Project Report

Qualification Name	Higher Diploma in Software Engineering
Module Name	AI Model Development

Student name	**Assessor name**
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Date issued	**Completion date**	**Submitted on**
8/22/25	8/22/25	8/22/25

Project title	Travel Booking Agent Microsoft Copilot Studio

Learner declaration

I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.

Student signature: Date: 8/22/26

LITHAN

EDM CLaaS®

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Document Version History

Version Number	Effective Date of release	Details	Author
1.0	21 July 2025	Initial Creation	Noel Anthony

1. Project Background

This project focuses on developing an intelligent AI-powered Travel Booking Agent using Microsoft Copilot Studio, a no-code conversational AI platform. The main goal is to streamline and automate the otherwise manual and time-consuming process of planning and booking travel. This is achieved by designing a user-friendly conversational agent that engages with users in natural language, collecting essential personal information such as their name and email, along with detailed travel preferences including destination, travel dates, flight and hotel preferences, and interests.

The agent guides users through multiple conversation topics, employing entity-driven slot filling to ensure all necessary data is accurately gathered. It incorporates confirmation steps, giving users the ability to verify or correct their information before finalizing their booking. To securely manage the collected data, the agent integrates with an Excel itinerary tracker stored in OneDrive, which logs each booking immediately, ensuring centralized and organized record-keeping.

Additionally, the agent leverages agent flows to automate backend tasks such as inserting travel details into the Excel file and sending personalized email confirmations to users through Office 365's email services. This transformation from a manual to an AI-automated process not only improves operational efficiency but also enhances the overall user experience by making travel planning more accessible and responsive.

The project showcases the practical application of Microsoft Copilot Studio's core capabilities, including topic creation, entity recognition, orchestration between multiple topics, and integration with external data sources and services, all without writing code. This demonstrates the power and flexibility of no-code AI solutions in solving real-world business processes and customer service scenarios.

2. Project Objective

1. Design and Develop a Conversational AI Agent for Travel Booking
   Create an intuitive and interactive AI agent using Microsoft Copilot Studio that can guide users through the entire travel booking process. The agent should be capable of understanding user intents, extracting required details such as name, email, destination, travel dates, and preferences, and managing the conversation flow naturally to ensure a seamless user experience.
2. Implement Accurate Data Collection and Validation Mechanisms
   Ensure the conversational agent accurately captures and validates critical user information through entity recognition, slot filling, and confirmation loops. This will minimize errors, prevent incorrect data storage, and enhance users' trust by allowing them to verify and correct their details before finalizing their travel arrangements.
3. Integrate Cloud-Based Data Storage and Management
   Utilize Microsoft 365 tools such as OneDrive and Excel Online to securely store all travel booking data in a centralized, structured, and easily accessible manner. This integration will provide a reliable backend to log all bookings, facilitate data management, and support real-time updates for administrative and reporting purposes.
4. Automate Backend Processes with Agent Flows
   Develop and implement custom agent flows to automate the insertion of collected booking data into the Excel tracker and to dispatch personalized email confirmations to users. Automating these processes will streamline operations, reduce manual efforts, and ensure timely communication with customers.
5. Conduct Comprehensive Testing and Deploy the AI Agent
   Perform extensive testing on all conversational flows, data integrations, and automated actions to verify the agent's accuracy, robustness, and user-friendliness. After validation, publish the agent and optionally deploy a demo website to provide a functional, accessible AI-powered travel booking service to users, demonstrating practical application of no-code AI development.

3. **Project Specifications**

Technical Tools Used in the Project

- **Microsoft Copilot Studio:** This no-code development platform was the core tool for designing and building the conversational AI agent. It enabled the creation of multi-turn conversation topics, intent recognition, entity extraction, slot filling, and condition-based branching without writing any code. The drag-and-drop interface simplified orchestrating complex dialog flows and integrating external data sources, making AI accessible even without programming skills.
- **OneDrive and Excel Online:** These Microsoft 365 services were utilized to create and host the travel itinerary tracker. Excel Online provided a dynamic, cloud-based spreadsheet where each booking's details (such as name, email, destination, dates, and preferences) were securely recorded in a structured table. OneDrive's storage ensured data persistence and accessibility, supporting real-time updates and multiple agent interactions.
- **Office 365 Outlook Connector (Send an Email (V2) Action):** Integrated into the agent flow to automate sending personalized email confirmations to users immediately after booking submission. This improved user experience by providing prompt communication and served as a proof of booking, leveraging Microsoft's secure email service.
- **Web Knowledge Source Integration:** A web-based knowledge source was linked to the agent to provide dynamic retrieval of travel-related information. This enhanced the agent's capability to answer user queries, offer suggestions, or supplement booking-related details with authoritative content, improving overall conversational intelligence.

Approach to Execute the Project

Execution of the project followed a structured and iterative approach:

1. **Agent Setup and Knowledge Integration:**
   The project began by creating a new conversational agent in Microsoft Copilot Studio, establishing its intent to assist users with travel planning and booking. A web knowledge source was connected to enable the agent to fetch reliable travel information dynamically, thereby enriching interactions with comprehensive content.
2. **Designing Conversation Topics:**
   Two main topics were crafted using conversational design principles:
   - *TravellerDetails* focused on collecting and confirming user personal information (name and email) with validation loops for accuracy.
   - *TravelDetails* managed the collection of detailed itinerary data, including destination, trip dates, flight and hotel preferences, and travel interests, triggered only after successful confirmation in the previous topic.
3. **Data Management with Excel Online:**
   An Excel spreadsheet was prepared on OneDrive with a dedicated table for storing travel bookings securely and systematically. Each variable collected from the user mapped to specific columns, allowing for seamless data capture through agent flows.
4. **Automation with Agent Flows:**
   The custom *TravelRegistryFlow* was developed to automate essential backend operations. This flow took user input variables, inserted a new row into the Excel tracker, and sent a personalized confirmation email. The modular flow structure allowed for easy maintenance and updates.
5. **Testing and Validation:**
   The agent and flows were rigorously tested in the Copilot Studio test environment to ensure smooth conversational transitions, accurate data capture, and reliable integration with Excel and email services. Testing helped identify and fix issues like variable type mismatches, flow interruptions, and user experience improvements.
6. **Publishing and Optional Deployment:**
   After successful validation, the agent was published to make it accessible to users. Optionally, a demo website interface was set up to demonstrate the full functionality as an end-user application.

