MOVIE REVIEW ANALYZER

A PROJECT REPORT

Submitted by

RAGUNANDAN B(220701211)

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RAJALAKSHMI ENGINEERING COLLEGE

CHENNAI - 602105

BONAFIDE CERTIFICATE

Certified that this project report **"MOVIE REVIEW ANALYZER"** is the bonafide work of **"RAGUNANDAN B (220701211)"** who carried out the project work for the subject OAI1903-Introduction to Robotic Process Automation under my supervision.

Dr. N.Durai Murugan

SUPERVISOR

Professor

Department of

Computer Science and Engineering

Rajalakshmi Engineering College

Rajalakshmi Nagar

Thandalam

Chennai - 602105

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Internal Examiner **External Examiner**

ABSTRACT

The Movie Review Analyzer is an innovative robotic process automation (RPA) solution developed using UiPath, designed to streamline the collection and analysis of Movie reviews from audience, including social media. This automation process leverages natural language processing (NLP) techniques to categorize feedback by sentiment—positive, negative, or neutral. By automating the data extraction and analysis stages, the system reduces manual effort, enhances accuracy, and delivers real-time insights into audience sentiments. The automation process enhances efficiency, enabling stakeholders—such as filmmakers, marketers, and critics—to gain valuable insights into audience preferences and film performance. The integration of this RPA solution represents a significant advancement in viewers experience management, enabling businesses to make informed decisions swiftly and effectively.

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ABBREVATION	ACCRONYM
RPA	Robotic Process Automation
AI	Artificial Intelligence

CHAPTER 1

INTRODUCTION

1.1 General

In today's data-driven world, the need for efficient and accurate analysis of large datasets is more critical than ever. Our project, the Movie Review Analyzer, leverages the advanced capabilities of robotic process automation (RPA) to enhance the evaluation of movie reviews. By utilizing UiPath Studios, we have developed an automated process that incorporates Excel for data input, ensuring seamless data management and analysis.

This report provides a comprehensive overview of our Movie Review Analyzer, detailing its design, functionality, and the innovative solutions implemented to address various challenges. By integrating automation with data analysis, our system is able to swiftly process and interpret extensive movie review datasets, offering valuable insights into audience sentiments and preferences. Through this project, we aim to demonstrate the transformative potential of RPA in the domain of movie review analysis.

1.2 Objective

The primary objective of the Movie Review Analyzer is to provide a seamless and automated results for the movie reviews by:

- Automate data extraction from Excel using UiPath Studios for efficient and accurate processing.
- Implement natural language processing techniques for clear interpretation of movie reviews.
- Streamline the review analysis process with RPA to reduce analysis time and effort.
- Deliver comprehensive and actionable insights through automated reports for informed decision making.

1.3 Existing System

In many organizations, the process of analyzing movie reviews is done manually or using basic tools like spreadsheets. This system has several limitations:

- **Manual Effort**: Requires continuous monitoring and input by personnel.
- **High Error Rate**: Prone to human errors such as misinterpretation of sentiments.

- **Inefficiency**: Consumes significant time and resources to analyze large volumes of reviews.
- **Lack of Scalability**: Difficult to handle a vast number of reviews efficiently.

This existing system often leads to delays in obtaining insights, affecting the ability to make timely and informed decisions about movie performance and audience preferences.

1.4. Proposed System

The proposed system automates the process of analyzing movie reviews using UiPath Studios.

Key features of the system include:

- **Automated Data Extraction**: The bot extracts movie review data from Excel sheets, eliminating manual data entry and reducing errors.
- **Sentiment Analysis**: Implements advanced sentiment analysis algorithms to classify and interpret the emotional tone of the reviews.
- **Dynamic Processing**: Automatically schedules and processes reviews at regular intervals to ensure up-to-date analysis.
- **Report Generation**: Compiles analyzed data into comprehensive reports, providing actionable insights into audience sentiments.

This proposed system addresses the inefficiencies of the existing manual review analysis methods, offering a reliable and automated solution to enhance the accuracy and efficiency of movie review interpretation.

CHAPTER 2
LITERATURE REVIEW

2.1 General

The importance of movie review analysis in understanding audience preferences and guiding industry decisions has been extensively documented in the literature. Reviews provide valuable insights into viewer sentiments and trends, making their thorough analysis critical for the success of film projects and marketing strategies. Traditional approaches to review analysis, while functional, often struggle to keep up with the sheer volume of reviews, especially in an era of instant online feedback and social media influence.
Robotic Process Automation (RPA) has emerged as a transformative technology in recent years, revolutionizing industries by automating repetitive and rule-based tasks. By leveraging RPA tools like UiPath Studios, analysts can reduce manual intervention, improve accuracy, and enhance efficiency in various domains, including review analysis.

