

# Guru Nanak Dev Engineering College

## Training Diary – TR-102 Report

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**Day 13**

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### Training Summary

On Day 13, we explored **LangFlow**, a powerful visual framework built on top of LangChain that allows users to create and manage AI workflows through a drag-and-drop interface. It simplifies the development of LLM-based applications without requiring complex coding.

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### What is LangFlow?

LangFlow is a **low-code/no-code UI** for LangChain that enables developers to:

- Design chains and agents visually
- Integrate tools and components like prompts, retrievers, and memory modules
- Test and debug pipelines in real-time

It's an efficient solution for prototyping and deploying AI-driven applications rapidly.

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### Project Completed: YouTube URL Summarizer

We built a **YouTube Video Summarizer** that takes a **YouTube video URL** as input and returns a **text summary** of the video content. The flow involved:

#### Pipeline Overview:

1. **URL Input** – User provides a YouTube link.
2. **Transcription Component** – Extracts audio and transcribes it using Whisper.
3. **Summarization Component** – Uses Gemini to generate a clean, concise summary from the transcript.
4. **Text Output Node** – Displays the final summary to the user.

#### Use Case:

Helps users quickly grasp the essence of long YouTube videos without watching them entirely—ideal for lectures, tutorials, or interviews.

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### Tools & Technologies Used

- **LangFlow** – for visual chain building
- **LangChain** – core logic integration
- **Python** – for backend functions
- **Gemini API** – for summarization
- **Whisper** – for speech-to-text transcription

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### Learning Outcome

- Learned how to install and configure **LangFlow** for visual app building.
- Designed a complete **end-to-end pipeline** for processing and summarizing YouTube content.
- Strengthened understanding of chaining LLM tools visually and logically.