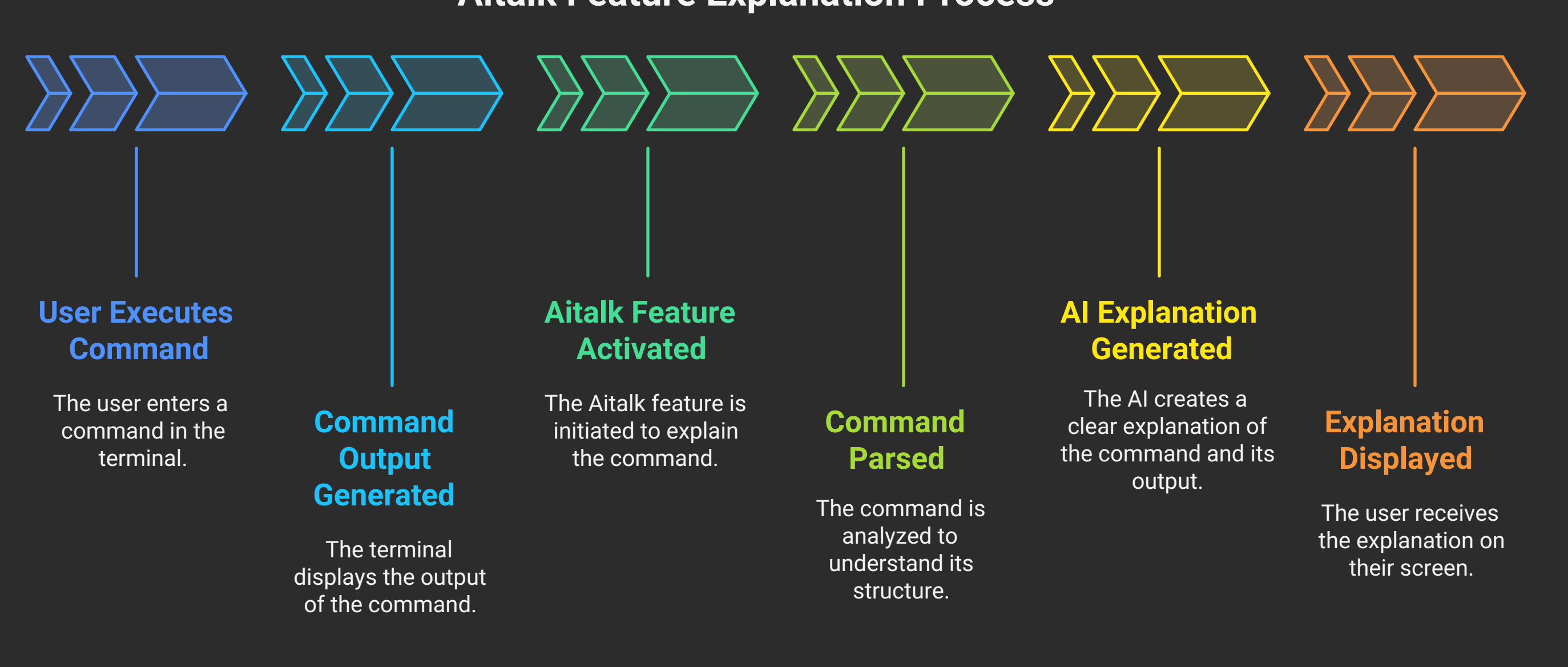
Aitalk --explain-X Feature Documentation

This document provides a comprehensive overview of the aitalk --explain-X feature, designed to simplify the understanding of recent shell commands and their outputs. By leveraging AI, users can receive clear explanations of their terminal activities, making it easier to learn and troubleshoot. This feature is particularly useful for both novice and experienced users who want to gain insights into their command-line interactions.

