



Computing Studies and Information Systems
CSIS 4495 002 WINTER 2025
Applied Research Project

**Developing a Python-Based Interactive Dashboard for Analyzing Movie
Trends and Insights**

Submitted to: Prof. Padmapriya Arasanipalai Kandhadai

Submitted by: Lan Dinh

Student number: 300383107

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PROGRESS REPORT #1

1. Work Date/Hours Logs

ACTIVITY	DATE	NUMBER OF HOURS	STATUS	NOTES
Doing Interest and Expertise Survey to find out what skills and technologies want to work on	January 12, 2025	1:00	Complete	Survey completed successfully. Identified interest in Mobile Developments and Building Dashboards by Tableau and PowerBI
Finding the topic for the research project, looking for paper research and previous works	January 14, 2025	2:00	Complete	Explored multiple topics. Narrowed down to Activity Reminder Mobile App.
Creating and adding the Client in the Repo	February 1, 2025	0:00	Complete	Client added to the repository. No time spent as it was instantaneous.
Writing the draft proposal for the Client	January 20, 2025	6:00	Complete	
Discussing to the Client about the choosing topic is Activity Reminder Mobile App for Douglas College students	January 23, 2025	0:30	Complete	Client provided feedback. Topic was approved initially but later changed.
Changing the topic to the Dashboard Development by Python for analyzing movie trends and insights	January 24, 2025	0:30	Approved	Topic changed based on client's suggestion. New focus on Python dashboard developments.
Rewriting the proposal	January 24, 2025	7:00	Complete	Proposal rewritten to reflect the new topic. Submitted for approval. And it was approved

Cleaning database (Netflix database) by using JupyterNotebook	January 26, 2025	2:00	Complete	Data cleaned and prepared for analysis.
Writing the Progress Report #1	January 29, 2025	5:00	Complete	
Writing questions for an interview	February 1, 2025	1:00	Complete	Questions are being developed for Participant A and B.
Drafting the ideas for the dashboard	February 2, 2025	1:00	Complete	Initial ideas for dashboard layout and functionality drafted.
Coding for the dashboard by Python	February 6, 2025	10:00	In Progress	Coding in progress. Focused on data visualization and user interface.
Doing the interview with Participant A	February 8, 2025	0:30	Complete	Still finding the potential participant and scheduling. The deadline is Feb 10
Doing the interview with Participant B	February 10, 2025	0:30	Complete	Still finding the potential participant and scheduling. The deadline is Feb 12
Analyzing interview results	February 14, 2025	2:00	Complete	Analyze feedback from Participants A and B to refine dashboard features.
Writing the Interview Questions and Responses	February 14, 2025	2:00	Complete	Interview questions and responses documented and uploaded to GitHub.
Cleaning database (IMDB database) by using Jupyter Notebook	February 16, 2025	1:00	Complete	Data cleaned and prepared for analysis.
Adding IMDb dataset (imdb_top_1000.csv) to the repository	February 16, 2025	0:00	In Progress	Primary dataset for “Gross Earnings Explorer” added to repo. No time spent as it was instantaneous.
Coding the “Movie Trends Dashboard” welcome page	February 18, 2025	1:00	Complete	Initial script (Welcome.py) completed with layout and styling

Coding the “Explore Global Trends” dashboard	February 20, 2025	5:00	Complete	Initial script (GlobalTrend.py) completed with Netflix-based visualizations and filters. Enhanced with custom styling.
Drafting the midterm report	February 24, 2025	3:00	Complete	Midterm report drafted to summarise progress, including interviews, and initial coding efforts.
Coding the “Gross Earnings Explorer” dashboard	March 1, 2025	7:00	Complete	Initial script (GrossEarnings.py) completed with data loading, cleaning, and filters.
Enhancing dashboards with custom styling and informative elements	March 5, 2025	8:30	Complete	Improved visual appeal and usability of Welcome page, Explore Global Trends, and Gross Earnings Explorer dashboards.
Drafting the progress report #2	March 9, 2025	4:00	Complete	Progress report #2 drafted to detail dashboard development, interview insights, and visualization progress.
Creating user authentication for the dashboards	March 14, 2025	2:30	Complete	Built the login system and a registration feature to Welcome.py. Included checks to prevent duplicate usernames and securely appended new users’ data to users.json.
Adding profile editing functionality	March 18, 2025	5:30	Complete	Implemented an edit form on the profile page to update full name, date of birth, email, and password. Added validation for password confirmation and updated users.json with changes.
Integrating avatar upload feature	March 19, 2025	0:30	Complete	Added avatar upload supports to the profile page.