This phased, modular approach ensured clarity, efficiency, and robustness, successfully delivering a no-code AI travel booking assistant that streamlines user interactions and backend processes.

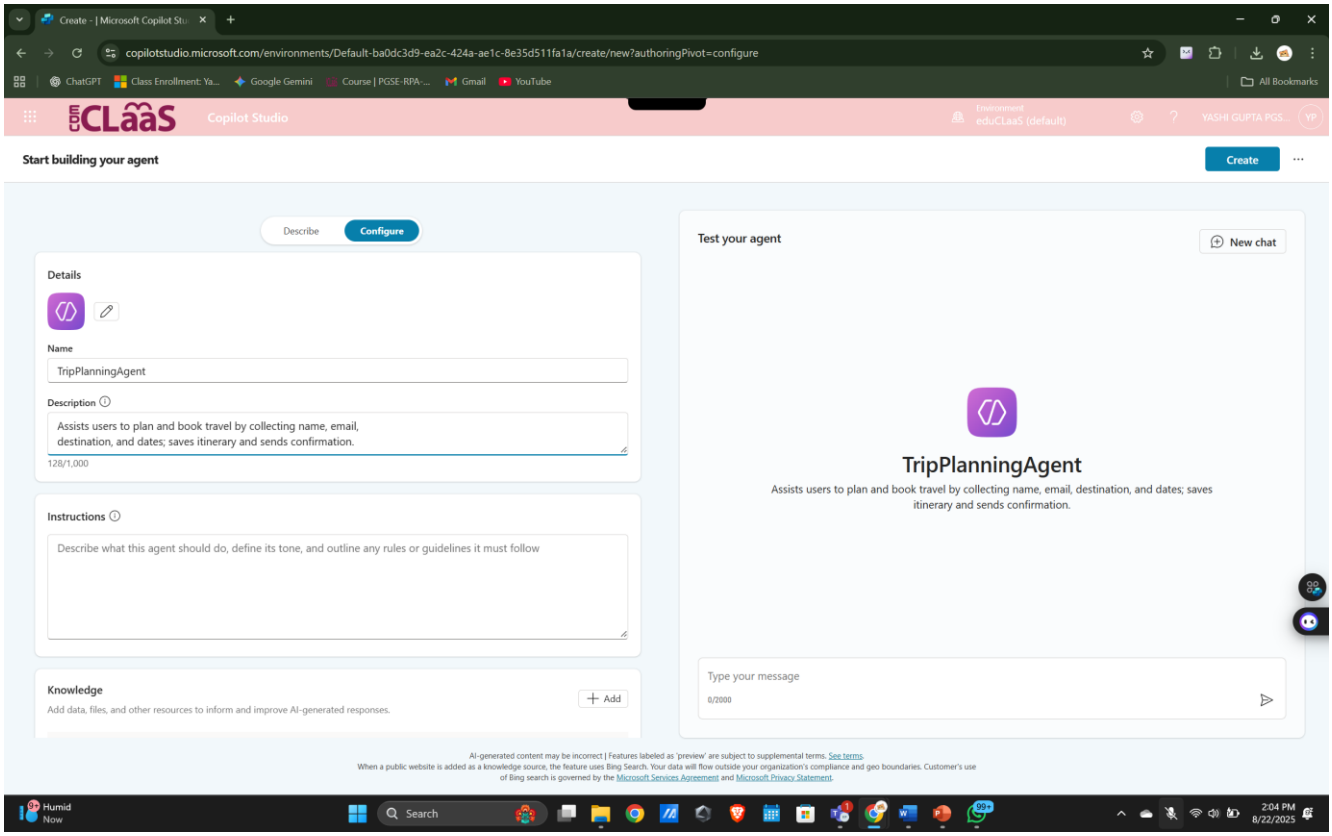
4. Project Tasks

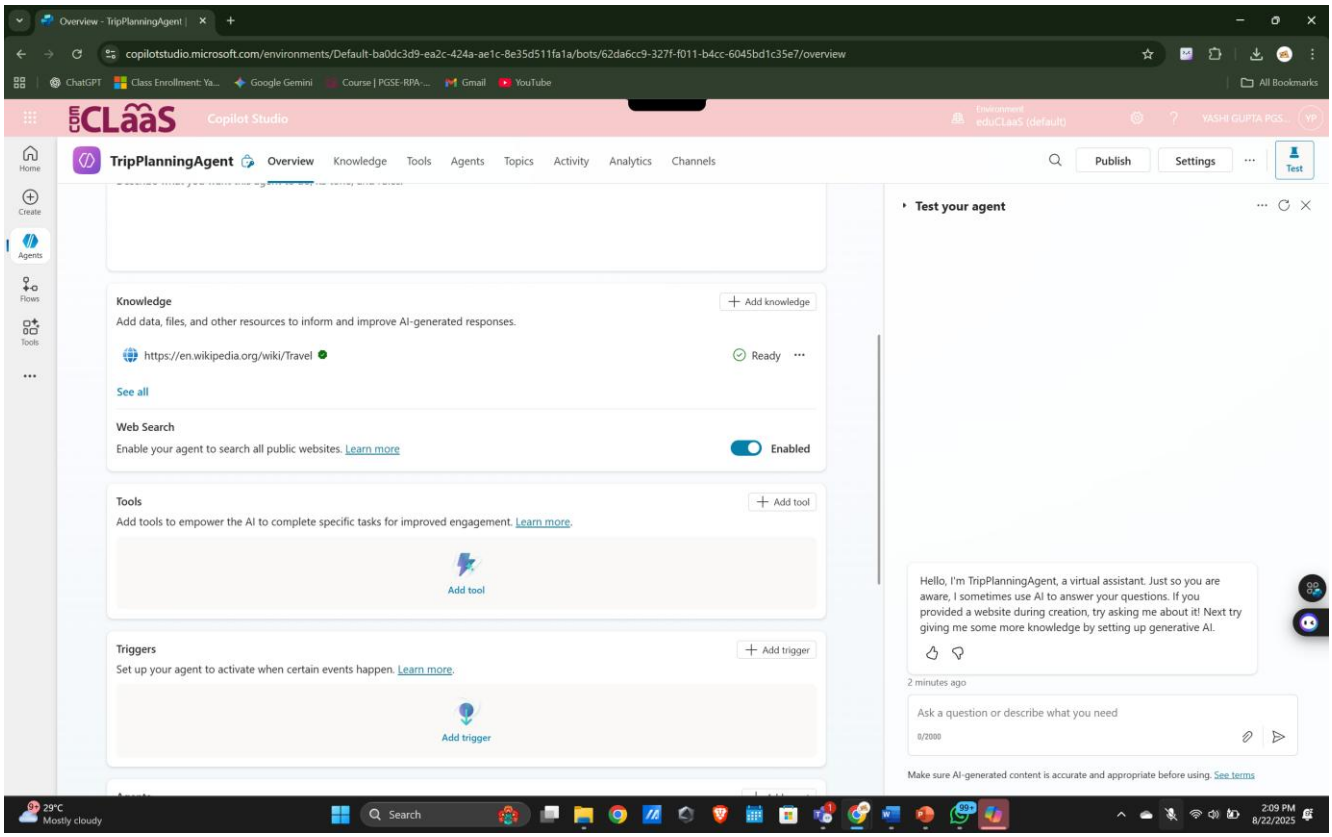
4A. Activity 1

4A. Activity 1: Created Agent's Overview Page

- The agent named "TripPlanningAgent" was successfully created in Copilot Studio with the description: "Assists users to plan and book travel by collecting name, email, destination, and dates; saves itinerary and sends confirmation."
- Classic orchestration was enabled for the agent after creation.

Please include screenshots and explanations in the provided space below.