Key studies and articles on review analysis and RPA emphasize:

- **Challenges of Manual Systems**: Researchers have highlighted the inefficiencies of manual review tracking, such as human error, delays, and increased administrative costs.

- **Impact of Automation**: Studies demonstrate that automated systems lead to significant improvements in accuracy, operational speed, and resource allocation.

- **RPA in Review Analysis**: Case studies illustrate the effective use of RPA in processing reviews, generating reports, and ensuring timely analysis of viewer feedback.

The Movie Review Analyzer is a practical application of these insights. By automating the review analysis process, the system aligns with research advocating the use of RPA for enhanced productivity and streamlined workflows in the film industry.

CHAPTER 3

SYSTEM DESIGN

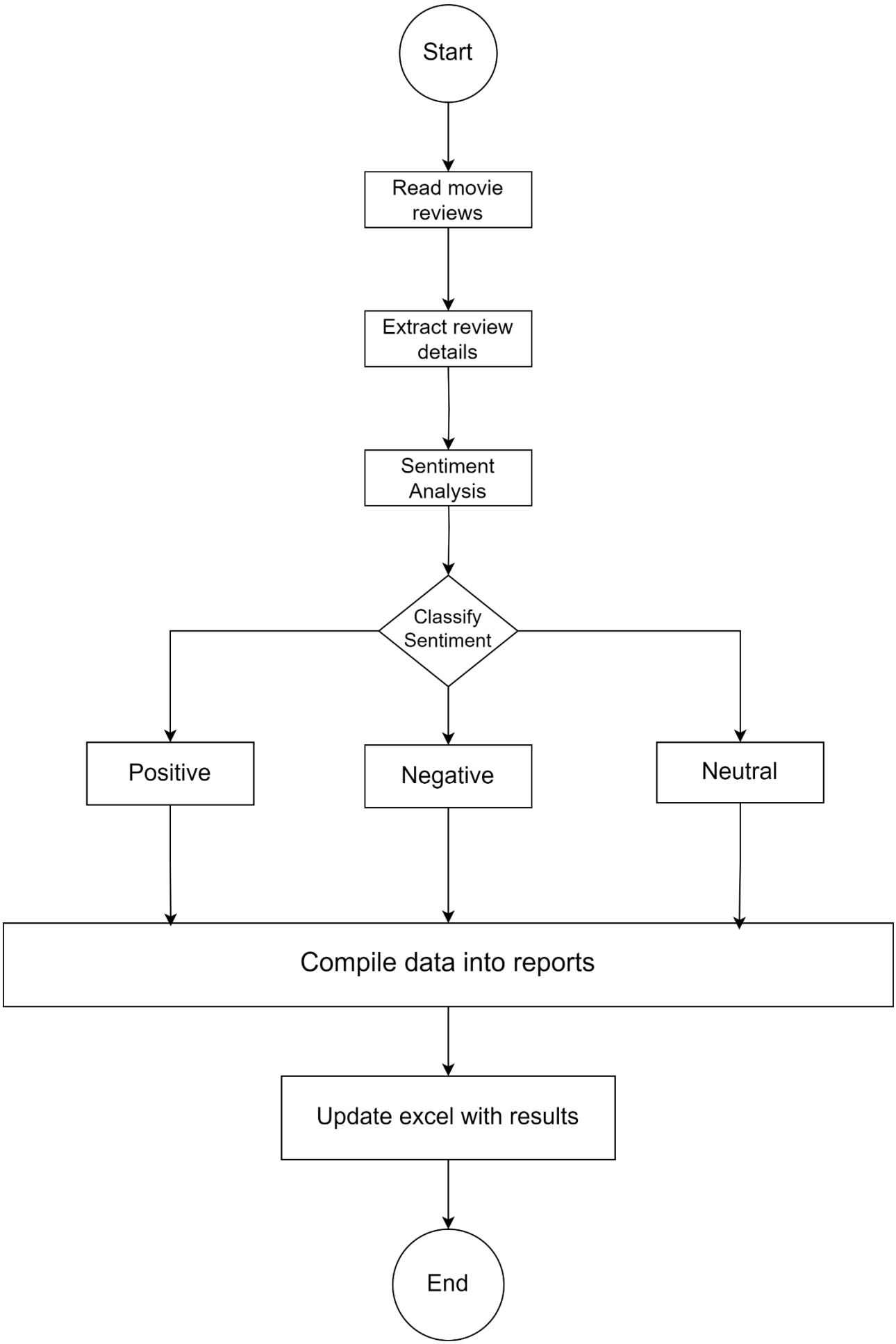
3.1 General

The system design section outlines the structural and functional components of the Movie Review Analyzer. It provides a detailed description of the system's architecture, the flow of operations, and the sequence of activities that ensure timely contract renewal reminders. The system design ensures that the bot operates efficiently, accurately, and reliably, leveraging UiPath Studio's capabilities.