Creating the movie checklist with search suggestions and pagination	March 22, 2025	5:15	Complete	Added keyword suggestions and pagination (Previous/Next) to the Discover Movies tab for better usability.
Drafting the progress report #3	March 23, 2025	0:45	Complete	Wrote Progress Report #3 to detail this week's work: user authentication, profile page, and movie checklist features.
Implementing watchlist and history tabs with interactive features	March 26, 2025	4:30	Complete	Added functionality to mark movies as watched, remove them, and display watched movies with timestamps in separate tabs.
Adding user rating system with emojis	March 27, 2025	1:15	Complete	Integrated an emoji-based rating system (1–9) for watched movies in the History tab.
Creating notification system	March 29, 2025	1:45	Complete	Built a notification popover with unread/read styling, plus options to mark all as read or clear notifications
Drafting the progress report #4	March 10, 2025	0:30	Complete	Wrote Progress Report #4 to summarize this week's enhancements to the movie checklist feature.

2. Description of work done

This week, I made significant progress on the Movie Trends Dashboard project by enhancing the movie checklist feature with additional functionality and improving the user experience. Key accomplishments include:

- A fully functional movie discovery system using the TMDB API, including search and popular movie browsing.
- A to watchlist and history interface with options to mark movies as watched, rate them, share with friends, and manage notifications.

3. Challenges and Solutions

One major challenge was managing state across multiple interactive components (e.g., search pagination, notifications, and sharing toggles) in Streamlit, which reruns the script on every interaction. I addressed this by leveraging `st.session_state` to persist data like movie checklists, pagination states, and toggle statuses across reruns.

4. Repo Check in of Implementation

The following files and folders have been checked into the project repository, categorized based on their purpose and contribution to the project:

- a. Reports and Documents folder:
 - Progress Report #4 (Added: March 30, 2025)
- b. Misc folder:
(No updates this week)
- c. Implementation folder:
 - MovieChecklist.py (Updated: March 30, 2025) - Enhanced script for the movie checklist feature, now including search suggestions, pagination, notifications, sharing, and user ratings with emoji-based feedback.
 - auth.py (Updated: March 27, 2025) - Handles credential loading and profile updates.

5. Dashboard Code Explanation

Movie Checklist:

- **Discover Movies Tab:**
 - Search: Users can input a movie title to search, with pagination (Previous/Next buttons) controlled via `st.session_state.search_page`. Results show title, release year, rating, overview, and poster, with an "Add to Checklist" button. A keyword suggestion system displays up to three related movie titles based on the search query, improving usability.
 - Popular Movies: Displays up to 33 unique trending movies (filtered to exclude already-added ones) in a three-column grid with posters, ratings, and overviews. Users can add movies to their checklist with one click.
- **To Watchlist Tab:** Lists all the to-matched movies from the user's checklist with options to:
 - Mark as watched (moves to History tab with a timestamp).

- Remove from the list.
- Share with friends via a toggleable interface, allowing selection of a friend and a custom message. Shared movies trigger notifications for the recipient.
 - **History Tab:** Displays watched movies with:
 - Watch date and poster.
 - A rating system using emojis via a popover menu. Ratings are saved to the checklist.
 - Options to remove or share movies, mirroring the watchlist functionality.
 - **Notifications:** A popover in the header shows unread/read notifications (styled with custom CSS) with options to mark all as read or clear them. Notifications are updated when movies are shared.