1. Created Agent's Overview Page

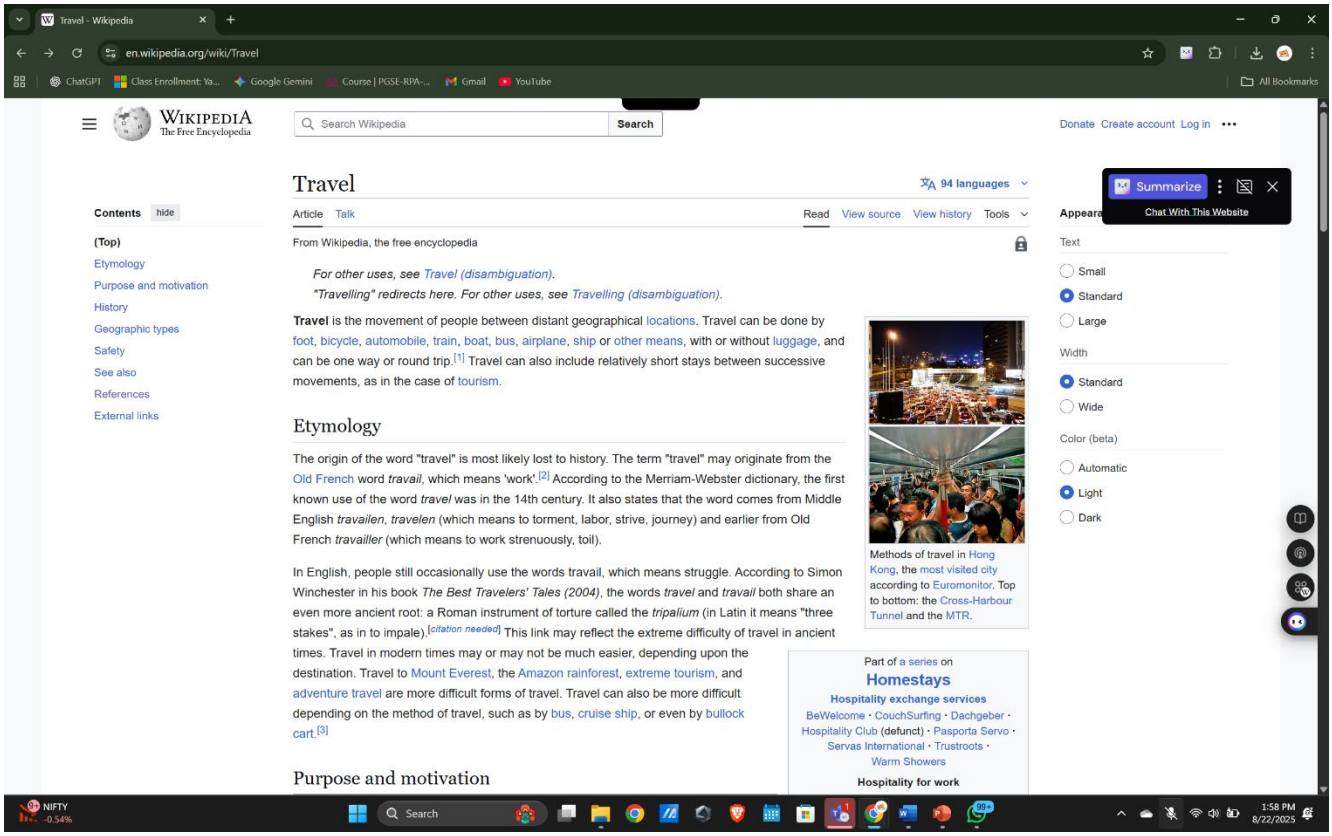
4B Activity 2

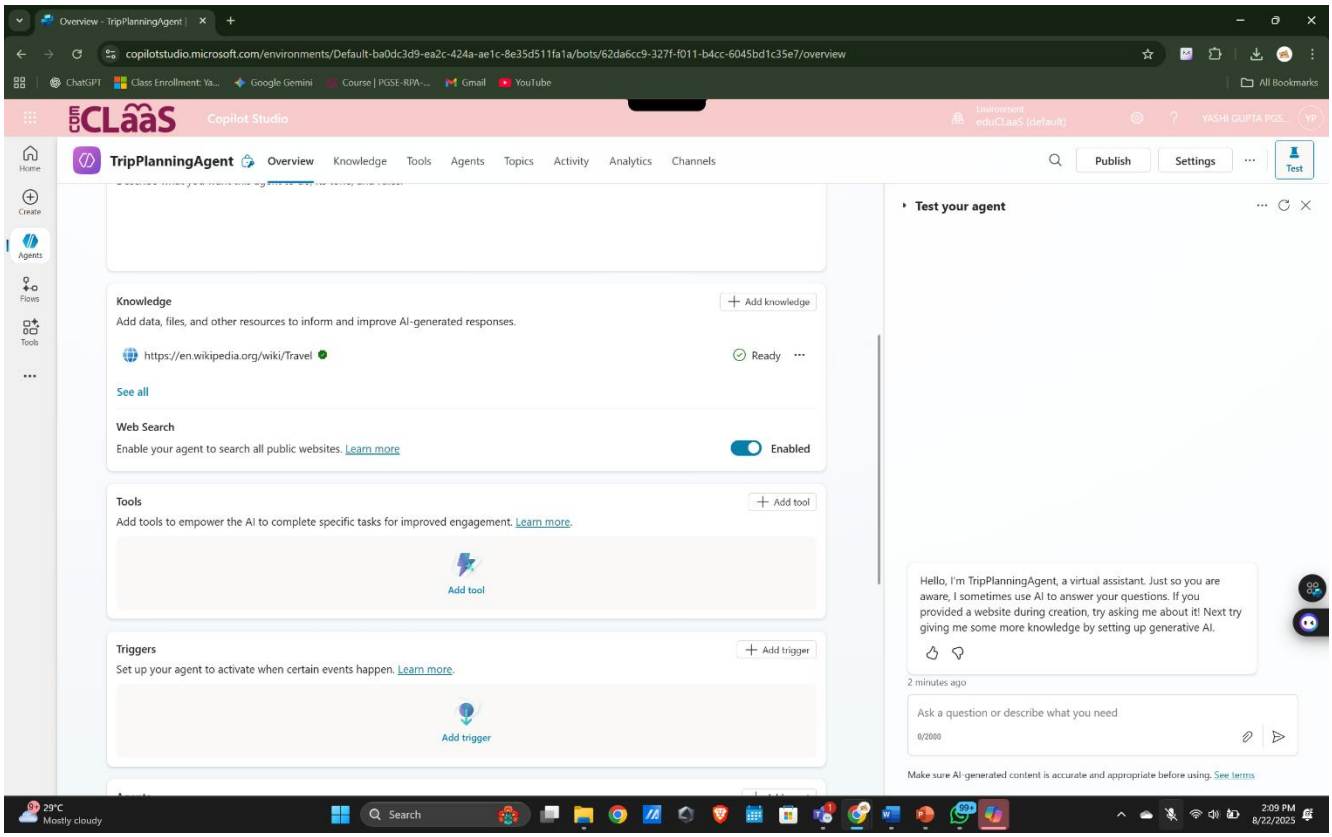
Steps:

- Accessed the Knowledge section in Copilot Studio.
- Added a new web knowledge source named “Travel Wiki.”
- Set the source URL to https://en.wikipedia.org/wiki/Travel.
- Enabled generative mode to allow the agent to produce dynamic, informed replies based on this source.
- Saved the knowledge source and connected it to the agent.

Explanation:

- Integrating a knowledge source equips the agent with the ability to provide accurate, up-to-date travel information. This enhances conversational depth beyond scripted dialogs, offering richer user assistance.





