n8n Fundamentals for Real Estate

Dr. Cayman Seagraves, Caiyman AI

June 14th, 2025 - n8n AI Agent Workshop

Outline

What is n8n?

n8n = "node to node"

- Visual workflow automation platform
- No-code/low-code approach
- Open-source with cloud option
- Built for AI agent development

Why n8n for Real Estate?

- Connect to any service
- Build complex logic visually
- Deploy AI agents quickly

Visual Programming Advantages

- **See Your Logic:** Workflows are visual flowcharts
- **Debug Easily:** Watch data flow through nodes
- **Collaborate Better:** Non-technical team members can understand
- **Iterate Quickly:** Change logic without coding

Real Estate Benefit

Build and modify automations as your business needs change—no developer required

Nodes: The Building Blocks

What are Nodes?

- Individual workflow steps
- Each performs specific action
- Connect to form workflows

Node Categories:

- **Trigger:** Start workflows
- **Regular:** Process data
- **AI:** LLM interactions

Real Estate Examples

- Webhook: New lead arrives
- HTTP Request: Check MLS
- AI Agent: Analyze property
- Email: Send to client

Connections and Data Flow

Connection Types:

- Main: Primary data flow
- AI: Model connections
- Memory: Context storage
- Tools: Agent capabilities

Data Structure:

- JSON format
- Items = individual records
- Access with expressions

Variables and Data Types

Working with Data in n8n:
Common Data Types:

- String: "123 Main St"
- Number: 450000
- Boolean: true/false
- Object: {property: data}
- Array: [item1, item2]

Expressions:

- `{{ $json.price }}`
- `{{ $now }}`
- `{{ $('NodeName').item.json }}`

Pro Tip

Use expressions to dynamically reference data from any previous node

Trigger Nodes

- **Webhook:** Receive data from websites, CRMs
- **Schedule:** Run at specific times (daily reports)
- **Email Trigger:** Process incoming emails
- **Google Sheets:** Monitor new rows

Example Use Case

Webhook receives new lead from website form $\rightarrow$ triggers qualification workflow

Best Practice

Always test triggers with sample data before going live

AI and LLM Nodes

Key AI Nodes:

- **AI Agent:** Autonomous task execution
- **Chat Model:** LLM interactions
- **Vector Store:** Document memory
- **Tool nodes:** Give agents capabilities

Configuration:

- Connect to OpenRouter
- Set system prompts
- Define tools/functions

Key Benefit

Complete AI agent infrastructure with minimal setup

Data Processing Nodes

- **Set:** Structure and clean data
- **IF:** Conditional logic branching
- **Switch:** Multiple path routing
- **Function:** Custom JavaScript logic
- **Merge:** Combine data streams

Real Estate Example

IF node checks lead budget: High-value → senior agent, Standard → team pool

Integration Nodes

Communication:

- Gmail/Email
- Slack
- SMS (Twilio)
- Calendar

Data Storage:

- Google Sheets
- Databases
- CRM systems

External Services:

- HTTP Request (APIs)
- Webhook
- FTP/SFTP
- Cloud storage

Tip

Use HTTP Request for any service without a dedicated node

Workflow Planning

Before You Build:

1. Define the goal clearly
2. Map out the steps
3. Identify data sources
4. Plan decision points
5. Consider error handling

Example: Lead Response Workflow

Goal: Respond to new leads within 5 minutes with personalized information

Testing and Debugging

- **Manual Execution:** Test step by step
- **Sample Data:** Use realistic test cases
- **Error Handling:** Add try/catch logic
- **Logging:** Track execution flow

Debug Tools:

- Node output inspection
- Execution logs
- Data pinning

Common Issues:

- Missing credentials
- Data format errors
- API rate limits

Sub-workflows and Modularity

- **Sub-workflows:** Reusable workflow components
- **Benefits:**
  - Organize complex logic
  - Reuse common patterns
  - Easier maintenance
  - Team collaboration

Real Estate Example

Create a "Property Analysis" sub-workflow used by multiple main workflows

Error Handling and Reliability

Building Robust Workflows:
Error Handling:

- Error Trigger node
- Try/Catch patterns
- Fallback paths
- Notification alerts

Best Practices:

- Always plan for failures
- Log errors for review
- Implement retries
- Monitor execution

Memory and Context Management

- **Short-term Memory:** Within workflow execution
- **Long-term Memory:** Across executions
- **Vector Stores:** Semantic document memory

Implementation

- Redis for fast access
- Pinecone for documents
- Database for structured

Use Cases

- Client preferences
- Conversation history
- Market knowledge

Workflow Design Principles

1. **Keep It Simple:** Start small, iterate
2. **Document Everything:** Use notes and descriptions
3. **Test Thoroughly:** Edge cases matter
4. **Monitor Performance:** Track execution times
5. **Version Control:** Export and backup workflows

Golden Rule

A workflow that works 99% of the time will fail eventually—plan for it

Security Considerations

Protect Your Data:

- Use n8n credentials system
- Never hardcode API keys
- Implement access controls
- Encrypt sensitive data
- Regular security audits

Compliance:

- Real estate regulations
- Data privacy laws
- Fair housing rules

Remember

You're handling client PII and financial data—security is non-negotiable

Key Takeaways

- **n8n makes AI accessible:** No coding required
- **Visual development:** See and understand your logic
- **Powerful integrations:** Connect everything
- **Start simple:** Build confidence with basic workflows
- **Think modular:** Reuse successful patterns

Your Next Steps

1. Complete setup checklist
2. Build your first workflow
3. Test with real data
4. Deploy and monitor
5. Iterate and improve