WEBPAGE CREATOR BOT

A MINI-PROJECT REPORT

Submitted By

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in partial fulfilment for the course

OAI1903 - INTRODUCTION TO ROBOTIC PROCESS AUTOMATION

for the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

RAJALAKSHMI ENGINEERING COLLEGE

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NOV/DEC,2024

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BONAFIDE CERTIFICATE

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

ACKNOWLEDGEMENT

Initially we thank the Almighty for being with us through every walk of our life and showering his blessings through the endeavour to put forth this report. Our sincere thanks to our Chairman **Thiru. S. Meganathan, B.E., F.I.E.,** our Vice Chairman **Mr. M. Abhay Shankar, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) Thangam Meganathan, M.A., M.Phil., Ph.D.,** for providing us with the requisite infrastructure and sincere endeavouring in educating us in their premier institution.

Our sincere thanks to **Dr. S. N. Murugesan, M.E., Ph.D.,** our beloved Principal for his kind support and facilities provided to complete our work in time. We express our sincere thanks to **Dr. P. Kumar, M.E., Ph.D.,** Professor and Head of the Department of Computer Science and Engineering for his guidance and encouragement throughout the project work. We convey our sincere and deepest gratitude to our internal guides, **Mrs. J. Jinu Sophia, M.E., Ph.D.,** Assistant Professor (SG) Department of Computer Science and Engineering for their valuable guidance throughout the course of the project. We are very glad to thank our Project Coordinator Professor, **Dr. N. Duraimurugan, M.E., Ph.D.,** Associate Professor and **Mr. B. Bhuvaneswaran, M.E.,** Assistant Professor (SG), Department of Computer Science and Engineering for their useful tips during our review to build our project.

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ABSTRACT

Webpage Creator Bot Using UiPath Studio and UiPath Gen AI Activities

This project presents the design and development of a "Webpage Creator Bot" utilizing UiPath Studio and its innovative Gen AI activities. The bot automates the process of creating dynamic and visually appealing web pages, streamlining a task that typically requires technical expertise in web development. By leveraging UiPath's capabilities in automation and generative AI, the bot provides a no-code or low-code solution, making webpage creation accessible to a broader audience.The bot operates in a three-phase workflow:Using UiPath Gen AI activities, the bot generates engaging textual content tailored to the user's input or predefined prompts. It also creates ideas for headers, paragraphs, and call-to-action sections, ensuring the webpage is compelling and SEO-friendly.The bot dynamically constructs a webpage layout by integrating HTML, CSS, and multimedia elements. It can incorporate user-supplied assets, such as images and logos, or generate placeholders for future customization. Through Gen AI activities, the bot also suggests suitable themes, color palettes, and design templates based on the user's preferences.The bot saves the webpage as a locally hosted file or uploads it to a live server. It ensures compliance with responsive design standards, making the webpage suitable for various devices.The use of UiPath Gen AI activities enhances the bot's ability to produce creative and contextually relevant outputs, significantly reducing the time and effort required for webpage creation. This project highlights the versatility of UiPath Studio in automating complex workflows that intersect creative and technical domains.The Webpage Creator Bot is a practical tool for businesses, individuals, and organizations that require rapid webpage development without specialized programming skills. This innovative use of UiPath Studio exemplifies the potential of automation and AI in democratizing creative processes.

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LIST OF ABBREVIATIONS

Abbreviation	Full Form
SMTP	Simple Mail Transfer Protocol
RPA	Robotic Process Automation
GPT	Generative Pre-trained Transformer
API	Application Programming Interface
XML	Extensible Markup Language
JSON	JavaScript Object Notation
ML	Machine Learning

CHAPTER - 1

INTRODUCTION

1.1 GENERAL

The **Webpage Creator Bot** is an automation solution developed using UiPath Studio and UiPath Gen AI activities to simplify and streamline the process of creating professional, responsive web pages. Designed for users of all skill levels, this bot automates key tasks such as content generation, layout design, and deployment, allowing users to quickly produce customized web pages without coding or design expertise. By leveraging generative AI, it generates engaging text and design suggestions tailored to user input, while ensuring responsive layouts optimized for various devices. The bot caters to businesses and individuals needing cost-effective, rapid webpage creation, and exemplifies UiPath Studio's potential to merge automation, AI, and creativity for solving technical and creative challenges.

1.2 OBJECTIVE

The primary objective of the **WebPage Creator Bot** project is to automate the process of creating a simple html page with css using artificial intelligence, and providing a efficient and reactive web page in a seamless and efficient manner.