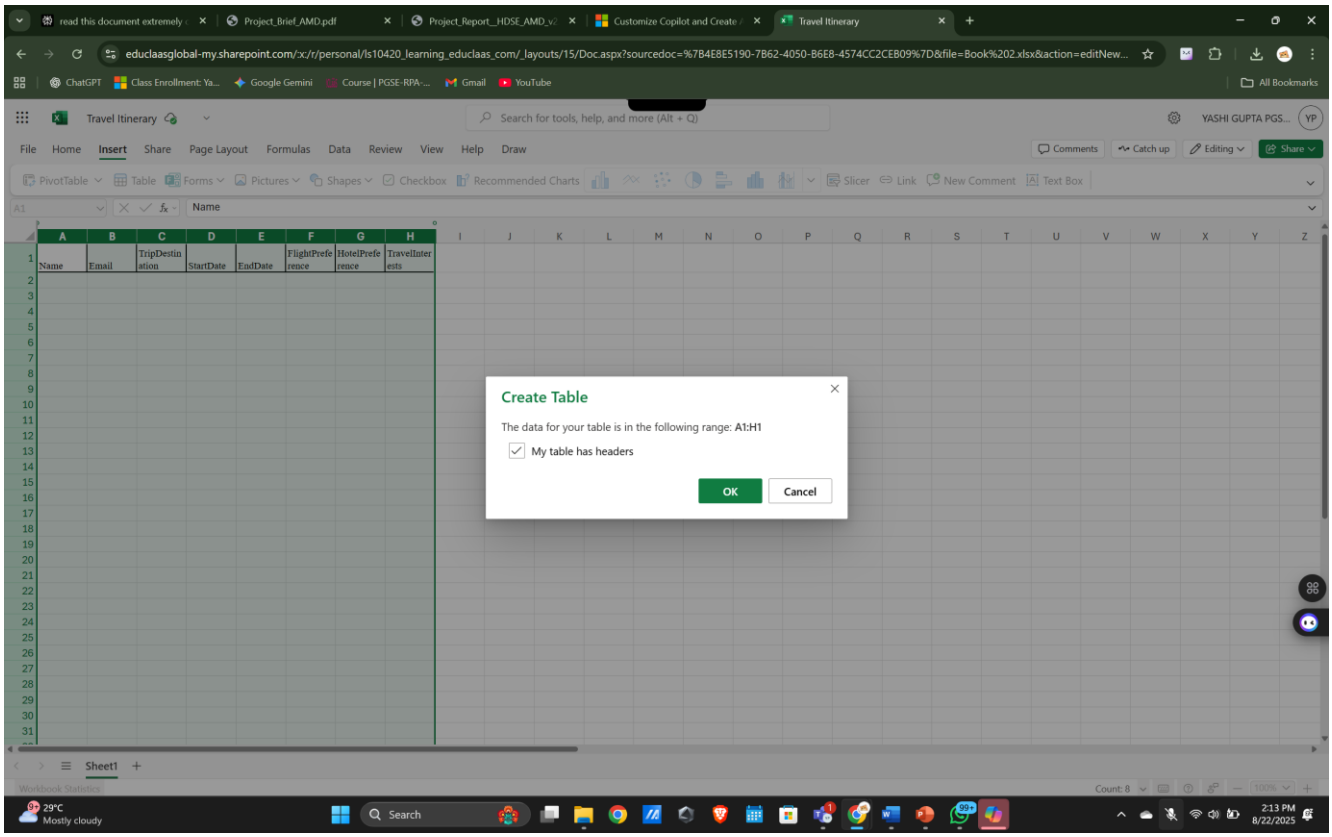
1. Added Knowledge source

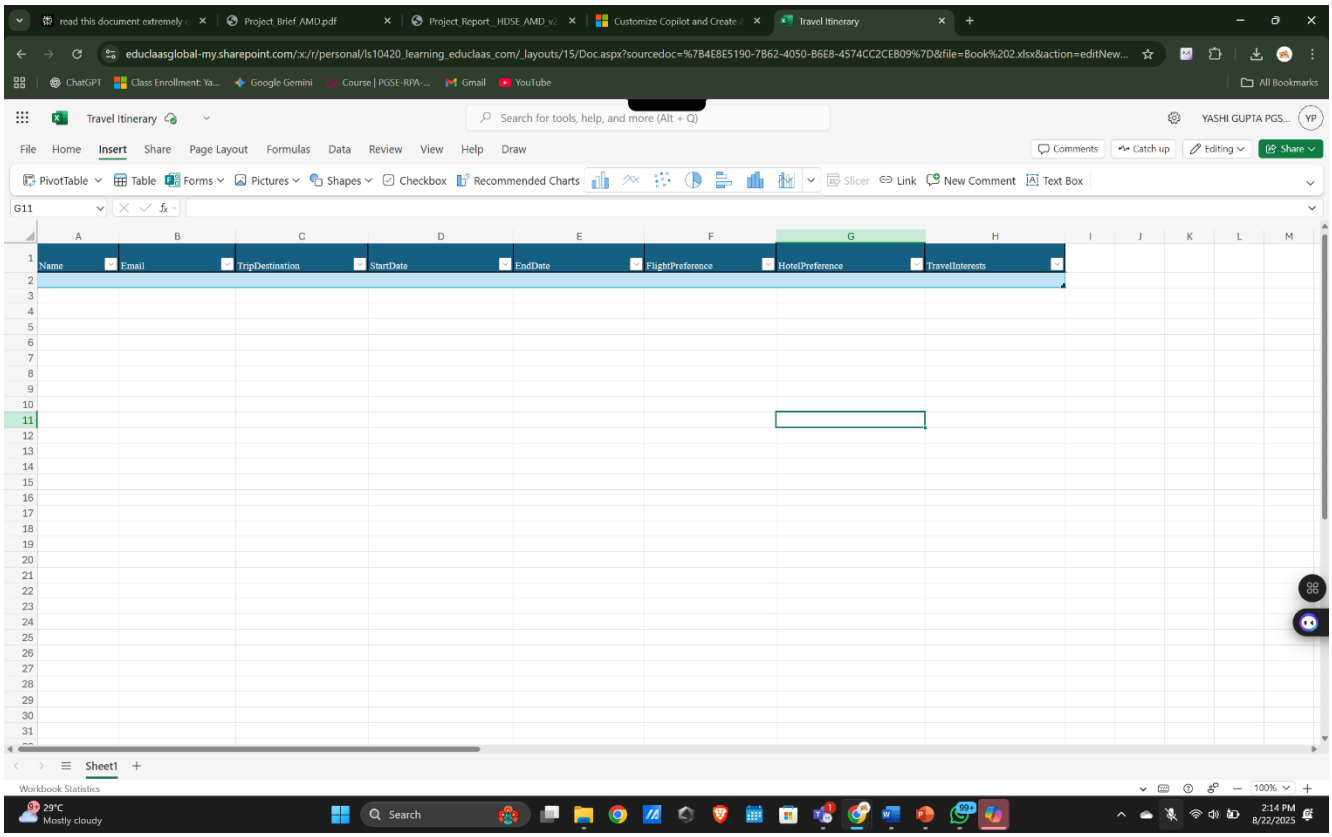
4C Activity 3

4C. Activity 3: Created Excel File Itinerary Tracker

- Steps:
  - Opened OneDrive and created a new Excel workbook titled “Travel Itinerary.xlsx.”
  - Created a new worksheet named “Sheet1.”
  - Added a table with headers: Name, Email, TripDestination, StartDate, EndDate, FlightPreference, HotelPreference, TravelInterests.
  - Formatted the table for easy row insertion.
  - Saved the workbook ensuring it is accessible by Copilot Studio agent flows.
- Explanation:
  Utilizing Excel Online as a backend data store provides a flexible, accessible, and scalable method to manage and track all travel bookings, serving as a simple database integrated with the agent.

Please include screenshots and explanations in the provided space below.





