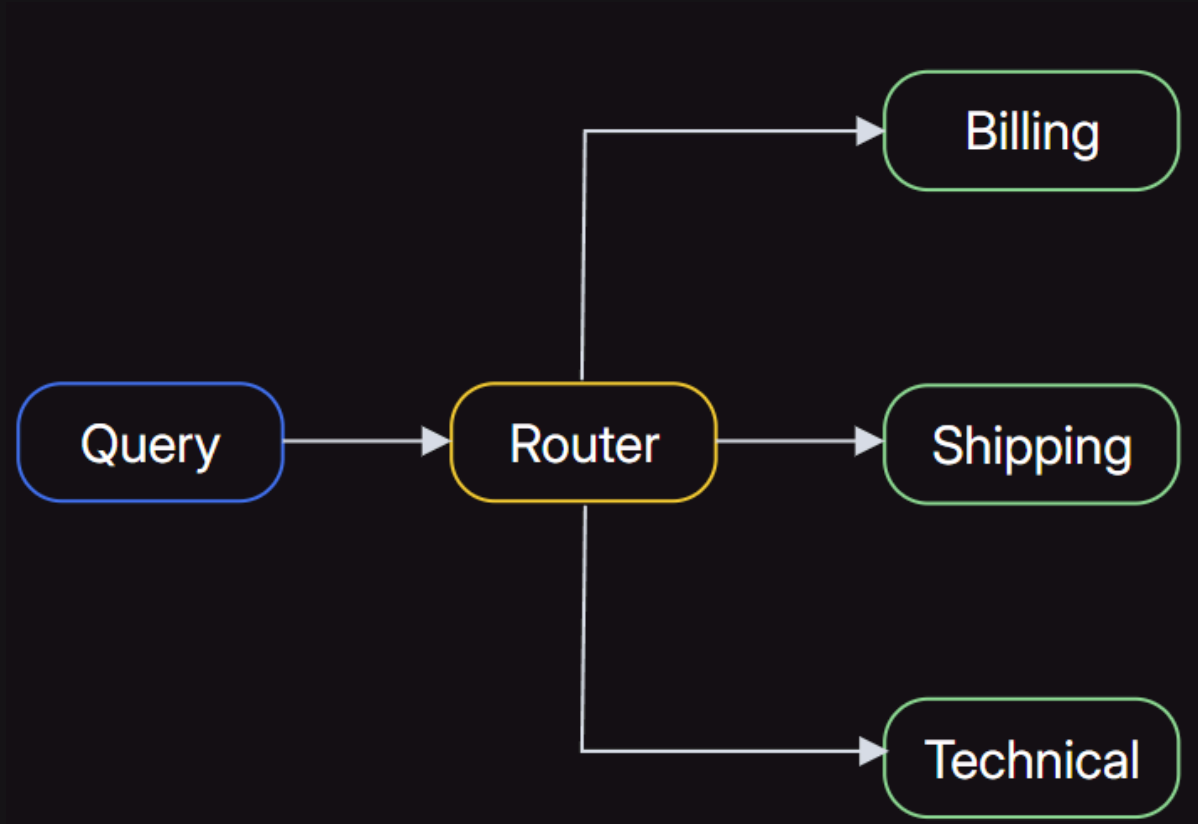
Uses context-aware logic to classify user inputs and match them to the best-suited agent or workflow.



# Example of a Router Agent - Customer Support Assistant

## Seamless Scalability

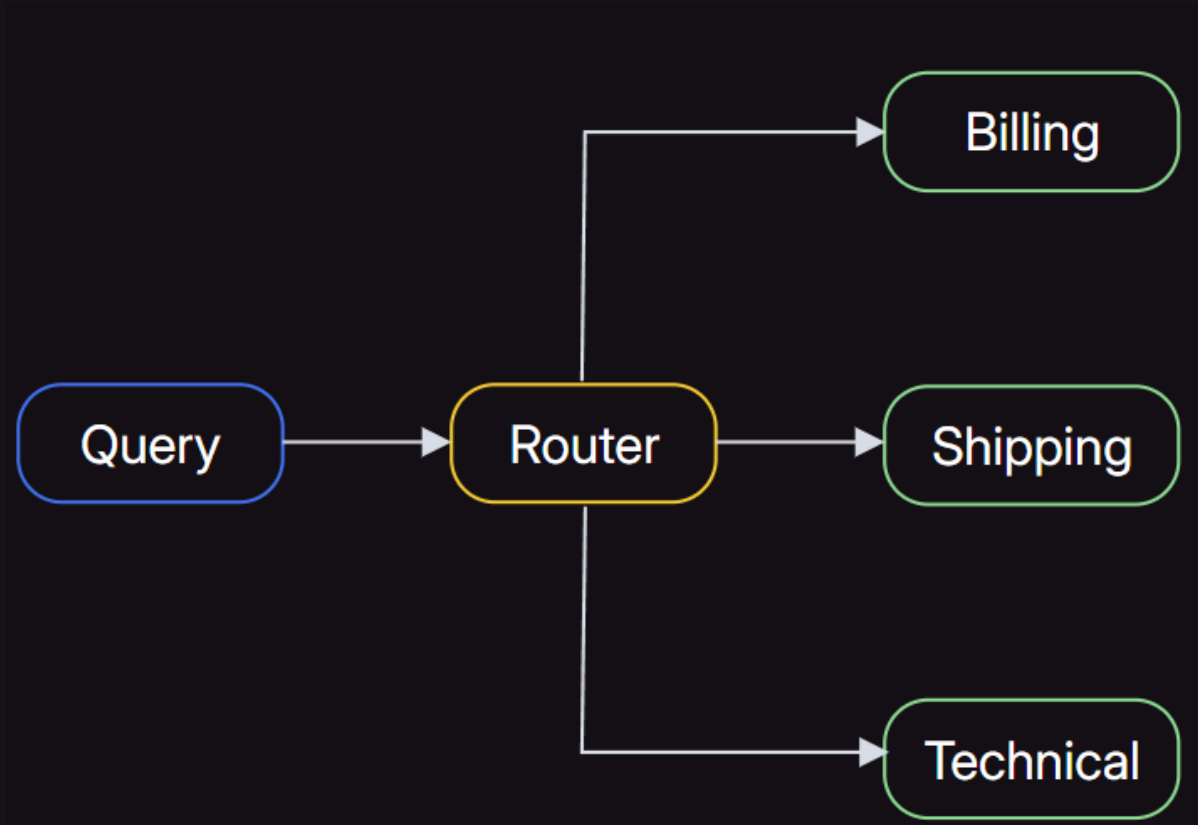
Easily extendable to include more specialized nodes or agents as system complexity grows.



# Example of a Router Agent - Customer Support Assistant

## How it works?

Parses outputs from LLMs into a structured format to decide the route and then uses conditional routing to pass the flow to a specific set of nodes (or agent)



# Thanks