1. **Automate Webpage Creation**: Simplify the process of designing and building responsive web pages by automating tasks like content generation, layout design, and deployment.
2. **Enhance Accessibility**: Provide a no-code solution that allows users without technical expertise to create professional-quality web pages quickly and efficiently.
3. **Leverage Generative AI**: Utilize UiPath Gen AI activities to generate engaging textual content, suggest creative design elements, and optimize layouts for diverse use cases.
4. **Ensure Cost and Time Efficiency**: Reduce the time, effort, and cost associated with traditional webpage development, enabling rapid prototyping and deployment for individuals and businesses.

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1.3 EXISTING SYSTEM

Existing Systems for Webpage Creator Bot

1. **Traditional Web Development Tools**:
    - Tools like Adobe Dreamweaver, Microsoft FrontPage, or manual coding with HTML, CSS, and JavaScript are widely used for webpage creation. These require significant technical expertise and time investment, making them inaccessible to users without programming knowledge.
2. **Content Management Systems (CMS)**:
    - Platforms like WordPress, Wix, and Squarespace offer user-friendly interfaces to create and manage web pages. While they simplify the process, they often rely on predefined templates and may lack customization flexibility or automation in content generation.
3. **Low-Code/No-Code Platforms**:
    - Tools like Bubble, Webflow, and OutSystems provide visual interfaces for building web applications and pages without extensive coding. However, they primarily focus on design and deployment, often leaving content creation and layout suggestions to the user.
4. **Standalone AI Content Generators**:
    - AI-powered tools like ChatGPT or Jasper AI can generate text for web pages, but they are not integrated with design tools, requiring users to manually incorporate generated content into a webpage layout.

Limitations of Existing Systems:

- Manual or semi-automated content generation increases effort and time.
- Separate tools for content creation, design, and deployment create inefficiencies.
- Lack of integration between automation workflows and AI-driven creativity.

These gaps in existing systems highlight the need for a unified solution like the Webpage Creator Bot, which integrates automation and generative AI into a seamless, no-code platform for end-to-end webpage creation.

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1.4 PROPOSED SYSTEM

The **Webpage Creator Bot** is a comprehensive automation solution designed to simplify the process of creating professional-quality web pages by integrating UiPath Studio's automation capabilities with UiPath Gen AI activities. This proposed system addresses the limitations of existing tools by providing a unified, no-code platform that automates content creation, layout design, and deployment processes.

1. **End-to-End Automation**:
    a. Automates the entire webpage creation process, from collecting user inputs to generating and publishing the final webpage.
2. **Generative AI Integration**:
    a. Utilizes UiPath Gen AI activities to generate text for headers, body content, and call-to-action sections.Suggests creative layouts, themes, and design elements tailored to user preferences or industry standards.
3. **Customizable User Inputs**:
    a. Allows users to specify content themes, preferred color palettes, multimedia assets, and layout structures, ensuring personalized webpage outputs.
4. **Responsive and Accessible Design**:
    a. Produces web pages optimized for all device types, including desktops, tablets, and smartphones.

This proposed system aims to improve the career recommendation process by making it more efficient, personalized, and accessible, ultimately providing a better user experience compared to traditional methods.

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LITERATURE REVIEW

2.1 GENERAL

The literature review for the **Webpage Creator Bot** explores existing web development tools, including **CMS** like WordPress and **low-code platforms** such as Webflow, which simplify design but still rely on manual content creation. AI-powered tools like Jasper and ChatGPT enhance content generation but lack design and deployment integration. The review highlights **UiPath Studio's** potential to combine automation and **UiPath Gen AI** for an innovative, no-code solution that automates content generation, layout design, and deployment, providing a seamless end-to-end webpage creation process.

1. **ContentManagementSystems(CMS)**:
   Content Management Systems like **WordPress**, **Wix**, and **Squarespace** have been widely used for webpage creation due to their user-friendly interfaces. These platforms simplify the design and management of websites, making them accessible to non-technical users. However, they often require users to manually add content and rely on predefined templates, limiting customization and creative freedomow-Code/No-Code Platforms**:
   Low-code and no-code platforms, such as **Webflow**, **Bubble**, and **OutSystems**, enable users to create websites and applications with minimal or no coding. These platforms are powerful for visually designing websites but still require users to manually add content and handle certain customization tasks. These platforms also often lack AI-driven content generation or integrated automation for layout and design suggestions .
2. **ContentGeneration**:
   AI tools like **GPT-3**, **Jasper**, and **Copy.ai** have revolutionized content generation by automating the creation of text for web pages. These tools can produce high-quality, contextually relevant content in a fraction of the time it takes humans. However, they do not offer integrated design tools or handle webpage layout, making them less efficient for users who require both content and design automation .
3. **UiPathStutomation**:**UiPath Studio** is a leading tool in Robotic Process Automation (RPA), used to automate repetitive tasks across various business processes. Studies have shown its potential to integrate AI with automation for creative tasks, such as webpage creation. By combining RPA with **UiPath Gen AI** activities, UiPath Studio can streamline tasks like content generation, layout design, and deployment in a unified automation environment .
4. **AIandWebDesign**:
   Research into the integration of AI in web design suggests that **Generative Design** and AI-powered tools can automate and optimize the design process, adapting layouts based on user preferences or content requirements. AI tools can recommend colors, fonts, and page structures to ensure aesthetically pleasing and user-friendly webpages. However, most systems still require significant human input for content generation and design refinement .