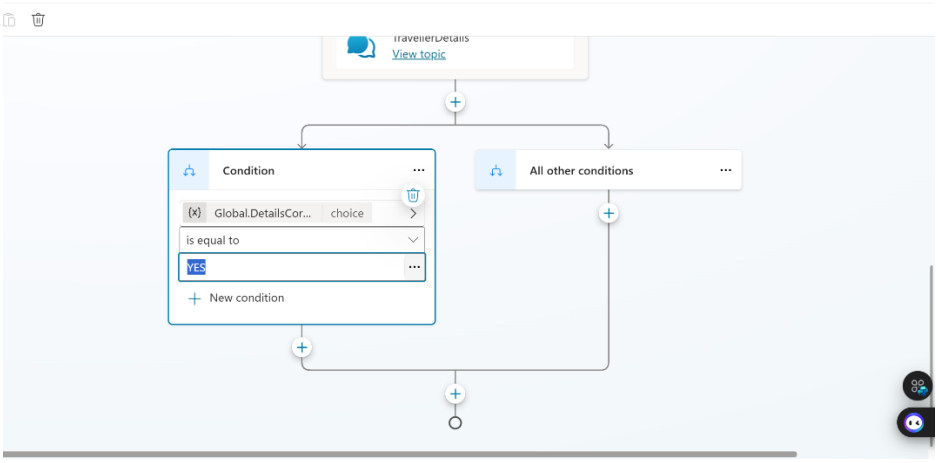
1. Created Excel file Itinerary tracker

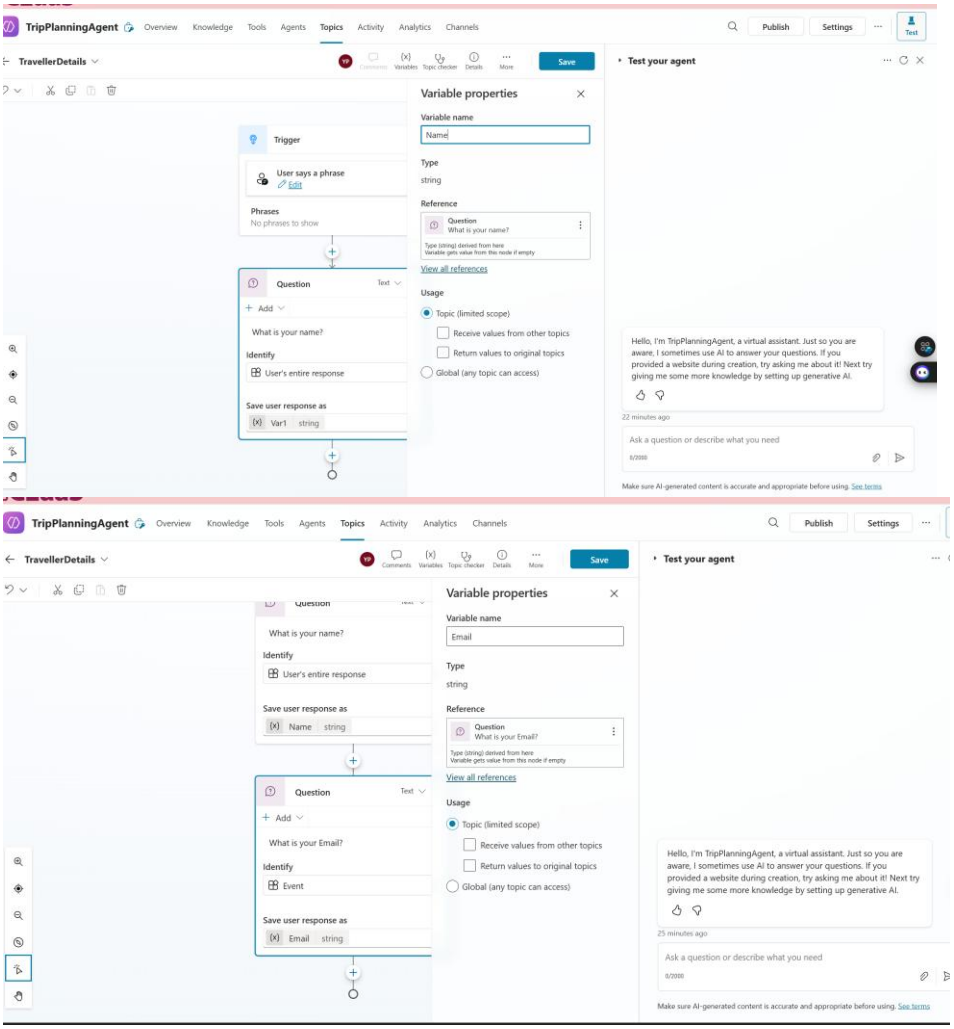
4D. Activity 4

4D. Activity 4: Created TravellerDetails and TravelDetails Topic Conversation Flows

- Steps:
    - Designed TravellerDetails topic:
        - Added nodes asking for user Name and Email, saving responses as variables.
        - Included a confirmation node asking “Are these details correct?” with Yes/No options.
        - If No, looped back to re-ask name and email to ensure correctness.
        - If Yes, proceeded to travel details.
    - Designed TravelDetails topic:
        - Set triggers like “plan my trip,” “register my trip planning.”
        - Started with a welcome message.
        - Redirected to TravellerDetails topic to collect/confirm personal info.
