**🛠️ Beginner Build Guide: Credit Card Statement Automation with n8n + AI**

**📌 Project Objective**

Build a fully automated system that:

* Reads credit card statements (PDFs)
* Extracts transactions, fees, and rewards using AI
* Pushes results into Google Sheets & Google Docs
* Provides credit card usage optimization using AI insights

**🔧 Tools You’ll Need**

✅ No coding knowledge required — just basic tech comfort!

|  |  |
| --- | --- |
| Tool | Purpose |
| 🔧 n8n (Self-hosted or desktop) | No-code automation builder |
| 📄 Sample Credit Card PDFs | Statements to analyze |
| 🤖 Google Gemini (Chat Model) | For smart analysis & insights |
| 📊 Google Sheets | Store transaction data |
| 📄 Google Docs | Generate summary reports |

**✅ Workflow Structure (Overview)**

We will create **3 workflows** inside n8n:

|  |  |
| --- | --- |
| Flow | Purpose |
| 🔹 Flow 1 | Get credit card tips from AI |
| 🟢 Flow 2 | Extract and analyze PDF statements |
| 🟣 Flow 3 | Combine insights and generate reports |

**🔷 Flow 1 – AI Research (Industry Trends & Tips)**

💡 This flow helps you get best practices and credit card suggestions using AI

**🔹 Steps:**

1. **Manual Trigger**
   * Add a “Manual Trigger” node to start the workflow.
2. **Set Research Context**
   * Add a “Set” node with these fields:
     + Company: BizPro Solutions
     + Time Period: Oct 2024 – Mar 2025
     + Categories: Travel, Dining, Office Supplies
     + Banks: Axis, HDFC, ICICI, etc.
     + Goals: Maximize rewards, reduce fees
3. **Prompt Builder**
   * Add another “Set” node to build a custom prompt string.
   * The prompt asks AI:
     + Best practices
     + Best card types
     + Reward programs
     + Mistakes to avoid
4. **AI Agent (Gemini or OpenAI)**
   * Use Gemini Node → paste prompt from previous step
   * Output format: Markdown or JSON

**🟢 Flow 2 – PDF Extraction and Transaction Analysis**

📄 This flow reads a credit card PDF and extracts data using AI.

**🔹 Steps:**

1. **Read Binary Files from Disk**
   * Load all credit card PDFs (e.g., 25 employees)
2. **Split in Batches**
   * Use “Item Lists” node → Split each PDF into one item
3. **Read File from Disk**
   * Convert PDF to binary data
4. **Set PDF Metadata Context**
   * Set Node with:
     + Employee Name
     + Bank
     + Card Name
     + Statement Month
5. **Extract from PDF**
   * Use “Extract from File” node → convert PDF to plain text
6. **AI Agent (Gemini)**
   * Send extracted text to AI model
   * Ask AI to return:
     + Total Spend, Rewards, Due Date, Fees
     + List of all transactions (date, merchant, amount)
7. **Split Transactions**
   * Use “Item Lists → Split Out” to break transaction list
8. **Write to Google Sheets**
   * Append transactions to “Transactions” tab
   * Append summary to “Summary” tab

**🟣 Flow 3 – Report Generation (Per Employee)**

🧠 This flow creates personalized Google Docs reports

**🔹 Steps:**

1. **Merge Data**
   * Use “Merge” node to combine:
     + Output from Flow 1 (AI Research)
     + Output from Flow 2 (AI Summary)
2. **Prepare Report Content**
   * Use “Set” node to bundle everything:
     + Trends + employee usage
3. **Strategic Report Generator**
   * AI Agent generates final report using smart prompt
   * Output: Formatted report text
4. **Create Google Document**
   * Use Google Docs node to save report
   * Title: EmployeeName\_Card\_Report\_Q4.docx

**🧠 Optional: Scale for All Employees**

* Use **Loop** to process 25+ PDFs in one run
* Use **Wait/Delay node** to space out API calls
* Generate **final CFO report** using aggregated data from Sheets

**📝 Summary**

✅ No-code tool (n8n)  
✅ Google Gemini for intelligence  
✅ Fully automated from PDF → AI → Google Sheets/Docs  
✅ Saves hours of manual work  
✅ Scalable for any size organization