# n8n Masterclass

## From Beginner to AI Agent Builder

# What is n8n?

**n8n is a *low-code* automation tool**

- It allows you to build tools as workflows (super powerful!!)

**Automating workflows**

- Increased Efficiency
- Time & Cost Savings
- Scalability
- Improved Data Handling
- Enhanced Customer Experience

# Why Should You Learn n8n?

- **Empowering Non-Developers with AI Automation**
  - You don’t need to know how to code
- **Access to 300+ Built-In Integrations**
  - Google apps, Microsoft apps, Slack, X, etc.
  - String them together… infinite possibilities
- **Connect to Almost Any Tool**
  - Extend Using APIs, Webhooks, and Custom Code

# Part 1: Getting Started

1. Set Up n8n
2. The Interface

# Set Up n8n

**Self-Hosted**

- Control & Flexibility
- Data Ownership
- Cost
- Installation & Maintenance
- Customization

**Cloud**

- Ease of Use
- Availability & Reliability
- Security
- Cost
- Data Handling

# How to Choose

**Self Hosted if…**

- ➢ You need full control over your data and infrastructure
- ➢ You want to fully integrate n8n deeply within other on-premise systems
- ➢ You are comfortable handling server management

**Cloud if…**

- ➢ You prefer simplicity
- ➢ Quick setup and reliable hosting
- ➢ You’re okay with paying a subscription for a managed service
- ➢ You don’t mind data being handled by a third-party provider

# n8n Interface

- **Workflows, Nodes, and Executions**

  Workflow - The recipe

  Nodes - Each step, each ingredient

  Execution - When an order comes in

# n8n Interface

- Walkthrough of the Editor Interface
- Accessing Community & Templates

# Part 2: Core Concepts

1. Types of Nodes
2. Building Your First Workflow (Example)

# Types of Nodes

- Trigger Nodes
- Action Nodes
- Data Transformation
- Logic Nodes

# Trigger Nodes

## What They Do

- These tell n8n when/how to start the workflow

## Types

- Manual, Scheduled, On Chat, On Event, ***Called by Another Workflow***, etc.

# Action Nodes

## What They Do

- The “doers”, they perform specific tasks

## Types

- Send Email, Create Record, Make API Request, Get Text Messages, Set Calendar Event, etc.

# Data Transformation Nodes

## What They Do

- Change or process the data flowing through

## Types

- Set: Add fields, change values, reduce data
- Aggregate: Combines data into a single output
- Merge: Combining data from two sources

# Logic Nodes

## What They Do

- Conditional decision makers

## Types

- If: True or False
- Switch: Routes data based on condition
- Wait: Pauses until a condition is met

# Building Your First Workflow

**Example Workflow:**

Automatically Process and Summarize Customer Orders

# Part 3:
# RAG and Vector Databases

1. What is RAG?
2. What are Vector Databases?
3. Building a simple RAG AI Agent

# Retrieval-Augmented Generation (RAG)

*Powerful technique that combines two approaches. Helps AI models provide more accurate and relevant answers.*

## Retrieval

- Retrieves relevant information from external sources

## Generation

- AI uses this information to generate an answer

# Why RAG Matters

## No Guessing

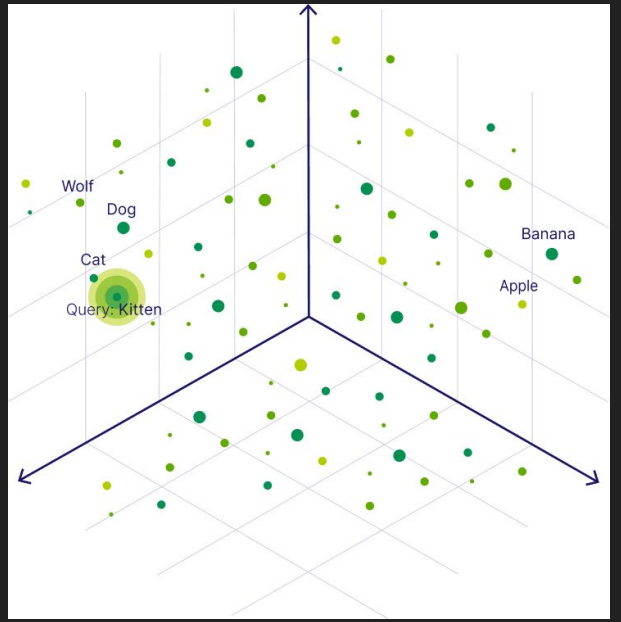
- AI Assistant
  - It’s not gonna make up an answer based on training data
  - More reliable and up-to-date information

# What are Vector Databases?

*RAG needs a way to store and retrieve data efficiently.*

## Vectors

- Data stored in “vectors”
- Numerical database that represents the meaning of words, text, etc.
- Relevant information quickly



