

Automated Product Description Workflow (End-to-End)

1. End-to-End Workflow Steps

1.1. Trigger / Input

Step	Action	Function
Trigger	User sends a Google Drive folder link via a Telegram Bot.	Initiates the entire automated pipeline.
Validation	The Bot validates the link.	Ensures the folder is accessible and not empty.
Error Handling	Invalid link or empty folder.	Direct notification to the user via Telegram.

1.2. Data Ingestion

Step	Action	Function
Python Script	The script loops through all image files in the Drive folder.	Identifies and processes product image files.
Data Extraction	Extracts the File Name designated as the Model.	Prepares data input for the

	Retrieves the Image Link for reference in the Spreadsheet.	LLM and the final output.
Error Handling	Non-image files (.jpg, .png, etc.)	Ensures only valid images are processed; processing continues for other files; errors are logged.

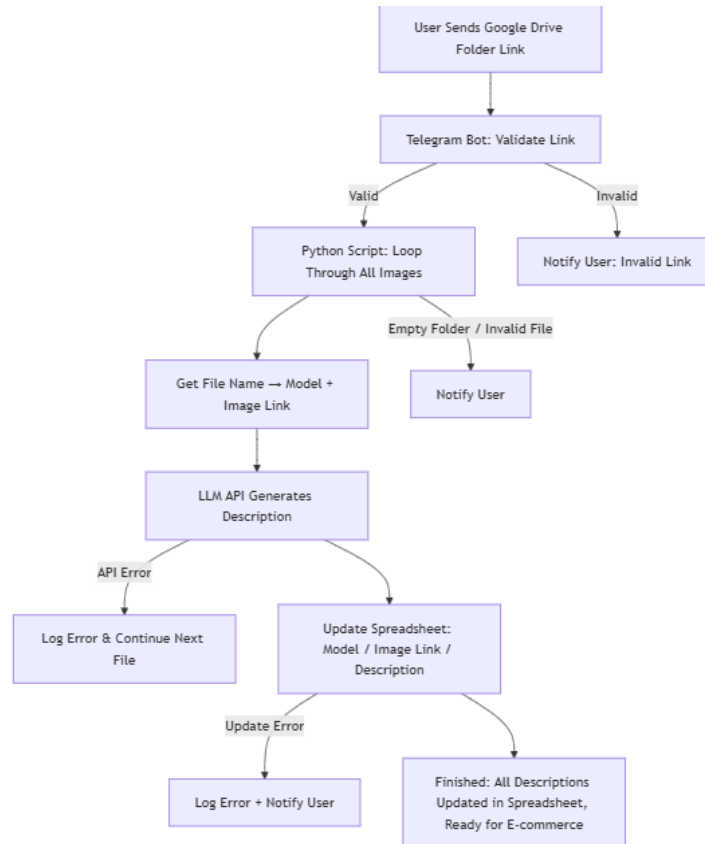
1.3. Data Processing & Model Inference

Step	Action	Function
LLM Input	For each image, the following data is fed to the LLM API (Gemini / GPT / Groq): 1. Model (File Name) 2. Image Link (for visual context)	Provides sufficient information for personalized description generation.
LLM Output	Generates a Description that is SEO-friendly, compelling, and unique.	Automation of high-quality content.
Error Handling	LLM API error / timeout.	Processing continues for the next file; errors are logged.

1.4. Post-processing & Output

Step	Action	Function
Output Repository	The Description is saved to a Spreadsheet as the <i>central repository</i> ready for e-commerce upload.	Provides structured output with 3 columns: Model
Error Handling	Spreadsheet update failure.	Processing continues for other files; errors are logged, and the user is notified.

2. High-Level End-to-End Flowchart



3. Technology Components & AI Techniques

Phase / Component	Technology / Technique	Function & Justification
Trigger	Telegram Bot	Receives the Drive folder link and acts as the automated pipeline trigger.
Storage	Google Drive	Central repository for all product images.

Backend & Integration	Python Script + Google Drive API	Manages batch processing, file name extraction (Model), LLM API calls, and Spreadsheet updates.
Core Process	LLM API (Gemini / GPT / Groq)	Generates descriptions that are SEO-friendly, compelling, and unique, eliminating the need for large training datasets (Model Inference).
Output	Spreadsheet	Structured output <i>central repository</i> ready for direct e-commerce integration.
AI Technique	Personalization	Uses the Model and Image Link (optional) as input to ensure a unique description for every product variant.
System Resilience	Error Handling & Logging	Ensures the pipeline does not halt upon API or Spreadsheet failures, and provides critical notifications to the user.

4. Conclusion

This workflow provides full automation for product description generation. The user only needs to upload images to Google Drive and send the link to the Telegram Bot.

1. Efficiency: Supports batch processing of thousands of images without manual intervention.
2. Content Quality: The LLM ensures descriptions are unique, compelling, and SEO-friendly.
3. Upload Readiness: The Spreadsheet acts as the immediate output, optimized for e-commerce platform integration.