3.1.1 System Flow Diagram

The System Flow Diagram represents the overall workflow of the Movie Review Analyzer, illustrating the key steps involved from data input to movie reviews.

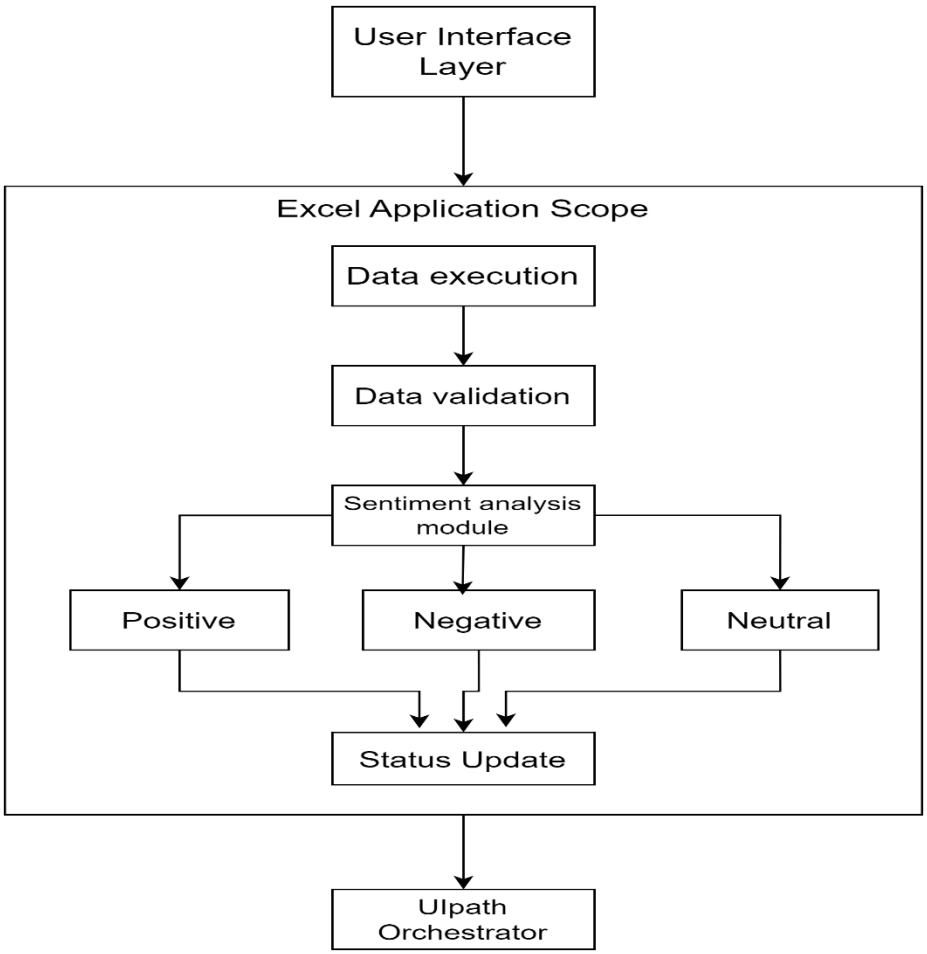
- Data Input: The process begins with reading movie review data from an Excel file.
- Data Processing: The bot processes each review to extract relevant information of text.
- Sentiment Analysis: The bot applies sentiment analysis to categorize reviews based on sentiment and other criteria.
- Classify Sentiment: The bot compiles the analyzed data into positive, negative or neutral.
- Status Update: The bot updates the Excel file with the status of analysis results and status of each processed review.


Start
Read movie reviews
Extract review details
Sentiment Analysis
Classify Sentiment
Positive
Negative
Neutral
Compile data into reports
Update excel with results
End

3.1.2 Architecture Diagram

The Architecture Diagram provides a high-level view of the system components and their interactions. It showcases the integration of UiPath Studio and Excel for data management.