5. **End-to-EndWebDevelopment**
   A review of end-to-end webpage creation solutions indicates that while platforms like **Webflow** and **Bubble** provide design and deployment automation, they often lack the integration of AI-driven content generation and detailed layout suggestions. Combining content generation with automation and AI, as proposed in this project, would fill this gap and provide a seamless, no-code platform for users to easily create dynamic, personalized websites .

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SYSTEM DESIGN

3.1 SYSTEM FLOW DIAGRAM

The system flow diagram for the Webpage creator bot project outlines the essential steps involved in generating a html web page. The process begins with the user entering the title of their html webpage to be created through an input dialog. The system validates the user input, ensuring that all necessary information is provided. The valid data is then sent to an AI model (GPT-3.5-turbo) for webpge creation, where it generates appropriate codes for html and css for the webpage based on the provided information. The output written into a new html file using a"write text file" activity from uipath studio.Then the workflow encounters a start process activity where the html webpage is open in a browser.

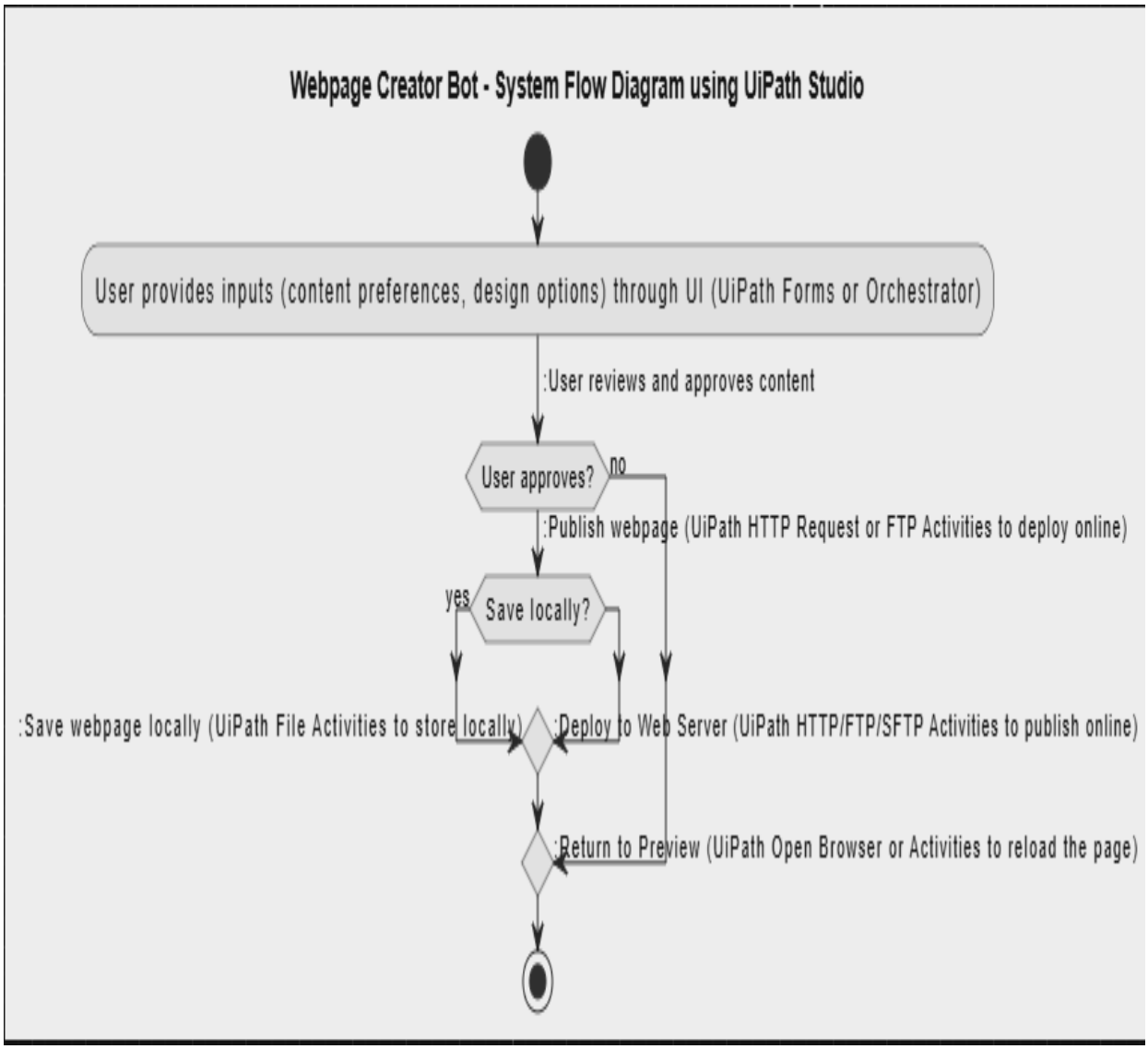

Figure 1 SYSTEM FLOW DIAGRAM

3.2 ARCHITECTURE DIAGRAM

The architecture diagram illustrates the automated career path prediction workflow:

1. **Input:** The user provides thetitle of the project through interactive input dialogs.
2. **Data Processing:** The system collects the user inputs and validates the data.
3. **AI Analysis:** The validated data is sent to OpenAI's GPT-3.5-turbo for career analysis and suggestions based on the user's profile.
4. **Write into File:** The output code is written into a new html file and saved locally

This architecture efficiently automates the process of Creating a webpage by integrating RPA, AI to deliver accurate, timely Webpages to the user.

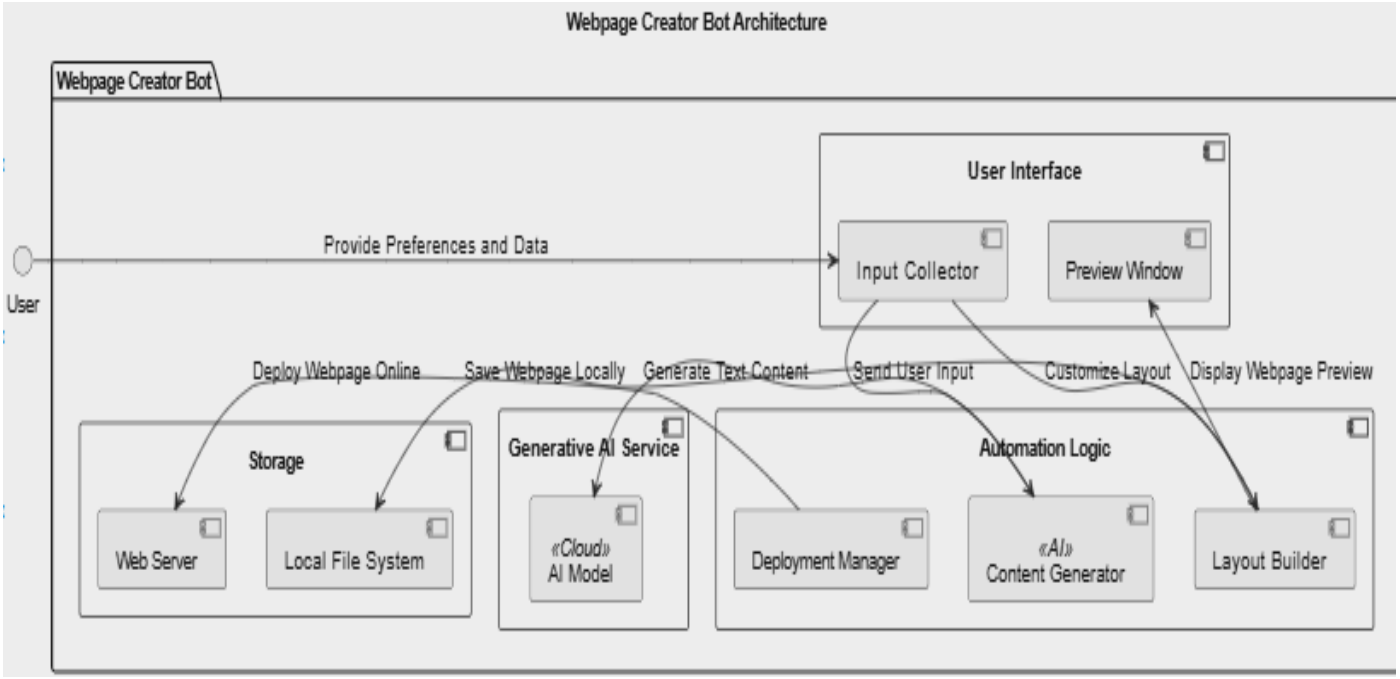

Figure 2 ARCHITECTURE DIAGRAM

3.3 SEQUENCE DIAGRAM

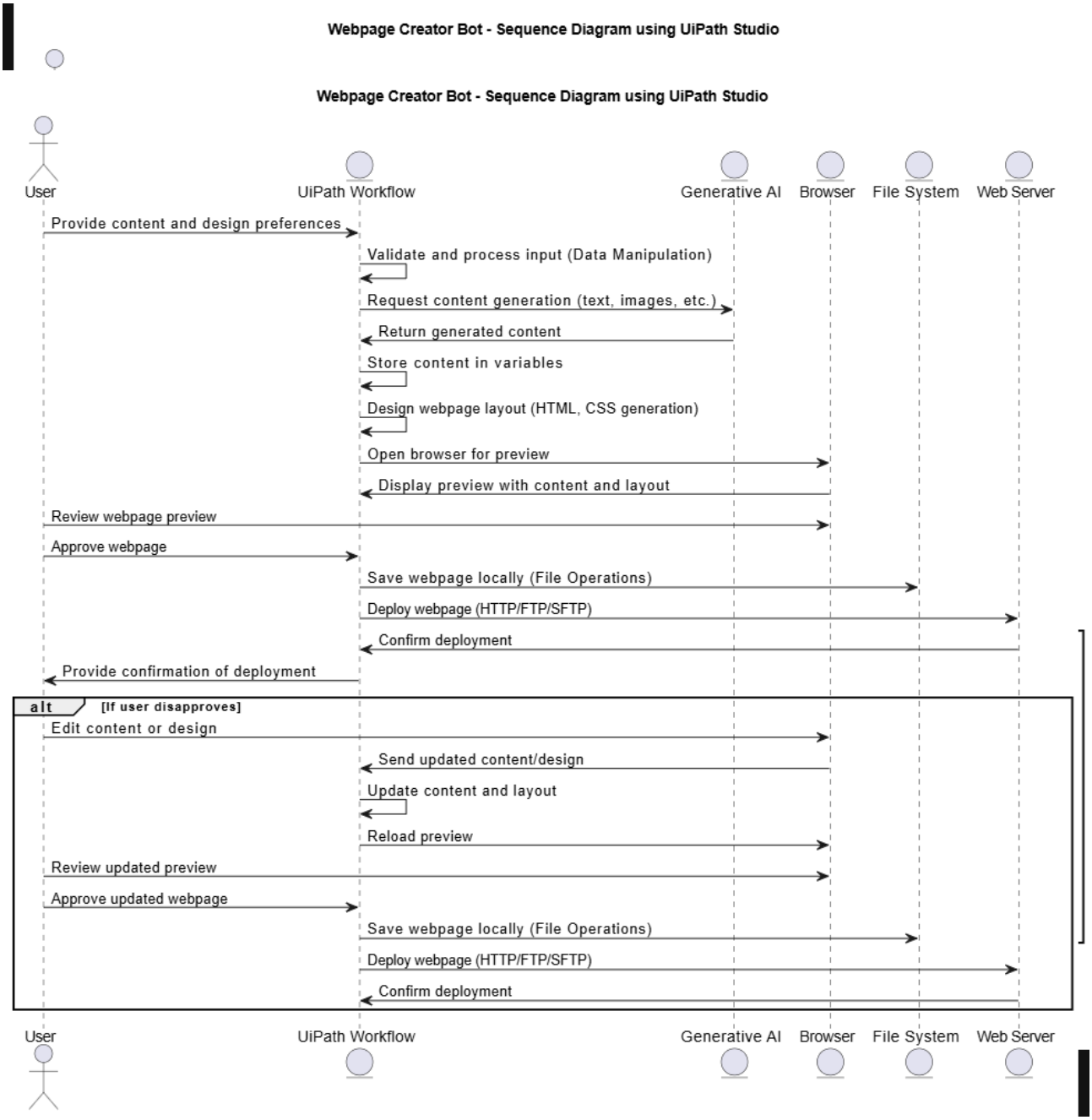

Figure 3 SEQUENCE DIAGRAM

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PROJECT DESCRIPTION

4.1 METHODOLOGIES

The **Webpage Creator Bot** project adopts an **Agile methodology** for iterative development, allowing for flexibility and continuous feedback throughout the development process. The project utilizes **UiPath Studio** for process automation, leveraging **Robotic Process Automation (RPA)** to automate tasks such as content generation, layout design, and webpage deployment. **UiPath Gen AI activities** are integrated to automate content creation using AI, enhancing efficiency and creativity. A **no-code approach** is employed to ensure the tool is user-friendly, enabling individuals without coding expertise to easily create web pages. The system follows a **user-centered design** methodology, prioritizing the user experience by allowing seamless inputs and real-time preview of generated webpages. Regular testing and refinement cycles are incorporated, ensuring the solution is scalable, reliable, and meets user needs.

4.1.1 MODULES

1. Getting User Input

- **Module Description**: This module collects input from the user regarding content preferences and design specifications for the webpage. The inputs may include text content (e.g., headings, paragraphs, images), preferred color schemes, layout preferences (e.g., header, footer, sidebar), and other details related to the design.
- **Implementation**:
    - **UiPath Forms** can be used to create a user-friendly interface where users enter their content and design preferences.
    - The inputs are validated and processed using UiPath **Data Manipulation** activities, ensuring that they are in the correct format for the next steps.

