

# AGENTS:-FUNCTIONS

## Functions as Tools for Agents

Functions are reusable blocks of code that perform specific tasks defined with inputs (arguments) and outputs (results).

Tools are functions packaged with metadata (like description, parameters, and return types) to be used by Agents in AI workflows.

## Steps to Convert Functions to Tools :-

1. Define the Function
2. Add metadata : use libraries like langchain to wrap the function that includes Input type, output type and description for the function's purpose.
3. Tool Conversion

## Agents and use of Tools :-

- Agents are autonomous systems that use tools (functions) to solve tasks based on user prompts.
- Agents use tools by : Parse the user's input → Decide which tool <sup>to use</sup> → Execute the tool → Interpret and return the result.

## Architecture

1. Tool Execution : Tools act as APIs for specific tasks.
2. Agent Orchestration : Agents coordinate tool usage to achieve objectives.

## Benefits of using tools in Agents

1. Scalability : Easily add new tools for specialized tasks.



2. Modularity: Functions are standalone and reusable
3. Automation: Agents can perform complex workflows by chaining tools
4. Flexibility: Tools are independent of Agents; they can serve multiple Agents

Example workflow:

1. Define tools for specific tasks.
2. Configure an Agent to use these tools.
3. use natural language prompts to trigger the appropriate tool.

Hence functions transformed into tools expand the capabilities of AI systems, enabling efficient problem-solving by Agents through modularity, reusability and flexibility.

In AutoGen, tools are the actionable extensions of reasoning. They allow agents to break free from the limits of language and interact with the world programmatically, turning text-based intelligence into functional, goal-oriented behavior.