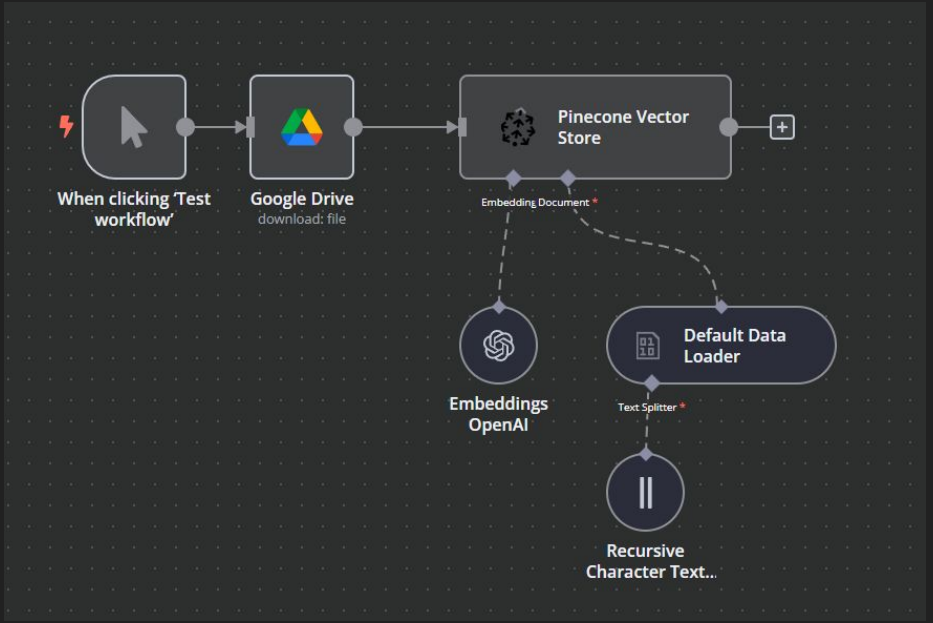
# Embedding Data to Vector Database

## Data Loading

- Handles data coming in to pass it off to a text splitter

## Text Splitting

- “Chunks” up the text for more efficient retrieval
- *Character, Recursive Character, Token*



# Building an RAG AI Agent

**Example Workflow:**

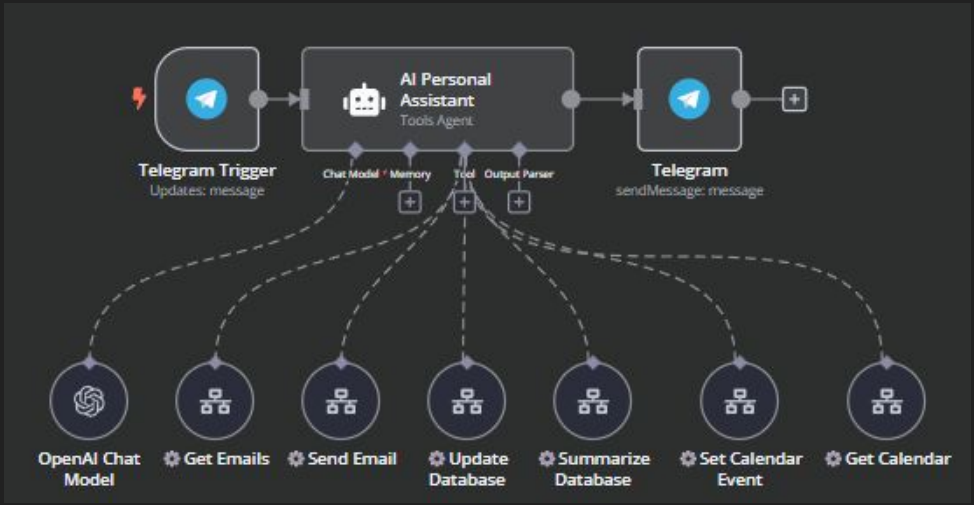
Chatting with an Agent for information about Nike earnings

# Part 4: Expanding Agents

1. Building Workflows as Tools
2. Showcasing Examples

# The Power of Custom Tools

1. AI Agents Can Use Them
2. Tools Can Be Reused and Combined
3. Scaling



# Part 5:
## APIs & HTTP Requests

1. APIs, Endpoints, Calls
2. HTTP Request
3. n8n Examples

# APIs

*Application Programming Interface*

- Think of it as the bridge that allows two different software programs to exchange information

API Endpoint The specific address (URL) for our request

API Call The request you make to an API

HTTP Request The method used to send the API call over the internet

# What is an HTTP Request?

*Talking to other websites or services*

## GET

- Get data, asking for information

## POST

- Send data, sending information

# How Do API Calls & HTTP Requests Work Together?

HTTP Request is ***how*** you make an API Call.

API The service you're talking to 


API Endpoint The Kitchen station 

API Call The request 

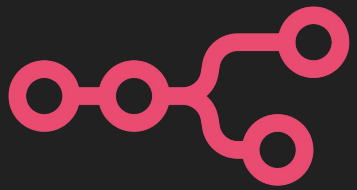
HTTP Request The mechanism used to deliver the request 

# Part 6:
## The Final Part

1. Error Workflows
2. Best Practices
3. Next Steps

# Best Practices

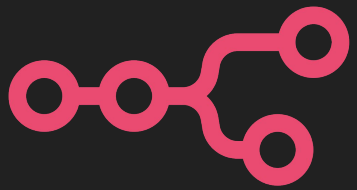
- Keep Your Workflows Organized
- Use Sub-Workflows for Reusability
- Implement Error Handling
- Optimize for Scalability



n8n

# Next Steps

- START BUILDING
- Explore Advanced Templates
- Experiment with New Integrations
- Build and Share Workflows



n8n

# n8n Masterclass

Congratulations!