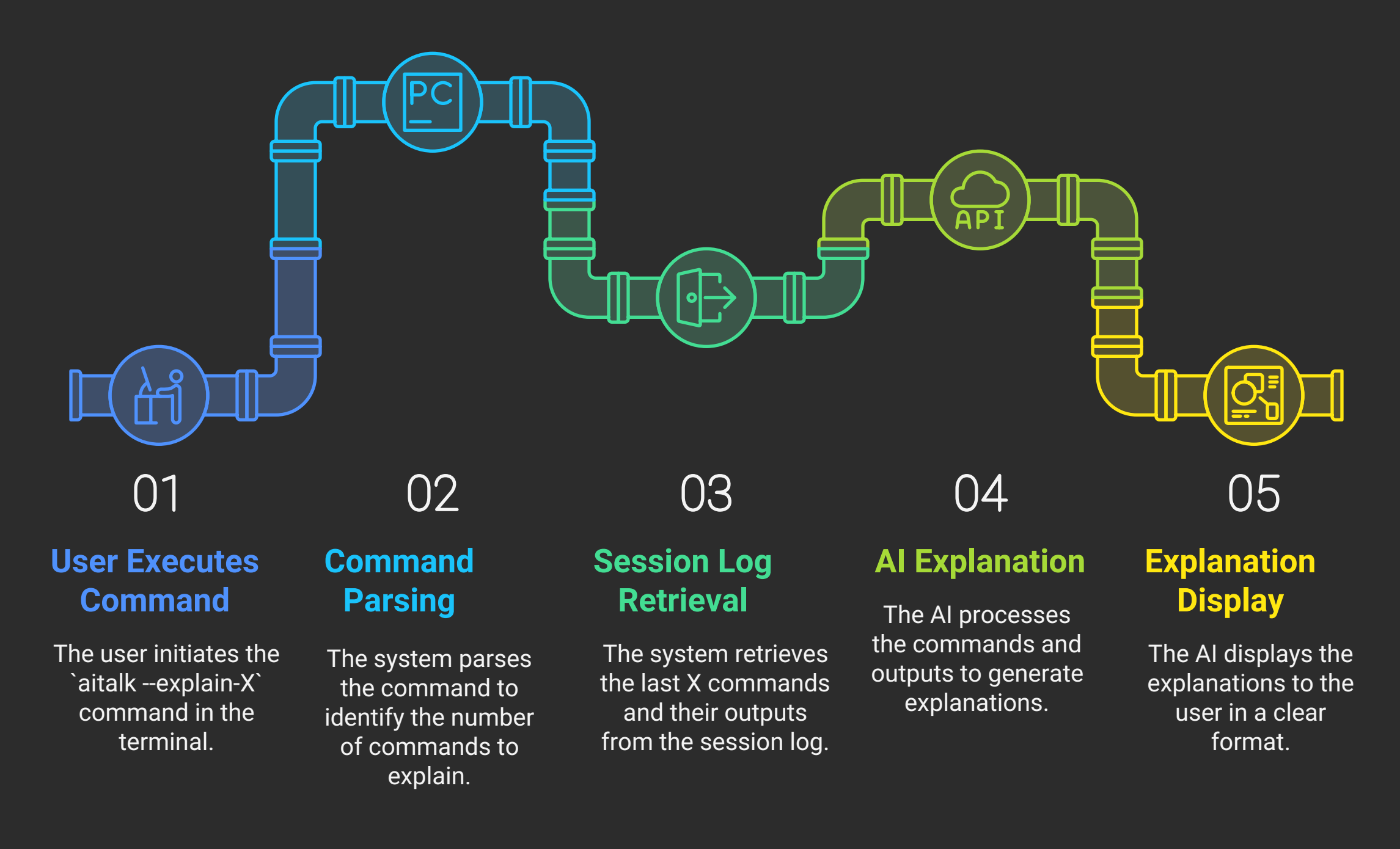
Aitalk Feature Explanation Process



Purpose

The aitalk --explain-X command allows users to explain the last X shell commands and their outputs from their terminal session log using AI, making it easy to understand what happened in their shell.