2. Using Gen AI Activities to Get the Code

- **Module Description**: This module leverages **UiPath Gen AI** activities to automatically generate content and HTML/CSS code based on the user's inputs. The AI model interprets the user-provided preferences and creates relevant content, layout suggestions, and code.
- **Implementation**:
    - **UiPath Gen AI** activities such as **Generate Text** and **Generate Code** are used to create the HTML code and CSS styles dynamically based on the user’s inputs.
    - The AI generates structured HTML content for the webpage, including text content, images, and appropriate styling (CSS), ensuring a visually appealing layout.

3. Writing the Output Code in an HTML File

- **Module Description**: This module is responsible for writing the generated HTML code and CSS into an HTML file that can be opened in a web browser.
- **Implementation**:
    - **UiPath File Activities** like **Write Text File** or **Append to Text File** are used to save the generated HTML code into an `.html` file.
    - The HTML file is saved in a specified folder or directory on the local machine or cloud storage, ensuring it is easily accessible for future use.

4. Opening the HTML File in a Browser

- **Module Description**: Once the HTML file is generated and saved, this module automatically opens the file in a web browser for the user to preview and verify the webpage layout.
- **Implementation**:
    - **UiPath Open Browser** activity or **Start Process** activity is used to open the saved HTML file in the default browser or a specified browser (e.g., Chrome, Firefox).
    - The **Open Browser** activity can be configured to open a specific file path, enabling users to view the rendered webpage instantly.

