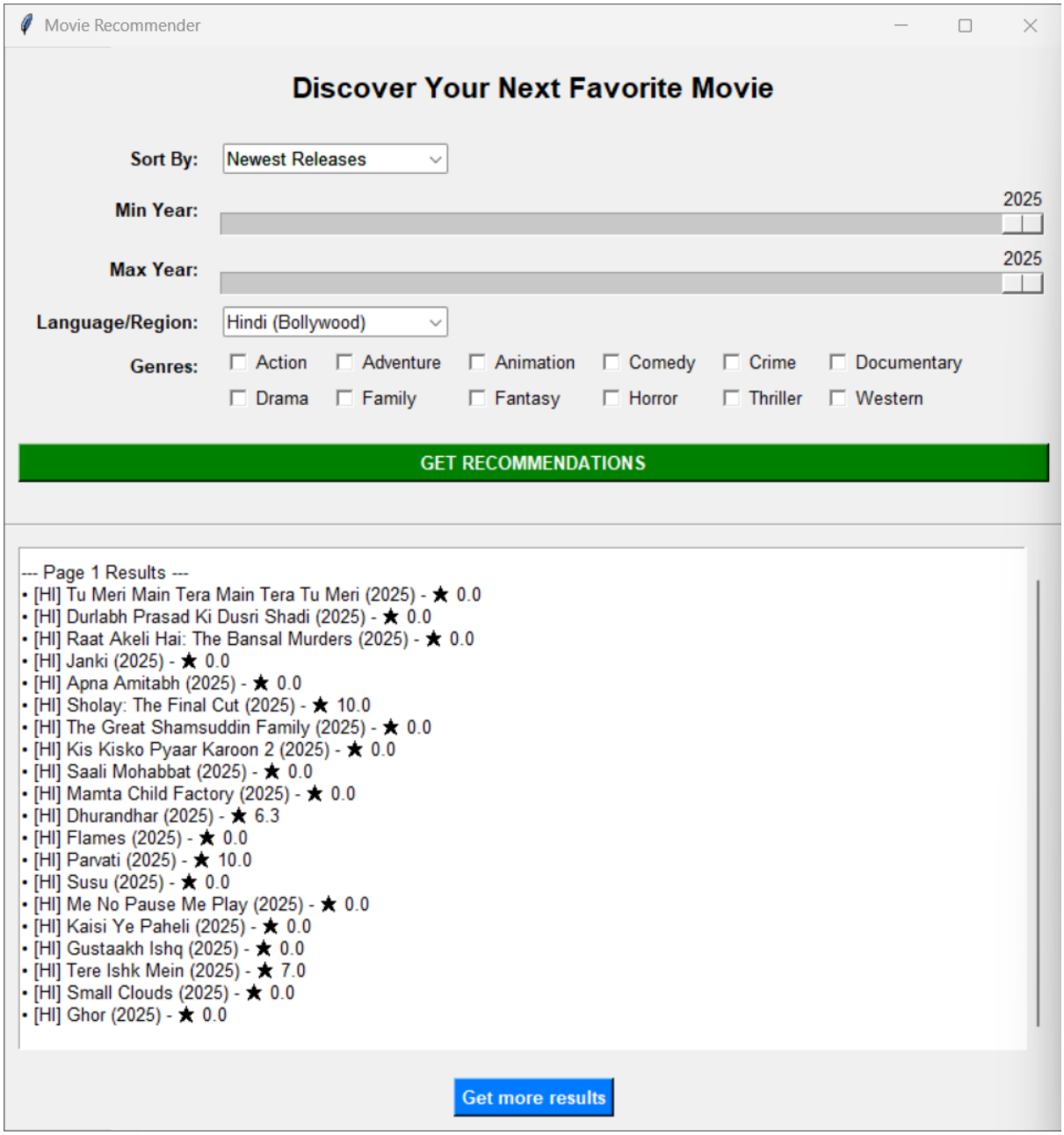
To run this program, the pre-requites are
1. Install Python
2. pip install requests