AI-Powered Shell Command Explanation

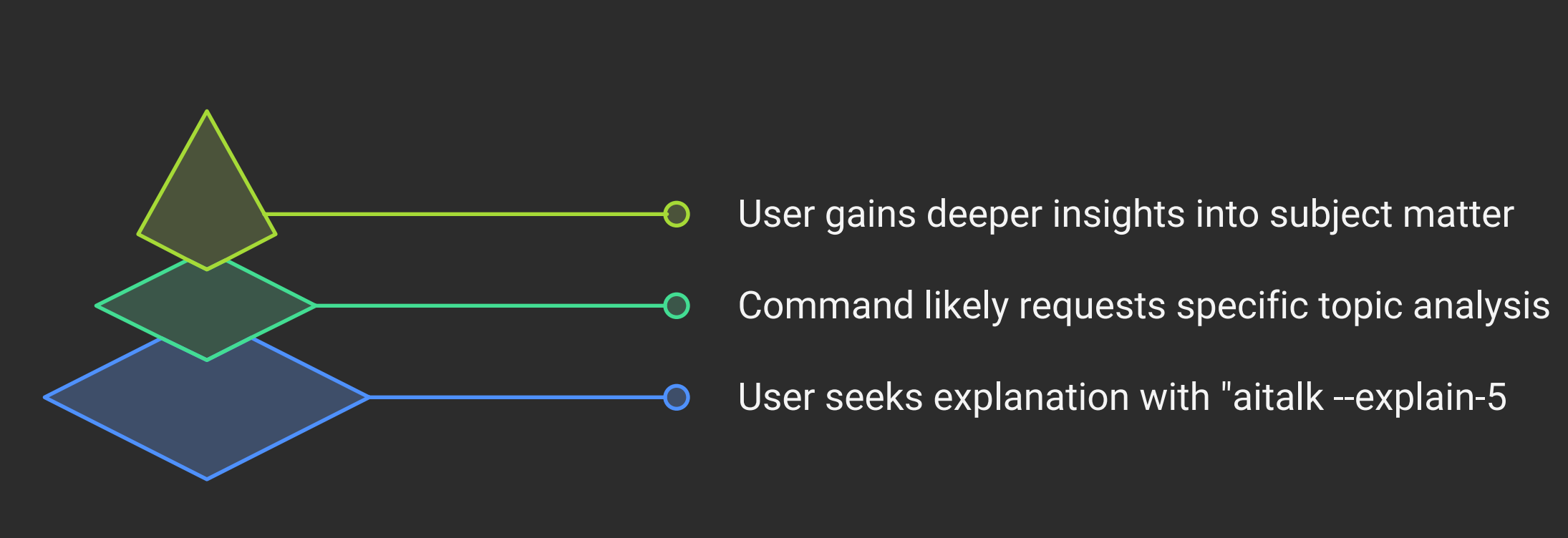


Usage

To use the feature, simply run the command:

```
aitalk --explain-5
```

AI Explanation Hierarchy



This command will explain the last 5 commands and their outputs from your session log.