        - Added conditional logic to proceed only if details confirmed.
        - Asked trip destination (entity: City), start and end dates (entity: Date), flight preference (Economy/Business), hotel preference (3/4/5 Star), and travel interests (Adventure, Relaxation, History, Nightlife).
        - Stored each response in corresponding variables.
- Explanation:
  Separating the conversation into clear, focused topics improves user engagement and data accuracy. Validation **loops reduce errors, and triggering topics based on user input guides the flow logically.**

Please include screenshots and explanations in the provided space below.

1. 



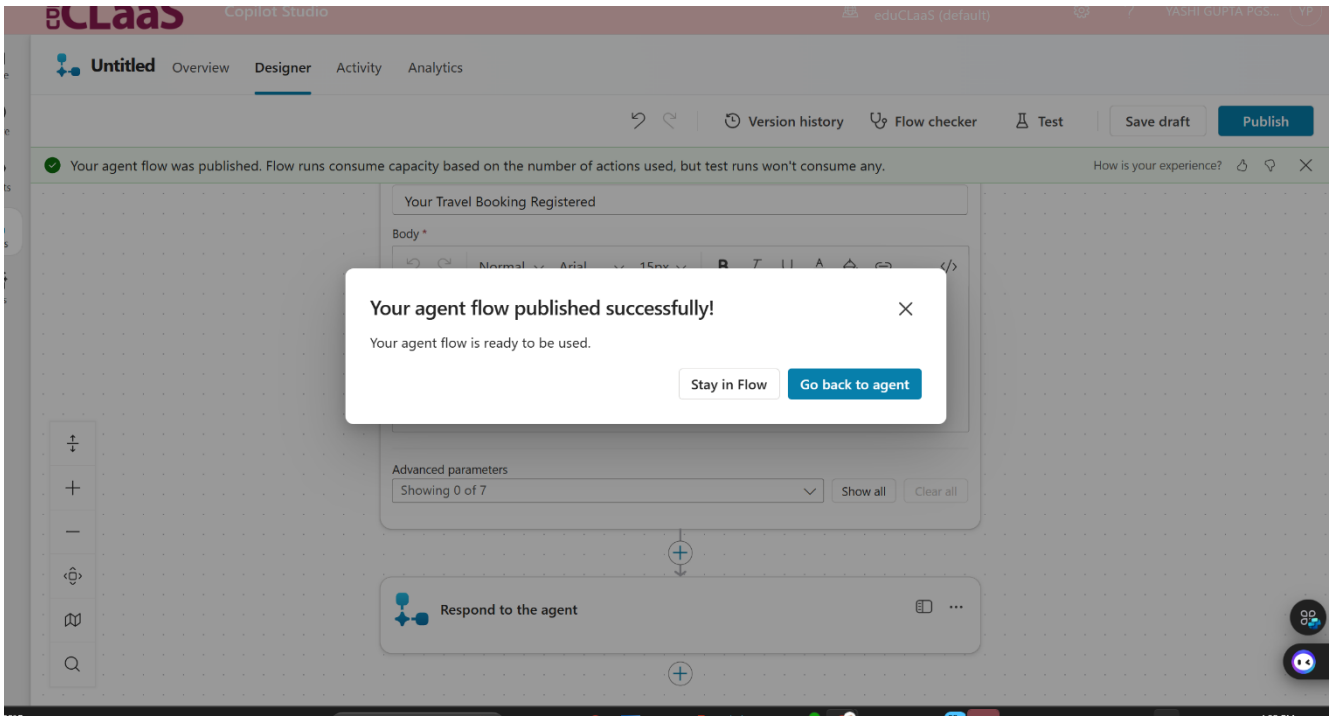
2. Created TravelDetails topic with entire conversation flow