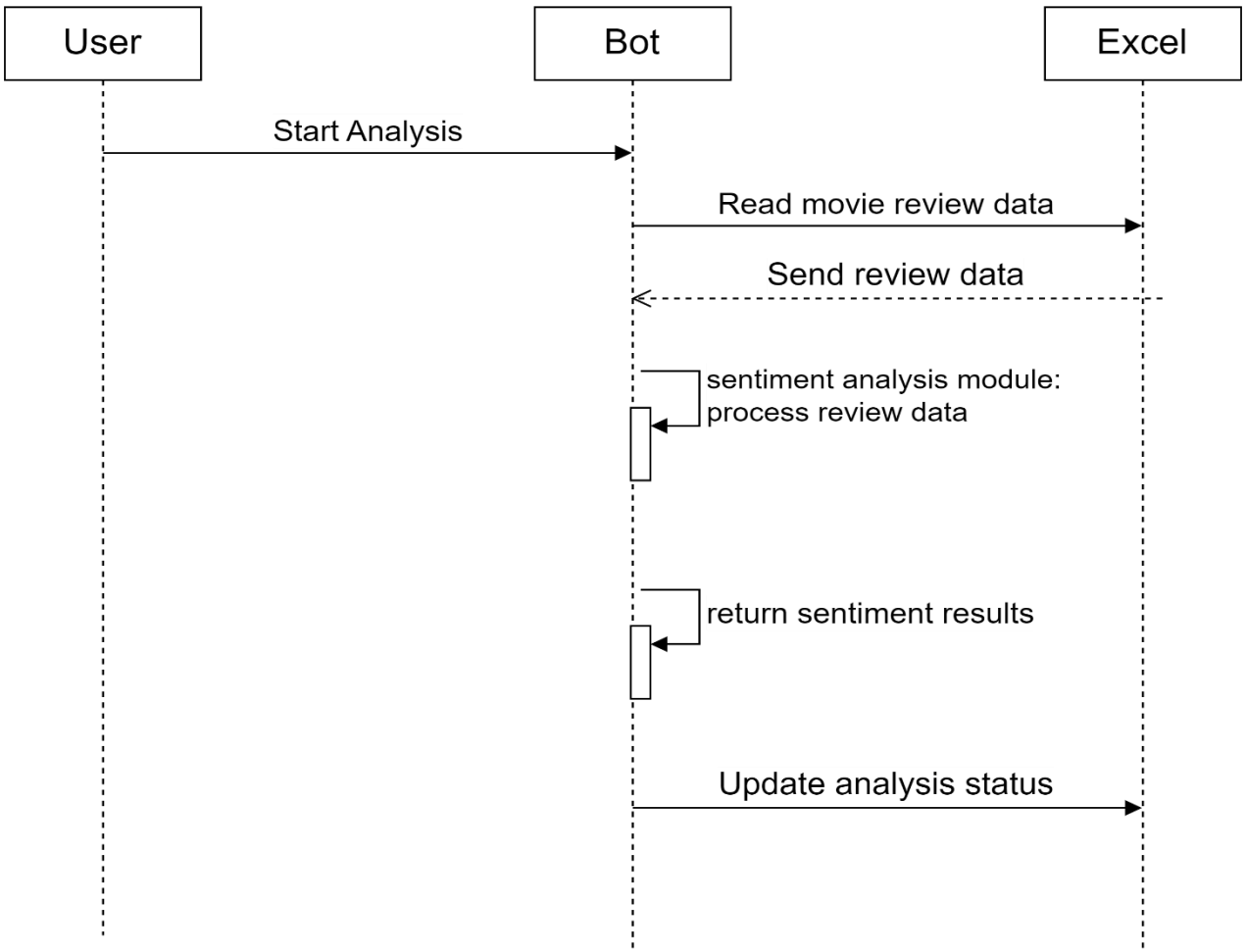
- User Interface Layer: Central platform for developing and managing the automation workflow.
- Excel: Stores movie review data and tracks the status of the analysis.
- Sentiment Analysis Module: Processes the movie reviews to determine their sentiment (positive, negative, neutral).
- Report Generation: Compiles the analyzed data into comprehensive reports.
- Triggers and Scheduler: Configured in UiPath Orchestrator to run the automation at specified intervals.
- Error Handling: Ensures the system logs errors and continues processing the next review.



3.1.3 Sequence Diagram

The Sequence Diagram depicts the step-by-step interaction between the bot and the system components for analyzing movie reviews.

- Bot Initialization: The bot starts the process based on the scheduled trigger.
- Read Excel Data: The bot reads movie review data from the Excel file.
- Process Review: For each review, the bot extracts some relevant details like texts.
- Evaluate Conditions: The bot performs sentiment analysis to determine if the review is positive, negative, or neutral.
- Update Excel: The bot updates the Excel file to reflect the analysis results for each review.
- Loop to Next Review: The process continues for the next review until all are processed.