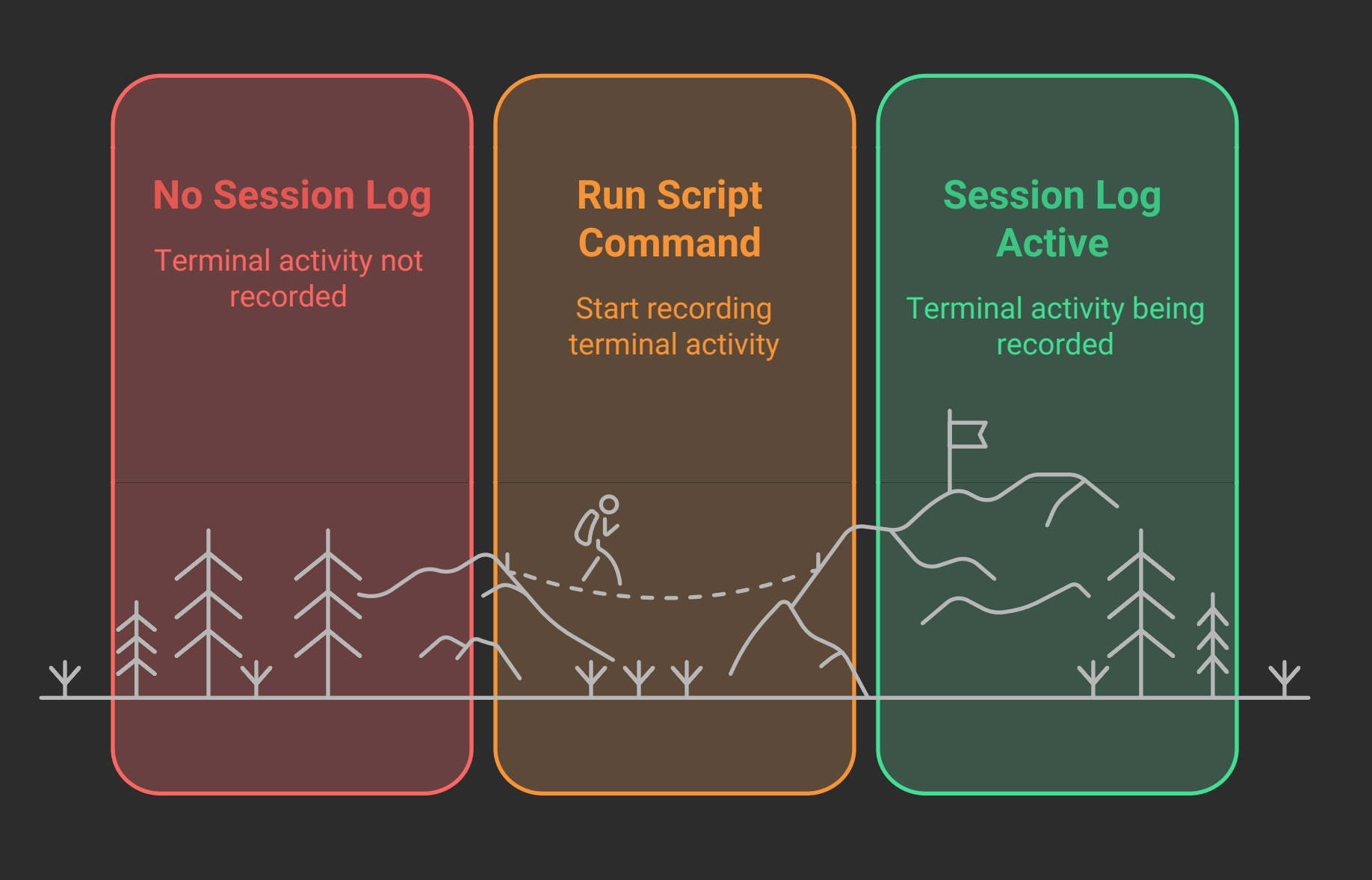
How It Works

Session Logging

To utilize this feature, you need to start your terminal session with logging enabled:

```
script ~/aitalk_session.log
```

