**Automated Social Media Workflow**

**Workflow Overview:** This workflow automates the generation, approval, and publishing of social media content across multiple platforms (Instagram, LinkedIn, Twitter/X). It utilizes Google Gemini AI models for content and image generation, integrates with Gmail for approval notifications, and automates content posting through platform APIs and Cloudinary for image hosting.

**Key Features:** 1. Automated topic extraction from Google Sheets. 2. AI-driven caption generation for Instagram, LinkedIn, and Twitter/X. 3. Realistic image generation using Gemini AI. 4. Base64 image conversion and upload to Cloudinary. 5. Content approval workflow via Gmail. 6. Automated posting to Instagram, LinkedIn, and Twitter/X. 7. Client notification of successful content posting.

**Workflow Steps:**

1. **Trigger: Google Sheets**
   * Monitors a Google Sheet for newly added media post links.
   * Captures the latest row for processing.
2. **Wait Node (wait 1)**
   * Introduces a small delay to ensure stable data processing.
3. **AI Agent: Topic Extraction**
   * Uses Google Gemini AI to extract the topic from the provided media links.
   * Outputs strictly in JSON format: { "topic": "<extracted\_topic>" }
4. **Wait Node (wait 2)**
   * Adds a brief pause before sending data to content generators.
5. **Text Content Generator**
   * Generates platform-specific captions with relevant hashtags.
   * Platforms supported: Instagram, LinkedIn, Twitter/X.
6. **Image Content Generator**
   * Generates a realistic image prompt based on the topic.
   * Ensures image adheres to size and resolution recommendations (max 8MB, 1200x627 pixels).
7. **Generate Image: Google Gemini Image Model**
   * Produces the image using Gemini-2.0-flash-exp model.
8. **Conditional Check (If Node)**
   * Validates if generated image data exists and is not empty.
9. **Approval Workflow via Gmail (Send-message Node)**
   * Sends an approval email to the client with generated captions and topic details.
   * Double-approval mechanism implemented: approve or regenerate.
10. **Switch Node**
    * Determines next steps based on client approval: proceed with posting or regenerate content.
11. **Base64 Converter**
    * Converts AI-generated image binary data into base64 for Cloudinary upload.
12. **Cloudinary Image Upload**
    * Uploads image to Cloudinary and retrieves hosted image URL.
13. **Set to IG Node**
    * Prepares Instagram post payload with image URL and caption.
14. **Instagram Container & Publish**
    * Publishes the prepared content to Instagram using Facebook Graph API.
15. **Twitter/X Media Upload**
    * Uploads the image to Twitter/X and retrieves media ID.
16. **Post to X Node**
    * Publishes post on Twitter/X using the media ID and generated caption.
17. **Post to LinkedIn Node**
    * Publishes the post on LinkedIn with generated caption.
18. **Merge Node**
    * Consolidates posting results from all platforms.
19. **Final Client Notification (Send a message Node)**
    * Sends an HTML email to the client confirming successful content posting.
    * Includes clickable social media icons linked to each post.

**Client Benefits:** - Saves time and effort in content creation and posting. - Ensures consistent and high-quality AI-generated captions and images. - Centralized approval system via email. - Real-time notifications on content publishing. - Multi-platform coverage for maximum audience engagement.

**Technical Requirements:** - Google Gemini API credentials. - Gmail OAuth2 credentials. - Cloudinary account for image hosting. - API credentials for Instagram, LinkedIn, and Twitter/X. - Access to Google Sheets for media link input.

**Support and Maintenance:** - Workflow designed for easy scalability and integration of additional social media platforms. - Logs and error handling integrated for smooth operations. - Scheduled maintenance recommended to update API tokens and AI models.