CHAPTER 4

PROJECT DESCRIPTION

4.1 Methodology

The methodology section explains the approach adopted to develop the Movie Review Analyzer. This project follows a structured approach to ensure efficiency, reliability, and scalability. The development process is divided into clearly defined stages:

1. Requirement Analysis
   - Gathered details of the movie review data and determined the key aspects to analyze.
   - Identified system integration points, such as Excel for data management.
2. System Design
   - Designed the overall workflow, including data reading, processing, sentiment analysis, and updates to the Excel sheet.
   - Created flow diagrams and architectural layouts to visualize the system's functioning.
3. Development
   - Utilized UiPath Studio for developing the automation workflow.
   - Integrated Excel Application Scope for handling movie review data.
   - Configured sentiment analysis algorithms to classify reviews based on emotional tone.
4. Testing and Validation
   - Tested the system with different sets of movie review data to ensure accurate sentiment analysis and data processing.
   - Validated the system’s ability to handle errors, such as missing data or inconsistencies.
5. Deployment and Scheduling
   - Published the automation workflow to UiPath Orchestrator.
   - Scheduled daily triggers to ensure consistent monitoring and reminders.
6. Maintenance
   - Established monitoring and logging mechanisms to track the system's performance.
   - Periodically updated the system to accommodate changes in the contract data format or new analytical requirements.

4.1.1 Modules

The project is divided into the following modules:

1. Data Input Module
    - Purpose: Reads movie review data from an Excel file.
    - Implementation: Utilizes the Excel Application Scope and Read Range activities in UiPath Studio.
2. Reminder Interval Calculation Module
    - Purpose: Extracts relevant details such as review text
    - Implementation: Uses various activities to process and organize the extracted data for analysis.
3. Sentiment Analysis Module
    - Purpose: Analyzes the sentiment of each movie review to classify it as positive, negative, or neutral.
    - Implementation: Applies sentiment analysis algorithms and incorporates If and Else If activities for classification.
4. Status Update Module
    - Purpose: Updates the Excel file with the analysis results and status of each processed review.
    - Implementation: Uses the Write Cell activity to update specific rows and columns.
5. Scheduler and Trigger Module
    - Purpose: Automates the regular execution of the analysis workflow.
    - Implementation: Configures triggers in UiPath Orchestrator to run the bot at specified intervals, ensuring up-to-date analysis.

CHAPTER 5
OUTPUT SCREENSHOT

	A	B
1	**Movie Reviews**	**Results**
2	though I can't say I'm a soccer fan. But watching this just filled my heart with joy, and I had a great time in the movies watching it. BjÃ¸rn Fast Nagell does a tremendous job directing this movie, and even though you notice the main characters are new at acting, they grow with the movie and makes it what it is. Even though it is supposed to be a soccer movie, there is surprisingly little soccer in it. The whole idea is to show the six guys making up the word N O R W A Y on their trip to the World Cup in soccer playing in Germany this year. If you're only gonna see one Norwegian movie this year, this is the one..	Neutral
3	was prepared for the possibility that this would be awful, but the script (or lack thereof) makes for a film that's also pointless. On the plus side, the general level of craft on the part of the actors and technical crew is quite competent, but when you've got a sow's ear to work with you can't make a silk purse. Ben G fans should stick with just about any other movie he's been in. Dorothy S fans should stick to Galaxina. Peter B fans should stick to Last Picture Show and Target. Fans of cheap laughs at the expense of those who seem to be asking for it should stick to Peter B's amazingly awful book, Killing of the Unicorn.	Positive
4	film moves very slowly, but constantly keeps you watching. Modern Love worked well in the Gold Coast Film Fantastic program this year offering audiences a glimpse at an Australian Cinema that is usually neglected. Most importantly it is refreshing to see Australian cinema not taking on the clichÃ© Aussie characters and story lines we have seen done to death over the years. This film would compliment any festival and will open debate after its screenings. The performances and characters are well developed, and the cinematography is fantastic. An interesting exploration into family relationships, and environments.	Positive
5	wait for the video release. My expectations where high but they where in no way disappointed. As always with Ang Lee there is fantastic acting, an intelligent and thrilling plot that has you guessing right till the end and superb filming. Along with Unforgiven this is easily one of the two best westerns of the 90's. People who expect something along the line of Mel Gibson in The Patriot(corny) or Braveheart(acceptable) will be sourly disappointed, all others who appreciate the above mentioned qualities will have a fantastic time watching it. 9 out of 10.	Positive
6	say it is one of the most boring films I've ever seen. And the acting is very bad. The boy who plays the main character really annoys me, he's got the same expression on his face through out the movie. I just want to slap him! Basically 80% of the movie is slow motion shots of skateboarders, weird music, and utter sh*t.. Apparently I've got to write at least 10 lines of text to submit this comment, so I'll use up a few more lines by saying the lead character has got one of those faces you just want to slap! Meh i give up..THIS MOVIE SUCKS !!!!	Negative

CHAPTER 6
CONCLUSION

The **Movie Review Analyzer** project revolutionizes the analysis of movie reviews by leveraging UiPath's Robotic Process Automation (RPA) to address the challenges of manual data processing and sentiment analysis. This innovative solution streamlines the review evaluation process, ensuring consistency, efficiency, and accuracy.