Start Terminal Session Recording



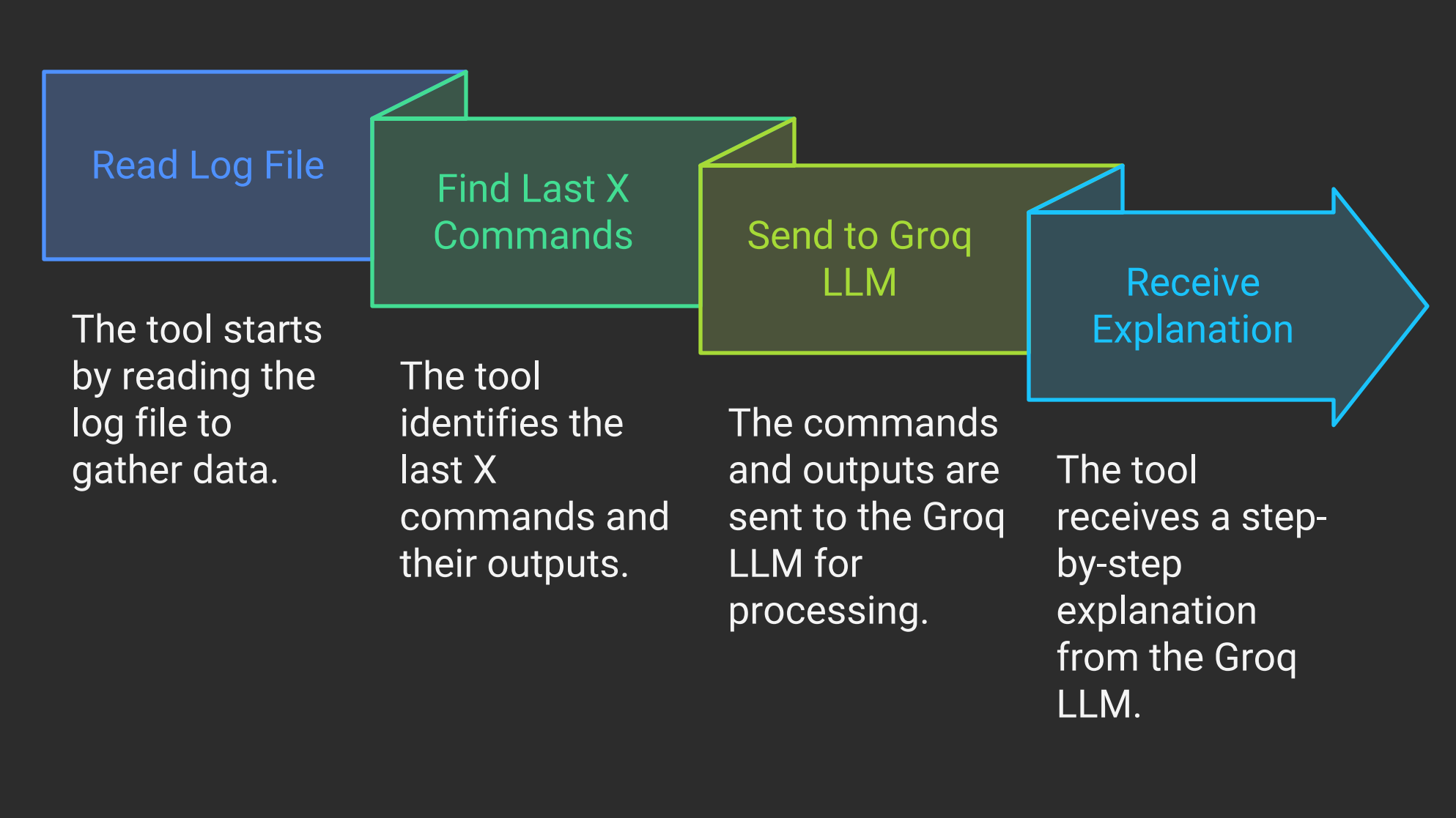
This command records all commands and outputs to **~/aitalk_session.log**.

Command Parsing

When you run aitalk --explain-X, the tool performs the following steps:

1. **Reads the log file.**
2. **Finds the last X commands (and their outputs).**
3. **Sends them to the Groq LLM for a step-by-step explanation.**

aitalk Tool Execution Sequence



AI Explanation

The LLM analyzes the commands and outputs, then returns a human-readable explanation.

Example

Suppose your session log contains:

```
$ ls
file1.txt  file2.txt
$ cat file1.txt
Hello World
$ rm file2.txt
$ git status
On branch main
nothing to commit, working tree clean
$ echo "done"
done
```

Running:

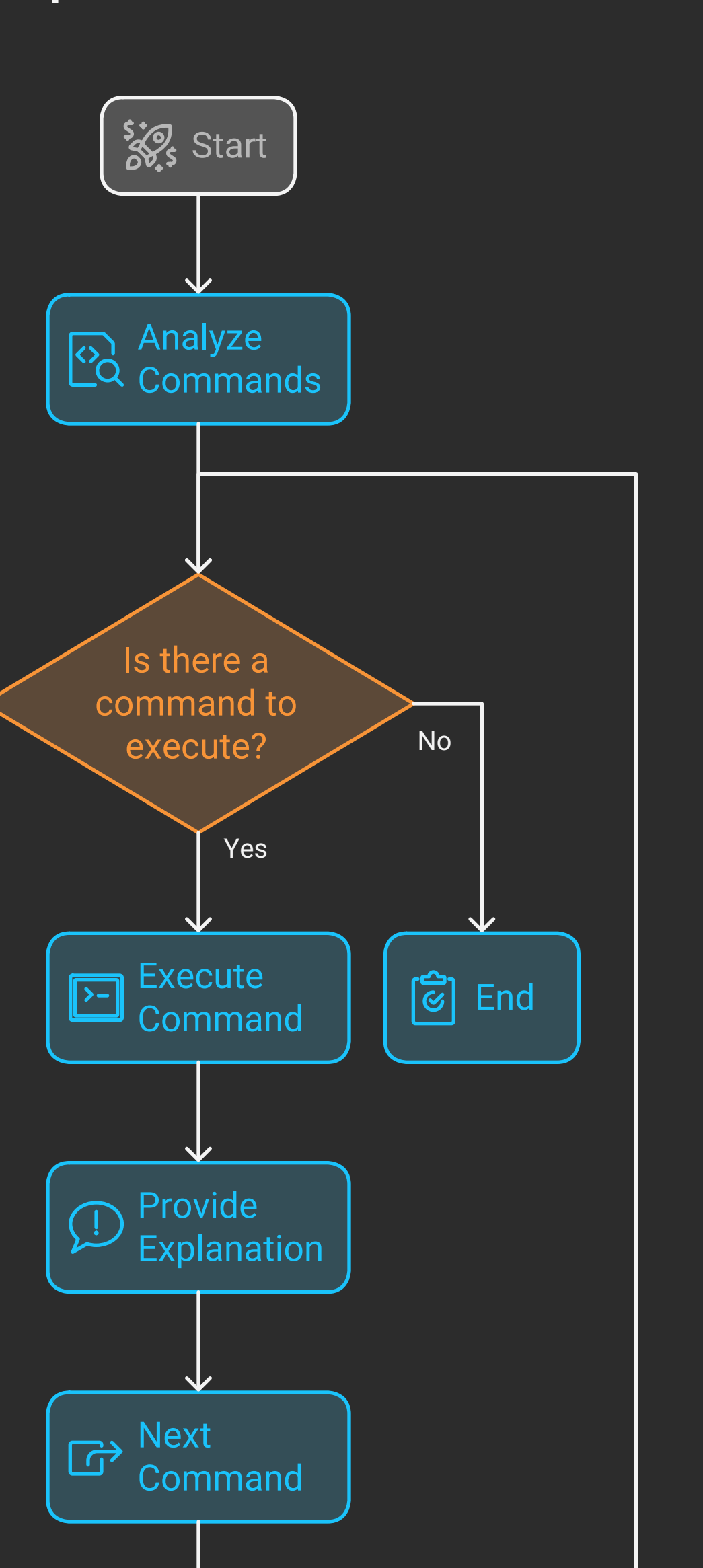
```
aitalk --explain-3
```

Might produce:

```
------ LLM Explanation ------
```

1. **cat file1.txt: Displays the contents of file1.txt, which is "Hello World".**
2. **rm file2.txt: Deletes file2.txt from the directory.**
3. **git status: Shows the current git branch and confirms there are no changes to commit.**

LLM Explanation of Command Execution



Code Explanation

Entry Point: `aitalk.py`

The entry point for the command is structured to detect the --explain-X argument and call the explanation function with the specified number X.

```
for arg in sys.argv:
    match = re.match(r'^--explain-(\d+)$', arg)
    if match:
        explain_flag = int(match.group(1))
        break

if explain_flag is not None:
    explain_last_n_commands_with_output(explain_flag)
```