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OUTPUT SCREENSHOTS

5.1 IMPLEMENTATION WORKFLOW

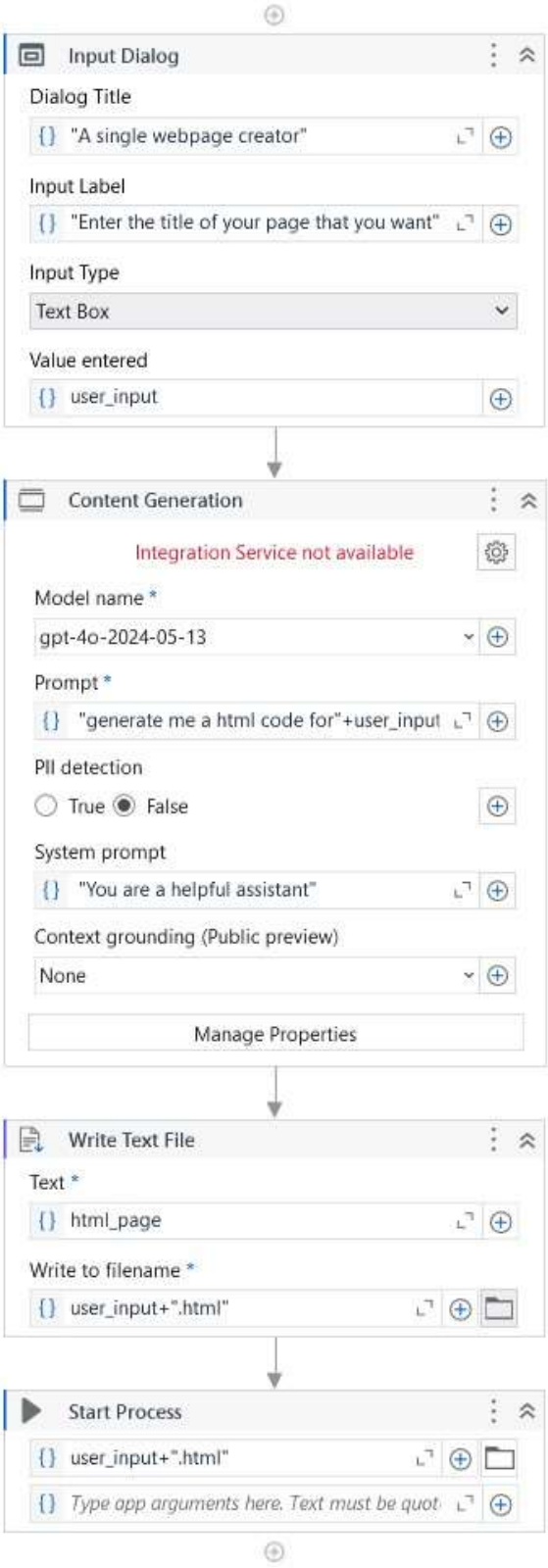


Figure 4.1 IMPLEMENTATION WORKFLOW

5.2 INPUT DIALOG

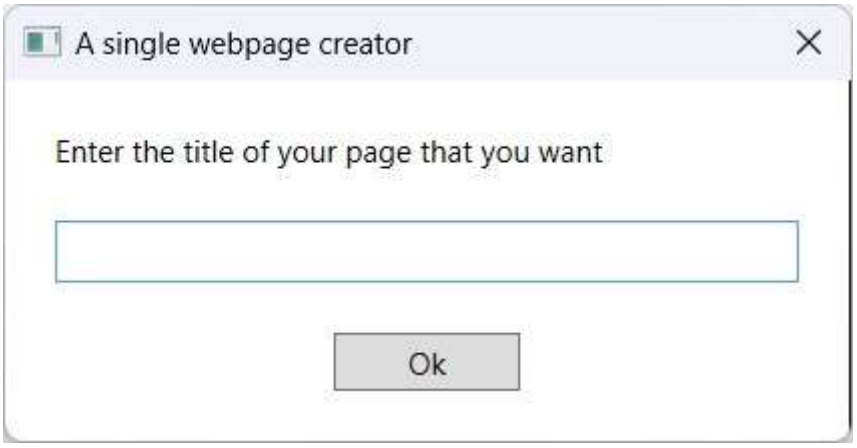
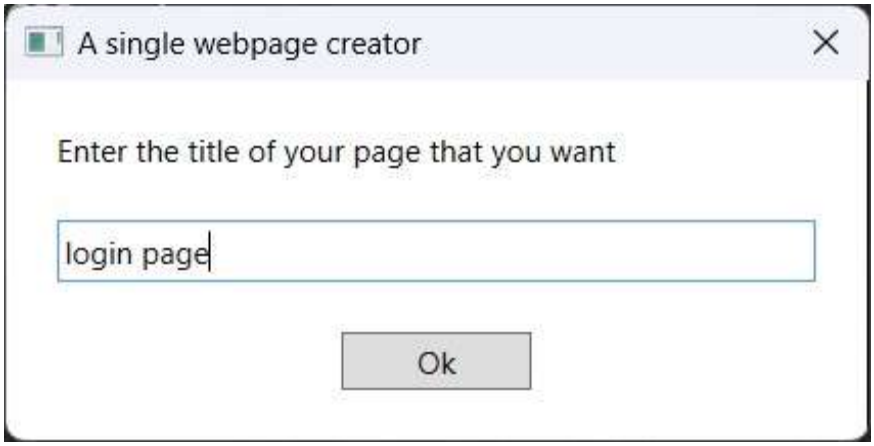