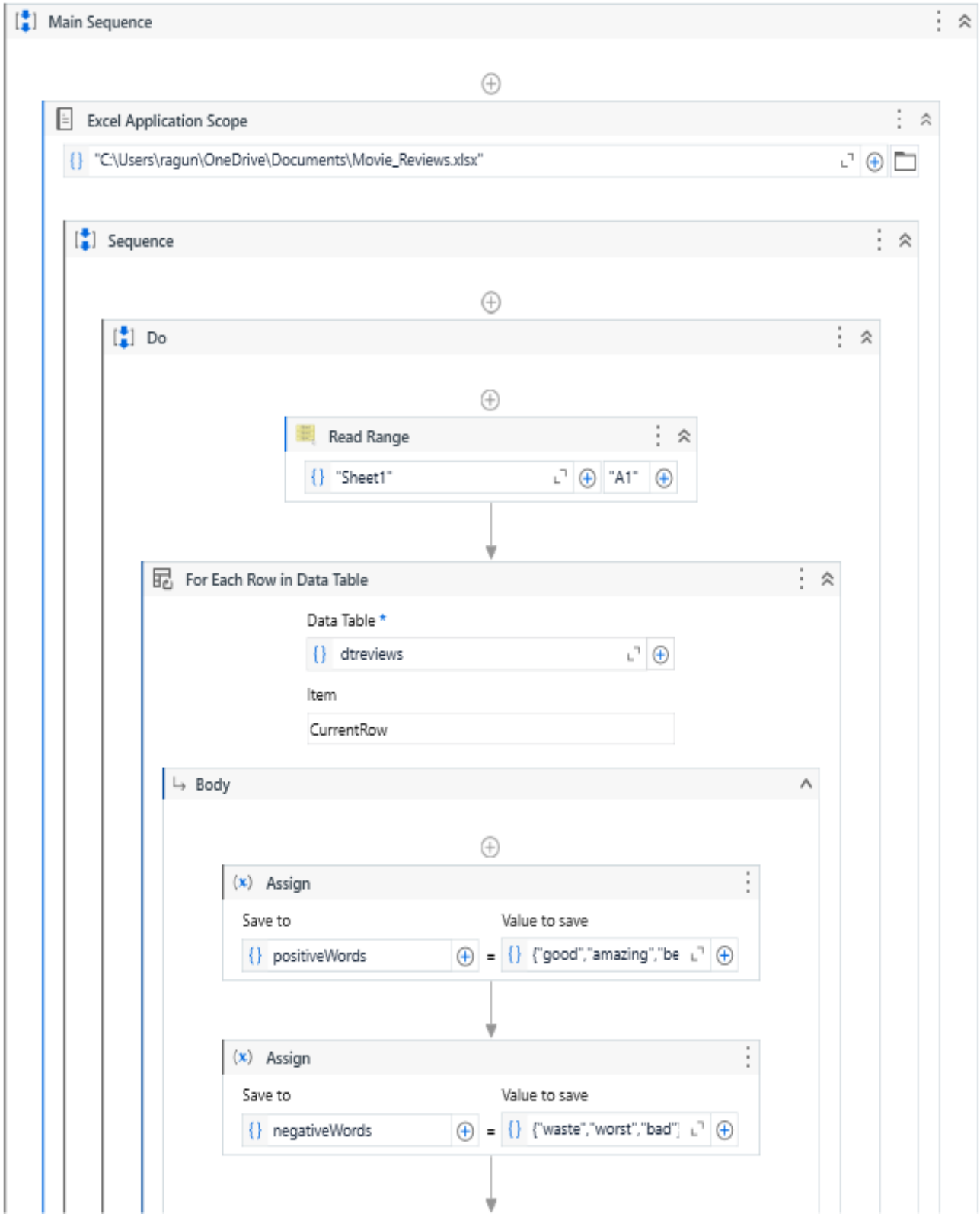
The project's real-time updates enhance transparency during analysis, providing stakeholders with a user-friendly interface for systematic documentation in Excel reports. By automating repetitive tasks, the analyzer frees stakeholders to focus on more nuanced aspects of review interpretation and decision-making.