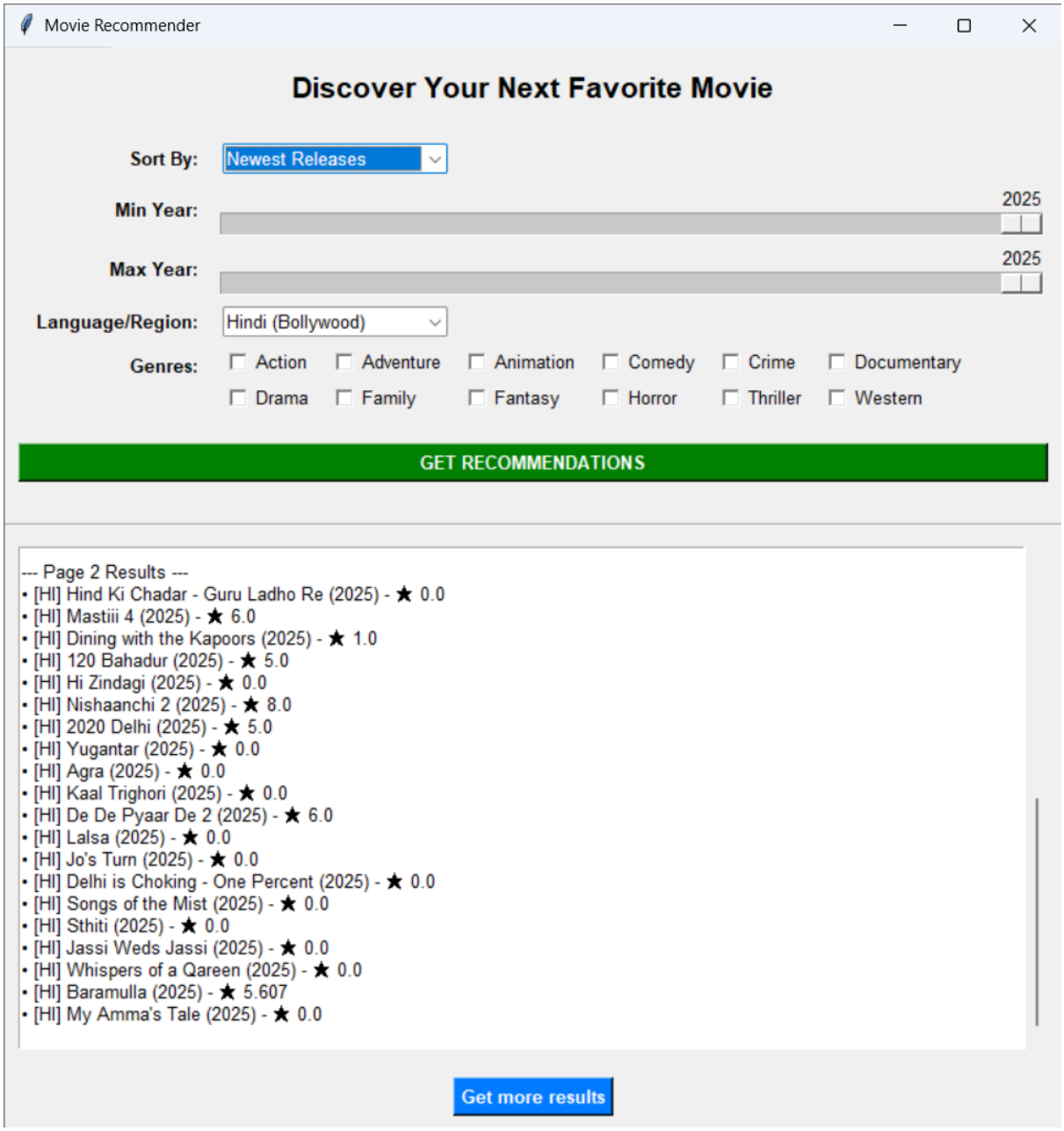
After running the program (Scenario- 1)
1. Sort by Newest Releases- This will show the movies sorted with new release date.
2. Min Year- Selected 2025
3. Max Year- Selected 2025
4. Language/Region- Hindi (Bollywood)
5. Genre- None selected (This will choose all “Genres”)

Click on “GET RECOMMENDATIONS”