Figure 4.2 INPUT DIALOG

5.3 INPUTTING TITLE



5.4 OUTPUT

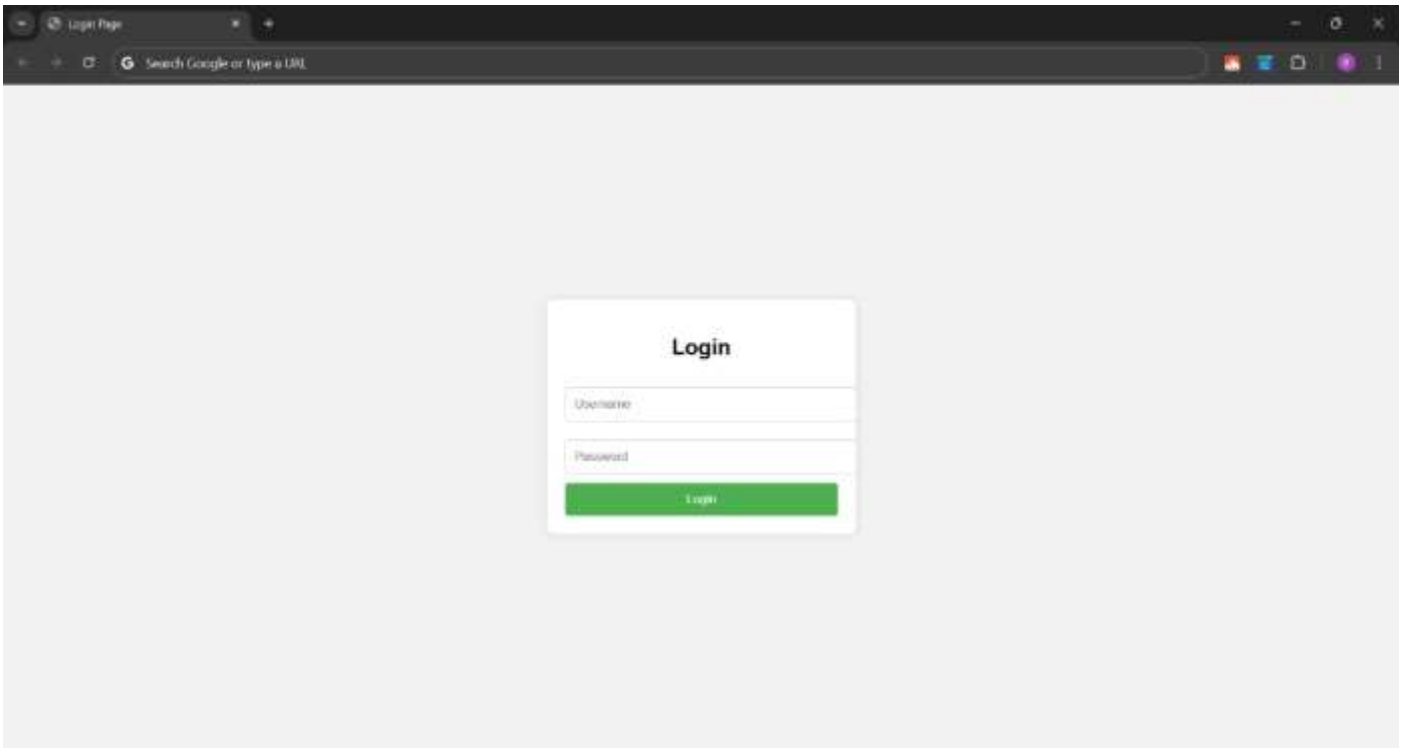


Figure 4.6 OUTPUT CAREER PATH THROUGH MAIL

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CONCLUSIONS

6.1 GENERAL

The **Webpage Creator Bot** project successfully demonstrates the power of automation and AI in simplifying webpage creation. By integrating **UiPath Studio** with **UiPath Gen AI**, the bot automates content generation, layout design, and deployment, enabling users to create dynamic and personalized webpages without any coding knowledge. The use of **Robotic Process Automation (RPA)** streamlines repetitive tasks, while AI enhances creativity and customization, ensuring the final product is both relevant and visually appealing. The user-friendly interface, built with **UiPath Forms**, allows even non-technical users to provide input, preview, and edit webpages in real time, making the process accessible and efficient. The system not only speeds up webpage creation but also ensures that it remains consistent and professional. Although the current system handles basic webpage creation tasks, future improvements could include expanded customization options, integration with content management systems, and more advanced AI-driven design features. Additionally, providing more options for deployment and improved scalability could make the bot more versatile and valuable for a wider audience. Overall, the project showcases how AI and automation can transform web development, offering an innovative, efficient solution that improves accessibility, productivity, and creativity in webpage design, while providing a strong foundation for future enhancements and broader adoption.

APPENDICES

Appendix A: ***Workflow Design***

This section includes the design and workflow of the Webpage Creator Bot . The steps are as follows:

1. **User Input Collection**:UiPath Form / Orchestrator.The user provides content and design preferences through a form-based interface. Inputs include text (headings, paragraphs), layout options (e.g., color scheme, font style), and other webpage features (e.g., images, sections).Tools Used: **UiPath Forms** activity captures user input, and **UiPath Orchestrator** is used for task management.
2. **Input Validation and Processing**:Data Manipulation.Validate the input data for completeness and correctness. Any missing fields or incorrect inputs are flagged for correction. This ensures the data is in the required format for generating the webpage.Tools Used: UiPath Assign (for data manipulation), **UiPath If** (for validation checks).
3. **AI Content Generation**:UiPath Gen AI Integration. Based on the user's input, the bot calls the **UiPath Gen AI** activities to generate content (text, images, and other elements) and HTML/CSS code.UiPath Gen AI activities to invoke content generation algorithms and code writing (e.g., **Generate Text** for paragraphs, **Generate Code** for HTML/CSS).
4. **Content and Layout Design**:HTML/CSS Generation. The content generated by AI is then structured into a layout with corresponding HTML tags (e.g., headings, paragraphs, divs, and sections). The bot also generates the necessary CSS styles for the webpage, ensuring that design preferences (color, fonts, layout) are applied correctly. **UiPath String Manipulation** and **File Write Activities** to generate and save HTML/CSS files.
5. **Preview Webpage**:Open in Browser.The bot opens the generated HTML file in a browser for the user to preview. The user can interact with the preview to check if the content and layout match their expectations..**UiPath Open Browser** activity to launch the HTML file in a web browser.

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Refer to the system flow diagram and sequence diagram in the report for detailed representations of the process.

Appendix B: ***Tools and Technologies Used***

1. **UiPath Studio:** Used for designing and automating the workflow, managing user inputs, and sending emails.
2. **OpenAI GPT-3.5-turbo:** Used for analyzing the user's data and generating personalized career recommendations.
3. **File System:** Used for managing and validating user input data during the workflow.

Appendix C: ***System Requirements***

1. **Software:**
    - UiPath Studio (Version 24.10.5 or above)
    - Python 3.7 or above (if additional Python integration is needed)
    - OpenAI GPT-3.5-turbo (API Access)
2. **Hardware:**
    - Processor: Intel i3 or above
    - RAM: 4 GB minimum
    - Disk Space: 500 MB for tools and dependencies

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