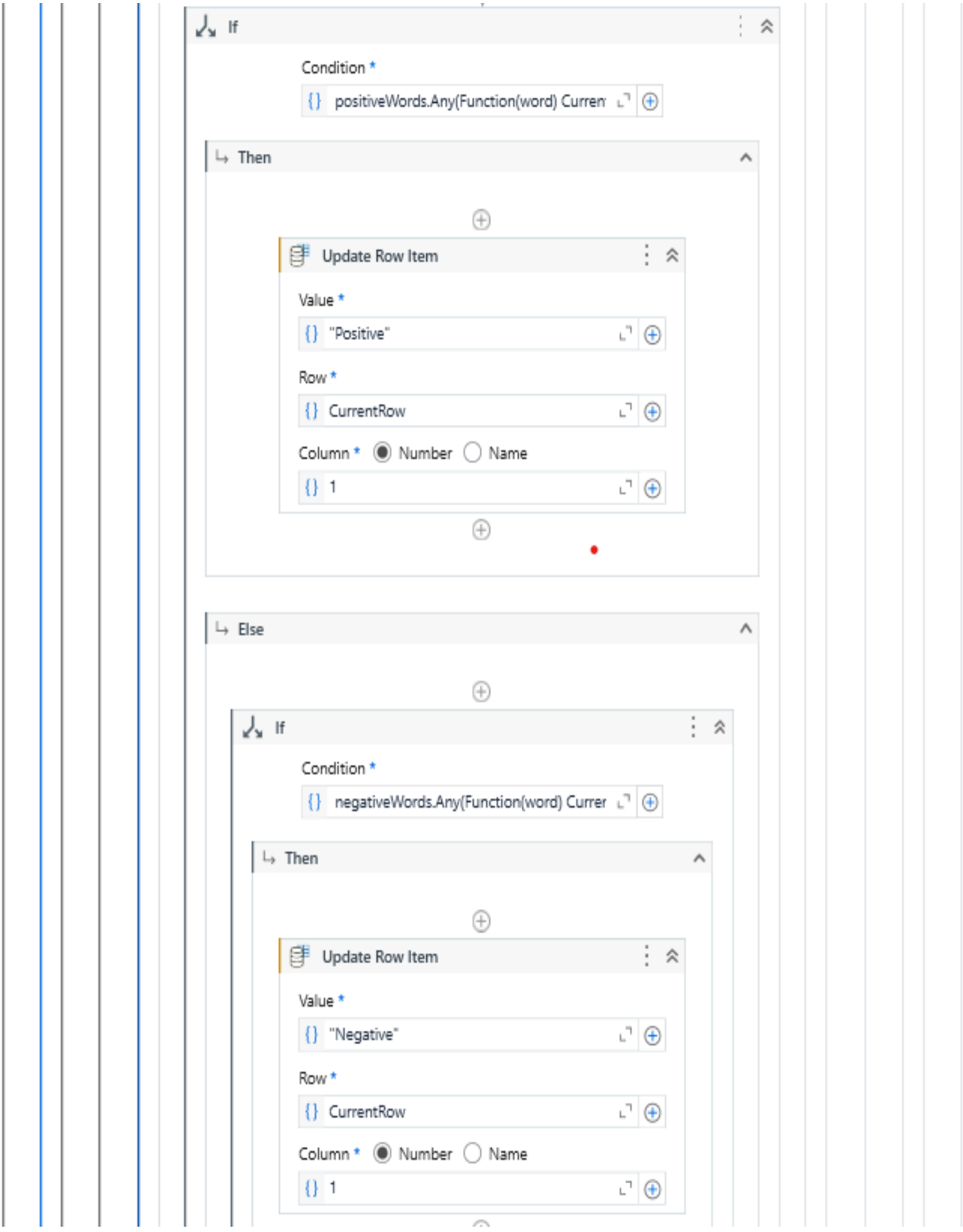
Despite its efficiency, the system may face challenges in contexts requiring deep contextual understanding and nuanced judgment. Ongoing algorithm updates are crucial to keep pace with evolving review trends and audience sentiments. Nonetheless, the project lays a foundation for automated review analysis, contributing to broader discussions about AI in the entertainment industry. The successful implementation marks a significant advancement in leveraging technology to gain valuable insights and make informed decisions based on audience feedback.