Main Logic: `explain_utils.py`

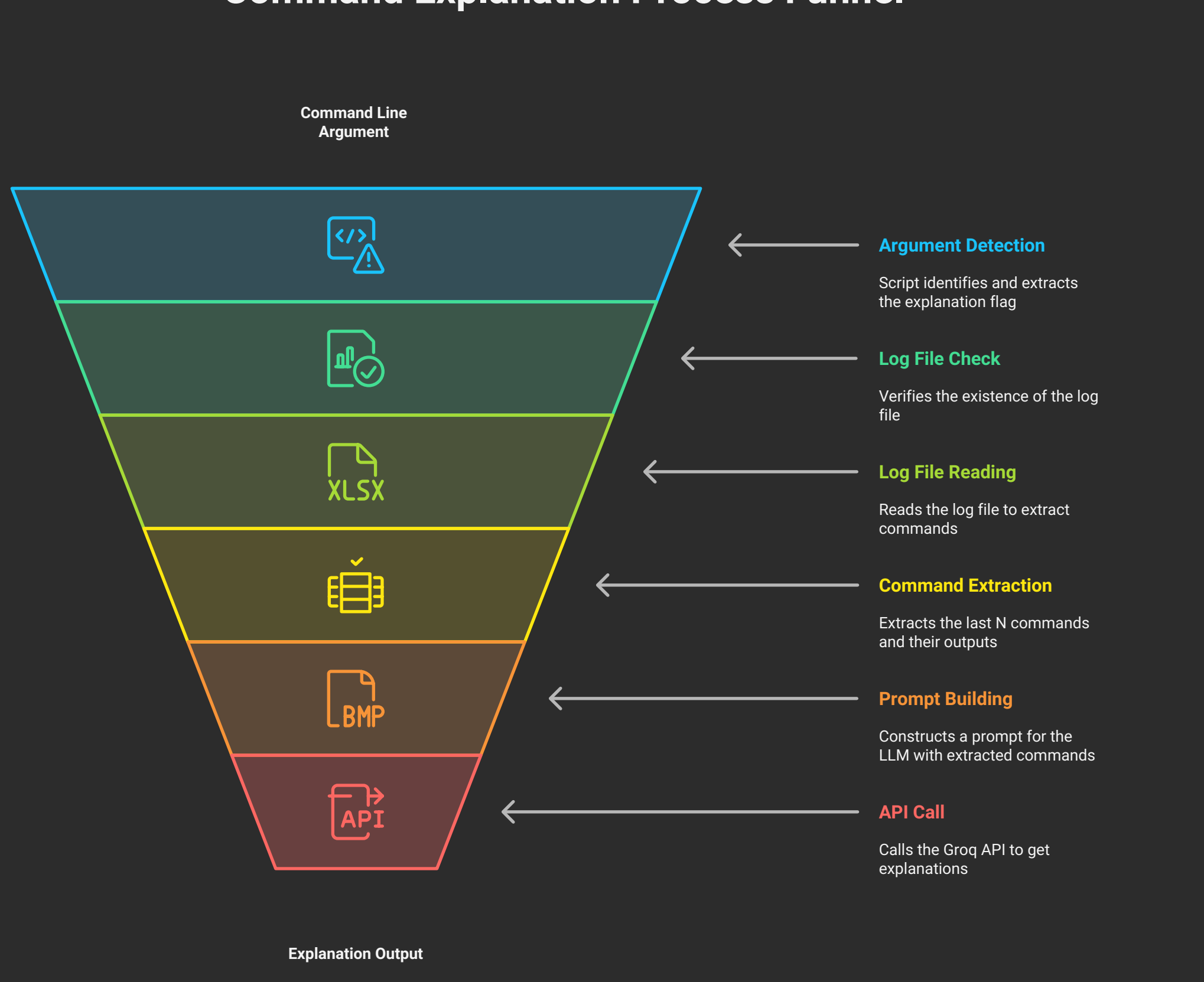
The main logic for explaining the commands is encapsulated in the following function:

```
def explain_last_n_commands_with_output(n,
log_path=os.path.expanduser('~/aitalk_session.log')):
    if not os.path.exists(log_path):
        print(f"❌  Log file not found: {log_path}")
         print("Tip: Start your terminal session with: script
~/aitalk_session.log")
         return

     with open(log_path, 'r') as f:
         lines = f.readlines()

     # Logic to process the log file and extract commands...
```

This function:

1. **Reads the log file.**
2. **Finds the last N commands and their outputs.**
3. **Builds a prompt for the LLM.**
4. **Calls the Groq API for an explanation.**
5. **Prints the explanation in a readable format.**

Command Explanation Process Funnel



Tips

- Ensure you start your terminal session with **script ~/aitalk_session.log** to enable logging.
- You can change the number in **--explain-X** to explain any number of recent commands.

Terminal usage tips