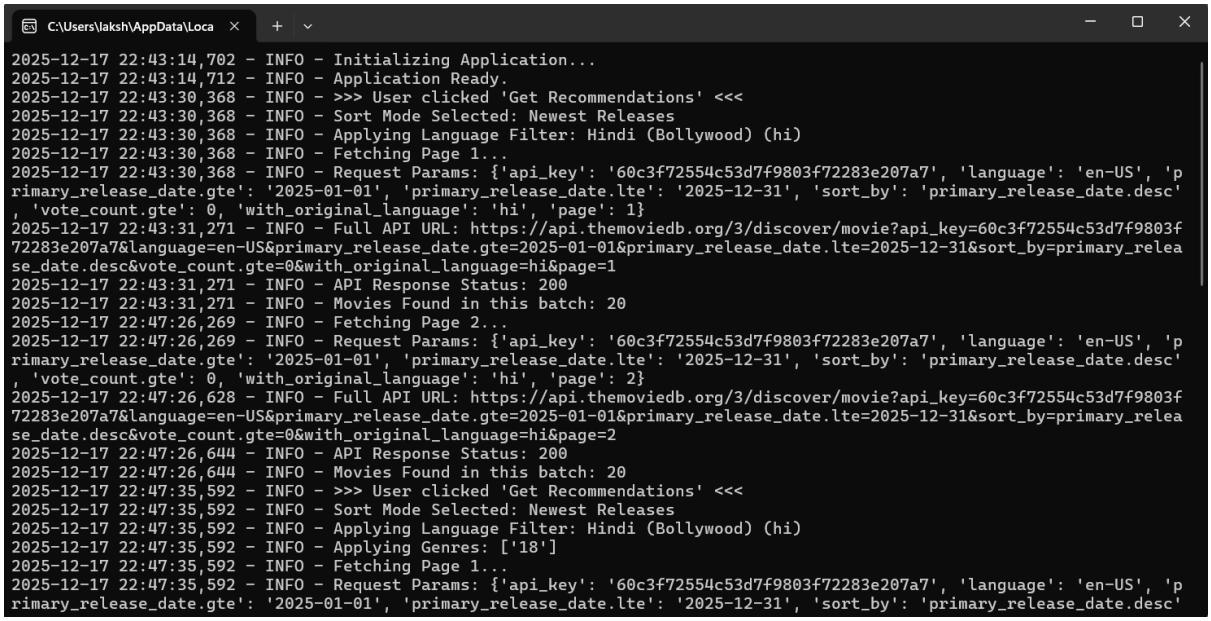
The program will show the Results



If you need more results, click on the blue button, it will show more results



In the background, the cmd will show successful run



Script Logic

Mode	What it sorts by	The "Secret Sauce" (Vote Count)
Top Rated	Quality (0-10)	Must have **many** votes (300+) to prove it's real.
Most Popular	Hype (Buzz)	Ignores votes, focuses on activity.
Newest	Date (Time)	Allows **0 votes** (because it's brand new).
Hidden Gems	Quality (0-10)	Must have **few** votes (<1000) to keep it niche.