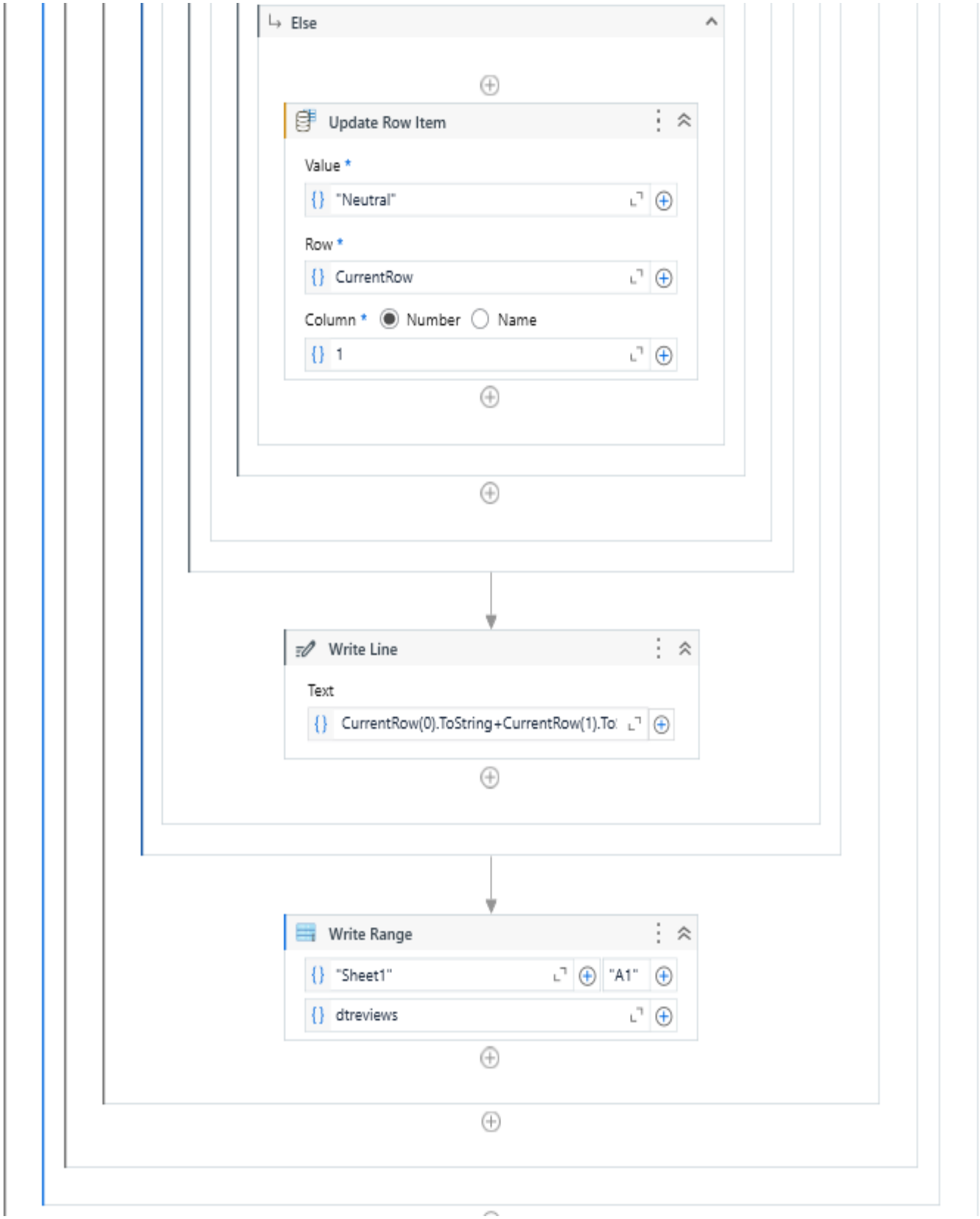
The **Movie Review Analyzer** not only enhances the review analysis process but also contributes to better time management, resource optimization, and effective sentiment analysis within the organization. This project showcases the potential of RPA in automating analytical tasks and improving operational efficiency. Future enhancements may include further integrations with other analytical tools, expansion of sentiment analysis capabilities, and advanced reporting features to track and analyze review trends more comprehensively.

APPENDIX

PROCESS WORKFLOW




If
Condition *
positiveWords.Any(Function(word) Curren
Then
Update Row Item
Value *
"Positive"
Row *
CurrentRow
Column * Number Name
1
Else
If
Condition *
negativeWords.Any(Function(word) Currer
Then
Update Row Item
Value *
"Negative"
Row *
CurrentRow
Column * Number Name
1


Else
Update Row Item
Value *
"Neutral"
Row *
CurrentRow
Column * Number Name
1
Write Line
Text
CurrentRow(0).ToString+CurrentRow(1).To
Write Range
"Sheet1"
"A1"
dtreviews

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These references should provide a strong foundation for your project, covering both the theoretical aspects of sentiment analysis and practical implementation using UiPath and RPA technologies.