Glossary of Key Terms in n8n in AI Automation

Canvas

The visual workspace in the n8n editor where users build workflows by adding and connecting nodes. It serves as the central interface for workflow automation.

Template

A pre-built workflow available in the n8n marketplace or documentation, designed to help users quickly set up common automations without starting from scratch.

Workflow

A collection of nodes that work together to automate a process. Workflows start when a **trigger node** is activated and execute sequential tasks to complete automation.

Node

An individual component within a workflow that performs a specific function, such as retrieving data, sending messages, or integrating with external services.

Trigger Node

A special type of node that initiates workflow execution based on specific conditions, such as receiving a webhook request, a scheduled time, or an external API call.

Expression

A dynamic way to populate node parameters using JavaScript-based logic. Expressions allow workflows to use real-time data instead of static values.

Static vs. Dynamic Data

Static data remains unchanged once set, while dynamic data is updated during workflow execution, often using variables or API responses.

Queue

A system that manages workflow execution by processing tasks sequentially, preventing overload and optimizing performance.

Execution

The process of running a workflow. Each execution follows the workflow structure, passing data between nodes until completion.

Parallel Execution

A method that allows workflows to execute multiple tasks simultaneously, increasing efficiency and reducing processing time.

Execution Logs

A record of past workflow runs, showing input/output data, errors, and performance metrics for debugging and optimization.

Variable

A dynamic value used within workflows to store, retrieve, and manipulate data. Variables allow workflows to be more flexible and reusable.

Credential

Stored authentication details (such as API keys, OAuth tokens, or passwords) that allow n8n to connect with third-party services securely.

OAuth Authentication

A secure authentication method used in n8n to connect workflows with third-party services like Google, Facebook, or Slack.

Conditional Logic

A method used in workflows to execute different actions based on specific conditions. This is done using **IF nodes** or **Switch nodes**.

Loop

A technique used to repeat actions in a workflow. The **Loop Over Items** node allows workflows to process multiple data entries iteratively.

Webhook

A trigger mechanism that starts workflows when external services send HTTP requests to an n8n URL.

Webhook Response

A node that sends custom responses back to external systems after a webhook workflow execution

Data Mapping

The process of connecting inputs and outputs between nodes to ensure data flows correctly through a workflow.

Metadata

Additional data about workflow execution, such as timestamps, user actions, or system-generated information.

Workflow Chaining

Linking multiple workflows together, where one workflow's output serves as the input for another workflow.

Database Integration

The ability to connect workflows with databases such as MySQL, PostgreSQL, or MongoDB to read, write, or update data dynamically.

Data Transformation

The process of modifying or reformatting data in workflows using nodes like **Set**, **Edit Fields**, and **Function nodes**.

Error Handling

A strategy to manage failed executions by using nodes like **Error Trigger** or configuring retry mechanisms.

Project

A feature that allows users to organize workflows, variables, and credentials into separate environments for better management and collaboration.

Data Pinning

A feature that allows you to temporarily lock output data from a node during workflow development, ensuring consistent results while testing.

Evaluation

A feature used to compare past workflow executions, helping users track performance and optimize their automation.

Function Node

A node that allows users to write custom JavaScript code to manipulate data beyond standard nodes.

Split & Merge

A workflow design pattern where data is processed separately and later combined for final execution.

Cron Job (Schedule node)

A scheduling feature that allows workflows to run at specific time intervals (e.g., every hour, daily, weekly).

Cluster Node

A group of interconnected nodes that work together within a workflow. These include a **root node** (defining the main function) and **sub-nodes** (extending functionality).

Root Node

The primary node in a cluster that defines the core function of a workflow component.

Sub Node

A supporting node in a cluster that enhances the capabilities of the **root node** by handling specialized tasks.

Custom Node

A user-defined node created for specific automation needs, often requiring JavaScript or TypeScript coding.

API (Application Programming Interface)

A method for connecting different software applications, allowing them to exchange data and perform functions without requiring manual input.

Real-Time Workflow Execution

The ability to process and execute workflows instantly as data is received, often triggered by webhooks or streaming data sources.

Workflow Optimization

The process of improving workflow efficiency by reducing unnecessary steps, limiting API calls, and parallelizing tasks.

Retry Logic

A feature in workflows that automatically attempts to rerun failed executions after a set delay, improving reliability.

Timeout

A setting that defines how long a node or workflow should wait before stopping execution if there is no response.

Access Control

A feature that manages user roles and permissions, restricting who can edit, execute, or view workflows within an organization.

Large Language Model (LLM)

A type of advanced AI model trained on massive datasets to perform natural language processing (NLP) tasks, such as text generation, question-answering,

and data analysis.

AI Agent

An AI-powered system that can understand requests, make decisions, and execute tasks. AI agents use large language models (LLMs) to process input, interact with external tools, and automate workflows.

AI Memory

A feature that allows AI to remember context from past interactions, enabling continuous and contextual conversations over multiple interactions. AI agents in n8n can use memory, whereas AI chains cannot.

AI Chain

A sequence of AI model interactions used to process tasks step by step. AI chains in n8n do not retain memory, meaning they cannot recall past interactions.

AI Tool

An external function or resource that an AI model can call upon to enhance its capabilities, such as retrieving information from databases, interacting with APIs, or performing calculations.

AI Embedding

A method of converting text or data into numerical representations (vectors) that AI models use to recognize patterns, relationships, and similarities.

AI Vector Store

A specialized database designed to store embeddings, enabling AI models to search, retrieve, and analyze relevant information efficiently.

Persistent AI Memory

Allowing AI agents to retain knowledge and context across multiple workflow executions, improving accuracy over time.

Autonomous AI Agents

AI systems capable of making independent decisions and performing complex tasks without human intervention.

Prompt Engineering

The practice of crafting effective AI prompts to generate more accurate and useful responses from language models.

Retrieval-Augmented Generation (RAG)

A technique where AI retrieves relevant external information before generating a response to improve accuracy.

Fine-Tuning AI Models

Customizing a pre-trained AI model with domain-specific data to improve its performance for specialized tasks.

Multi-Modal AI

An AI system that can process and understand multiple types of input, such as text, images, and audio.

LangChain

A framework for developing AI applications that work with large language models (LLMs). LangChain enables AI models to interact with external tools, memory, and structured workflows.