CODE OF THE SCRIPT

```
import tkinter as tk
from tkinter import scrolledtext, messagebox, ttk
import requests
from requests.adapters import HTTPAdapter
from urllib3.util.retry import Retry
import logging # --- NEW: Import Logging Module

# --- 0. DEBUGGING SETUP ---
# This configures the "cmd" output.
# level=logging.INFO means it will show everything from "INFO" warnings and errors.
logging.basicConfig(
    level=logging.INFO,
    format='%(asctime)s - %(levelname)s - %(message)s'
)

# --- 1. CONFIGURATION AND CONSTANTS ---
TMDB_API_KEY = "60c3f72554c53d7f9803f72283e207a7"
BASE_URL = "https://api.themoviedb.org/3"

# Font settings
HEADING_FONT = ("Arial", 16, "bold")
LABEL_FONT = ("Arial", 10, "bold")
UI_FONT = ("Arial", 10)

# Genre Map
GENRE_MAP = {
    "Action": 28, "Adventure": 12, "Animation": 16, "Comedy": 35,
    "Crime": 80, "Documentary": 99, "Drama": 18, "Family": 10751,
    "Fantasy": 14, "Horror": 27, "Thriller": 53, "Western": 37
}
```

```
# --- LANGUAGE GROUPS ---
LANGUAGE_GROUPS = {
    "Any Language": "",
    "English (Hollywood/Global)": "en",
    "Hindi (Bollywood)": "hi",
    "South Indian (Tamil/Telugu/Mal/Kan)": "ta|te|ml|kn",
    "European (Fr/Es/De/It)": "fr|es|de|it|sv|da",
    "East Asian (JP/KR/CN)": "ja|ko|zh|cn|th|id"
}

# --- SORT OPTIONS ---
SORT_MODES = [
    "Top Rated",
    "Most Popular",
    "Newest Releases",
    "Hidden Gems"
]

# --- 2. THE APPLICATION CLASS ---
class MovieRecommenderApp:
    def __init__(self, root):
        logging.info("Initializing Application...") # Log startup
        self.root = root
        self.root.title("Movie Recommender")
        self.root.geometry("850x850")

        # -- State Variables --
        self.current_page = 1
        self.saved_search_params = {}
        self.genre_checkboxes = {}
```

```
        self.lang_group_var = tk.StringVar()
        self.sort_var = tk.StringVar()

        # -- Setup --
        self.session = self._create_network_session()
        self._build_ui()
        logging.info("Application Ready.")

    def _create_network_session(self):
        retry_strategy = Retry(
            total=3, backoff_factor=1, status_forcelist=[429, 500, 502, 503, 504],
            allowed_methods=["HEAD", "GET", "OPTIONS"]
        )
        adapter = HTTPAdapter(max_retries=retry_strategy)
        session = requests.Session()
        session.mount("https://", adapter)
        return session

    def _build_ui(self):
        # 1. Main Heading
        tk.Label(self.root, text="Discover Your Next Favorite Movie",
font=HEADING_FONT).pack(pady=15)

        # 2. Input Container
        self.input_frame = tk.Frame(self.root, padx=10, pady=5)
        self.input_frame.pack(fill="x")
        self.input_frame.columnconfigure(0, weight=0)
        self.input_frame.columnconfigure(1, weight=1)

        # 3. Add the controls
        self._add_sort_section()
```

```
        self._add_year_sliders()
        self._add_language_group_selector()
        self._add_genre_section()

        # 4. Search Button (Green)
        btn = tk.Button(self.input_frame, text="GET RECOMMENDATIONS",
command=self.start_new_search,
                        bg="green", fg="white", font=LABEL_FONT)
        btn.grid(row=5, column=0, columnspan=2, pady=20, sticky="ew")

        # 5. Results Area
        ttk.Separator(self.root, orient="horizontal").pack(fill="x", pady=5)
        self.results_text = scrolledtext.ScrolledText(self.root, height=15, font=UI_FONT)
        self.results_text.pack(fill="both", expand=True, padx=10, pady=10)

        # 6. "Get More" Button (Blue)
        self.load_more_btn = tk.Button(self.root, text="Get more results",
command=self.fetch_next_page,
                                       bg="#007bff", fg="white", font=LABEL_FONT)

    # --- UI COMPONENT BUILDERS ---

    def _add_sort_section(self):
        tk.Label(self.input_frame, text="Sort By:", font=LABEL_FONT).grid(row=0, column=0, sticky="e",
padx=10, pady=5)
        self.sort_combo = ttk.Combobox(self.input_frame, textvariable=self.sort_var,
values=SORT_MODES, state="readonly", font=UI_FONT)
        self.sort_combo.grid(row=0, column=1, sticky="w", padx=5)
        self.sort_combo.current(0)

    def _add_year_sliders(self):
        tk.Label(self.input_frame, text="Min Year:", font=LABEL_FONT).grid(row=1, column=0,
sticky="e", padx=10, pady=5)
```

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        self.min_year_slider = tk.Scale(self.input_frame, from_=1970, to=2025, orient="horizontal", font=UI_FONT)
        self.min_year_slider.set(2000)
        self.min_year_slider.grid(row=1, column=1, sticky="ew")

        tk.Label(self.input_frame, text="Max Year:", font=LABEL_FONT).grid(row=2, column=0, sticky="e", padx=10, pady=5)
        self.max_year_slider = tk.Scale(self.input_frame, from_=1970, to=2025, orient="horizontal", font=UI_FONT)
        self.max_year_slider.set(2025)
        self.max_year_slider.grid(row=2, column=1, sticky="ew")

    def _add_language_group_selector(self):
        tk.Label(self.input_frame, text="Language/Region:", font=LABEL_FONT).grid(row=3, column=0, sticky="e", padx=10, pady=5)
        values = list(LANGUAGE_GROUPS.keys())
        self.lang_group_combo = ttk.Combobox(self.input_frame, textvariable=self.lang_group_var, values=values, state="readonly", font=UI_FONT)
        self.lang_group_combo.grid(row=3, column=1, sticky="w", padx=5)
        self.lang_group_combo.current(0)

    def _add_genre_section(self):
        tk.Label(self.input_frame, text="Genres:", font=LABEL_FONT).grid(row=4, column=0, sticky="ne", padx=10, pady=5)
        genre_frame = tk.Frame(self.input_frame)
        genre_frame.grid(row=4, column=1, sticky="w")
        columns = 6
        for i, (genre_name, genre_id) in enumerate(sorted(GENRE_MAP.items())):
            var = tk.IntVar()
            self.genre_checkboxes[genre_name] = var
            row_pos = i // columns
            col_pos = i % columns
```

