

Internship Task – AI Engineer Intern at PathOr

Task: Conversational Agent for Automated Daily Report Generation

Objective:

Design and implement a conversational AI agent that automates the process of generating a daily sales report from a spreadsheet and emailing it to the management team when user asks or schedule the mailing at specified time. The agent should handle the following tasks:

1. Extract data from the sales spreadsheet.
2. Generate a daily sales report in PDF format.
3. Email the report to the management team.
4. Send the report when ask it to be sent or schedule the mailing at a certain time (ex: after 1 hour or at 9PM).

Requirements:

1. **Data Extraction:**
 - The agent should extract relevant data from a provided spreadsheet containing sales values. A sample spreadsheet is linked [here](#).
2. **Report Generation:**
 - Compile the extracted sales data into a daily report.
 - Format the report into a PDF file, ensuring it is clear and suitable for management review.
3. **Email Automation:**
 - Automate the process of emailing the PDF report to the management team. You can use a mail of your own for testing.
 - Schedule the email to be sent every morning at 8 AM.
4. **Conversational Agent:**

- Develop an AI agent that can interact with users to confirm report generation, address issues, and provide status updates.
 - Ensure the agent can handle user queries and provide responses in a natural, conversational manner.
5. **Error Handling and Notifications:**
- Implement error handling to manage issues such as data extraction errors, report generation failures, or email sending problems.
 - Set up notifications to alert the responsible team in case of any issues.

Guidelines:

1. **Tool Selection:**
 - Use Python for scripting and automation.
2. **Modular Code Structure:**
 - Ensure the code is modular, with separate functions for data extraction, report generation, email sending, and conversational interactions.
 - Include appropriate comments and documentation to explain the logic and design choices.
3. **Security and Confidentiality:**
 - Implement security measures to protect sensitive data in the spreadsheets.
 - Ensure the email system adheres to organizational security policies.

Deliverables:

1. **Python Scripts:**
 - Script for extracting data from the sales spreadsheet.
 - Script for generating the daily sales report in PDF format.
 - Script for sending the email with the attached PDF report.
 - Script for the conversational agent handling user interactions.
2. **README File:**

- Explain the implementation, dependencies, and instructions on how to run the scripts.
 - Also add a demo video on how the tool works in your Repository.
 - Include any configuration details such as database credentials or email server settings.
3. **Documentation and Comments:**
- Add comments within the code to explain your logic and design choices.
 - Provide additional documentation if necessary.
4. **Testing and Validation:**
- Include test cases to demonstrate the functionality of each part of the system.
 - Provide examples of generated reports and sent emails.
 - Include interaction logs and sample dialogues with the conversational agent.

Evaluation Criteria:

- **Functionality:** The solution should meet all the specified requirements and generate the report correctly every day.
- **Code Quality:** The code should be clean, modular, and well-documented.
- **Reliability:** The system should handle errors gracefully and send notifications in case of issues.
- **User Experience:** The conversational agent should provide a smooth and engaging user experience.
- **Security:** The solution should ensure the security and confidentiality of the data.
- **Adherence to Guidelines:** Ensure all guidelines are followed, especially regarding the use of Python and modular code structure.
- **ALL THE CODE WRITTEN MUST BE IMPLEMENT FROM SCRATCH AND MINIMAL USAGE OF ANY EXTERNAL PACKAGES.**
- **Any LLM based packages like Langchain, chainlit, autogen or other relatable or strictly not advised to be used in your solution.**

A basic conversational flow would look alike below:

- You: Hi I want you to generate an report of the included sales data and please summarize it for me.
- AI: {.....}
- You: Thanks please now send this report to my team at carrers@pathor.in now
- AI: {.....}