```
        tk.Checkbutton(genre_frame, text=genre_name, variable=var,
font=UI_FONT).grid(row=row_pos, column=col_pos, sticky="w", padx=5)


    # --- 3. LOGIC FUNCTIONS ---


    def start_new_search(self):
        logging.info(">>> User clicked 'Get Recommendations' <<<")
        self.current_page = 1
        self.results_text.delete(1.0, tk.END)
        self.load_more_btn.pack_forget()

        # 1. Base Parameters
        params = {
            "api_key": TMDB_API_KEY,
            "language": "en-US",
            "primary_release_date.gte": f"{self.min_year_slider.get()}-01-01",
            "primary_release_date.lte": f"{self.max_year_slider.get()}-12-31"
        }

        # 2. Sort Logic
        mode = self.sort_var.get()
        logging.info(f"Sort Mode Selected: {mode}")

        if mode == "Top Rated":
            params["sort_by"] = "vote_average.desc"
            params["vote_count.gte"] = 300
        elif mode == "Most Popular":
            params["sort_by"] = "popularity.desc"
            params["vote_count.gte"] = 5
        elif mode == "Newest Releases":
            params["sort_by"] = "primary_release_date.desc"
```

```
            params["vote_count.gte"] = 0
        elif mode == "Hidden Gems":
            params["sort_by"] = "vote_average.desc"
            params["vote_count.gte"] = 10
            params["vote_count.lte"] = 1000

        # 3. Language Group
        selected_name = self.lang_group_var.get()
        lang_codes = LANGUAGE_GROUPS.get(selected_name, "")
        if lang_codes:
            params["with_original_language"] = lang_codes
            logging.info(f"Applying Language Filter: {selected_name} ({lang_codes})")

        # 4. Genres
        included_ids = [str(GENRE_MAP[name]) for name, var in self.genre_checkboxes.items() if
var.get() == 1]
        if included_ids:
            params["with_genres"] = "|".join(included_ids)
            logging.info(f"Applying Genres: {included_ids}")

        # 5. Save and Fetch
        self.saved_search_params = params
        self.fetch_next_page()

    def fetch_next_page(self):
        self.saved_search_params["page"] = self.current_page

        # --- DEBUG LOGGING ---
        logging.info(f"Fetching Page {self.current_page}...")
        logging.info(f"Request Params: {self.saved_search_params}")
```

```
try:
    url = f"{BASE_URL}/discover/movie"
    response = self.session.get(url, params=self.saved_search_params, timeout=10)

    # Log the actual URL being triggered
    logging.info(f"Full API URL: {response.url}")

    response.raise_for_status()

    data = response.json().get('results', [])
    logging.info(f"API Response Status: {response.status_code}")
    logging.info(f"Movies Found in this batch: {len(data)}")

    if not data:
        if self.current_page == 1:
            logging.warning("No results found for these filters.")
            self.results_text.insert(tk.END, "No movies found. Try relaxing your filters.\n")
        else:
            logging.info("End of results reached.")
            self.results_text.insert(tk.END, "\n--- No more results available ---\n")
            self.load_more_btn.pack_forget()
    else:
        self.results_text.insert(tk.END, f"\n--- Page {self.current_page} Results ---\n")

        for movie in data:
            title = movie.get('title', 'Unknown')
            date = movie.get('release_date', '????')[:4]
            rating = movie.get('vote_average', 'N/A')
            lang = movie.get('original_language', '??').upper()

            self.results_text.insert(tk.END, f"• [{lang}] {title} ({date}) - ★ {rating}\n")
```

```
            self.results_text.see(tk.END)
            self.current_page += 1
            self.load_more_btn.pack(pady=10)

        except Exception as e:
            # This prints the FULL error trace to your cmd
            logging.error("CRITICAL ERROR occurred during fetch:", exc_info=True)
            messagebox.showerror("Error", f"Failed to fetch data:\n{e}")

# --- 4. MAIN EXECUTION ---
if __name__ == "__main__":
    root = tk.Tk()
    app = MovieRecommenderApp(root)
    root.mainloop()
```