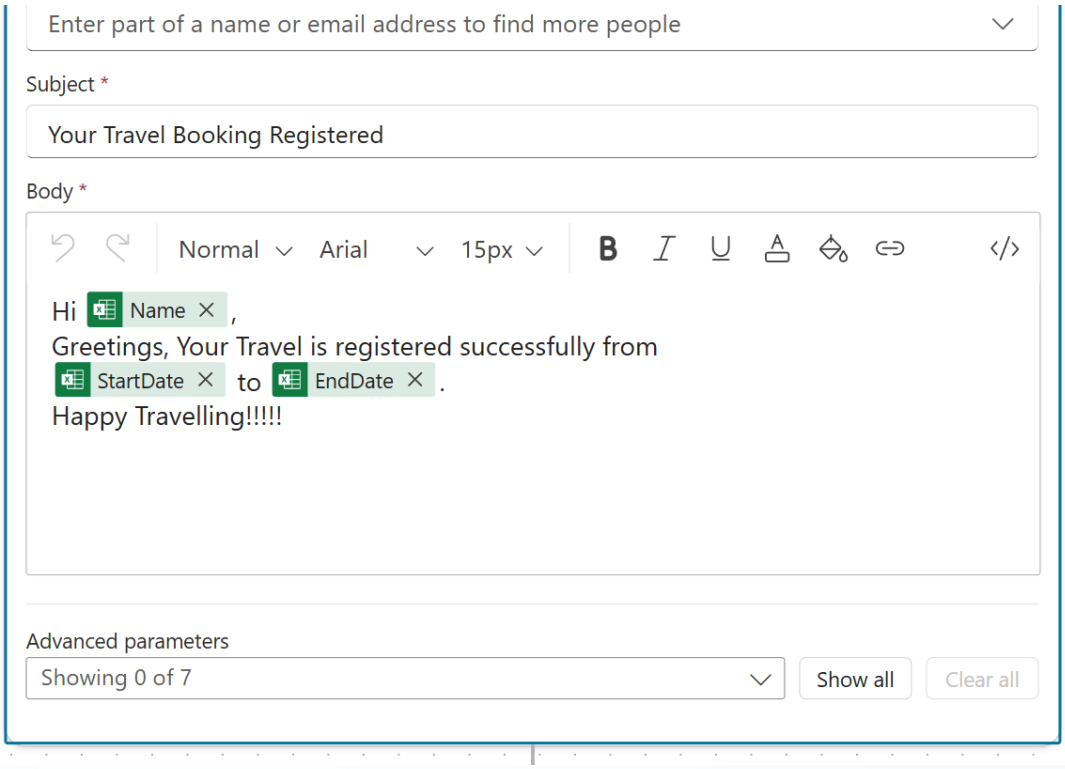
4E. Activity 5

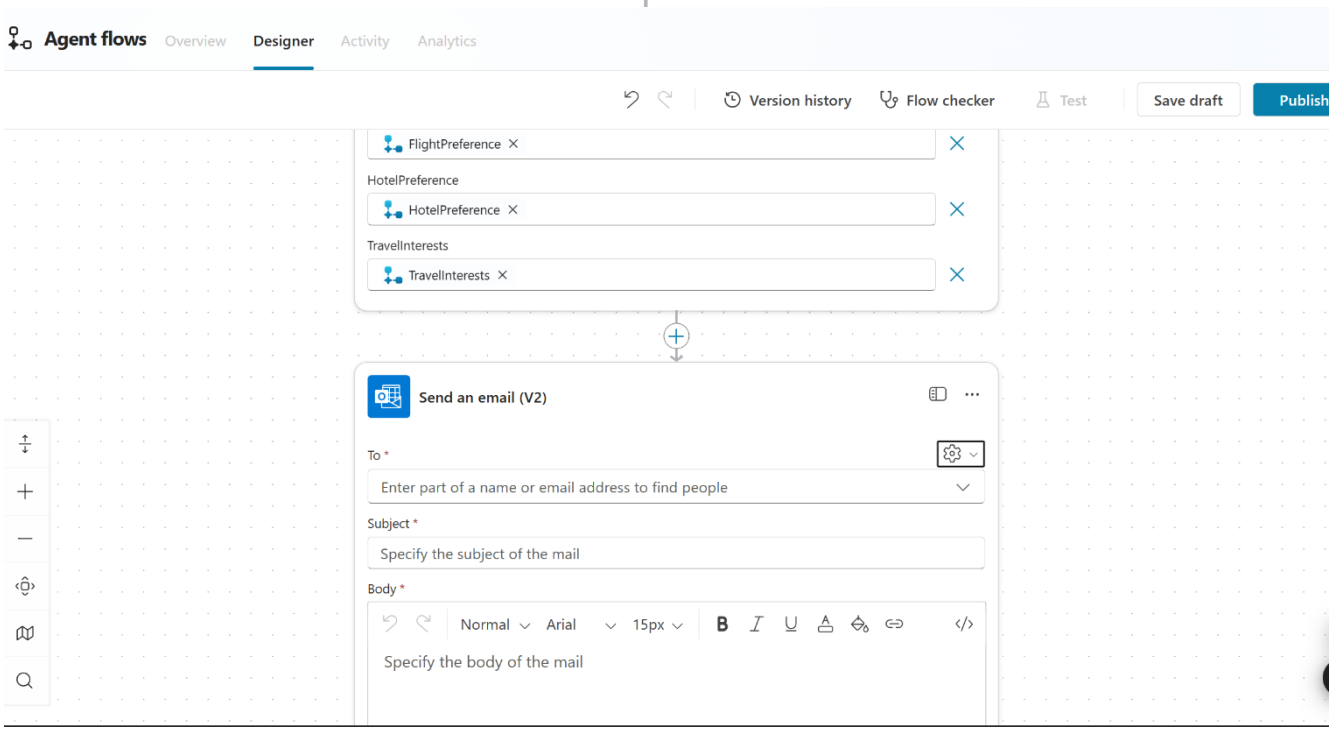
4E. Activity 5: Created Agent Flow

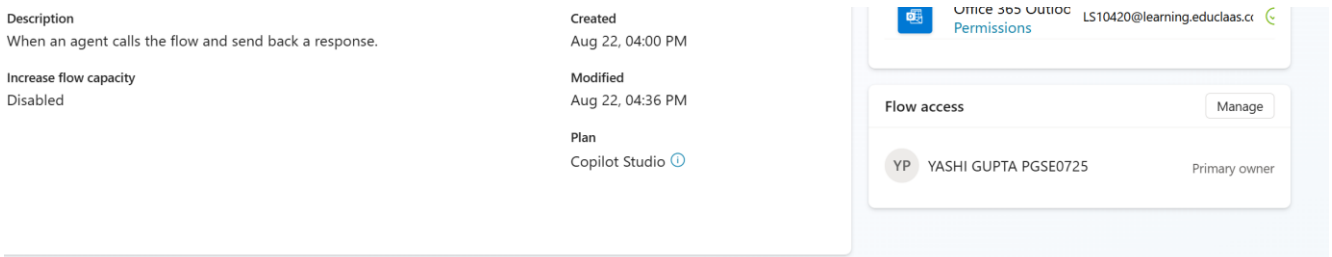
- Steps:
    - Created a new agent flow named TravelRegistryFlow.
    - Configured input parameters to receive all variables collected from conversation topics (Name, Email, TripDestination, StartDate, EndDate, FlightPreference, HotelPreference, TravelInterests).
    - Added an Excel Online action to insert a new row into the Travel Itinerary table with these inputs.
    - Added Send an Email (V2) action using Office 365 connector:
        - Set recipient as the user's email.
        - Crafted an email body with dynamic variables to personalize the confirmation message.
    - Connected all steps sequentially and saved the flow.
- Explanation:
  The agent flow automates backend processing, ensuring travel details are systematically stored and users receive immediate confirmation. This separation enhances system organization and ease of future updates.

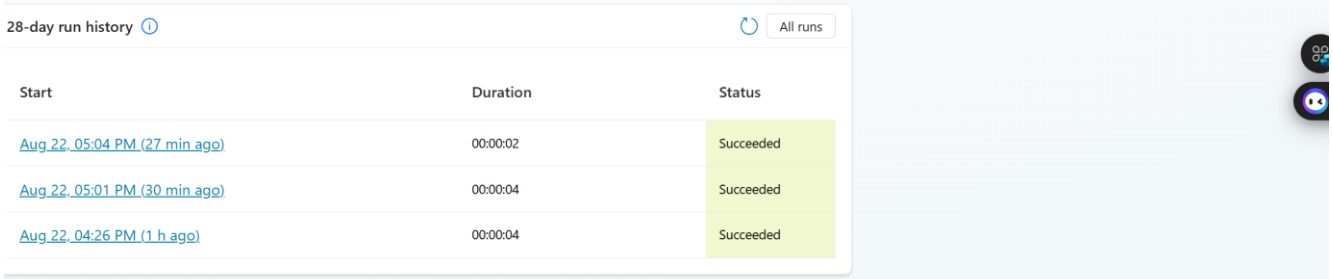
Please include screenshots and explanations in the provided space below.

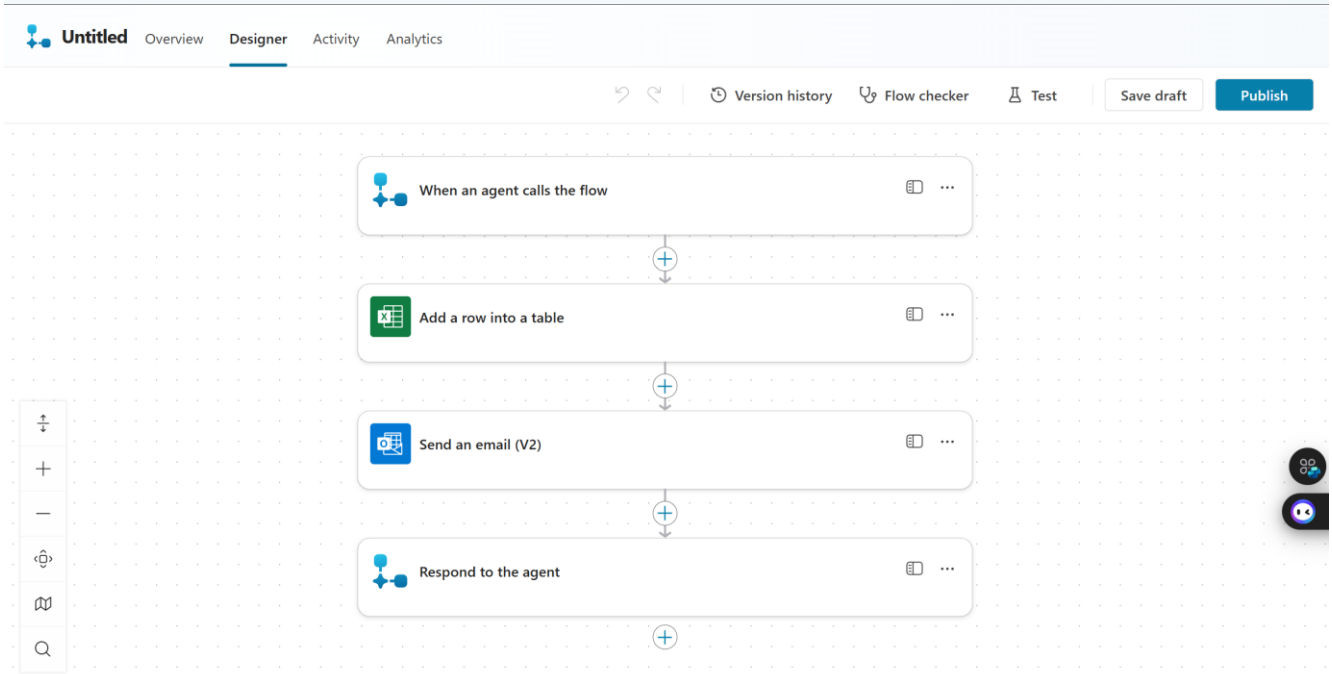


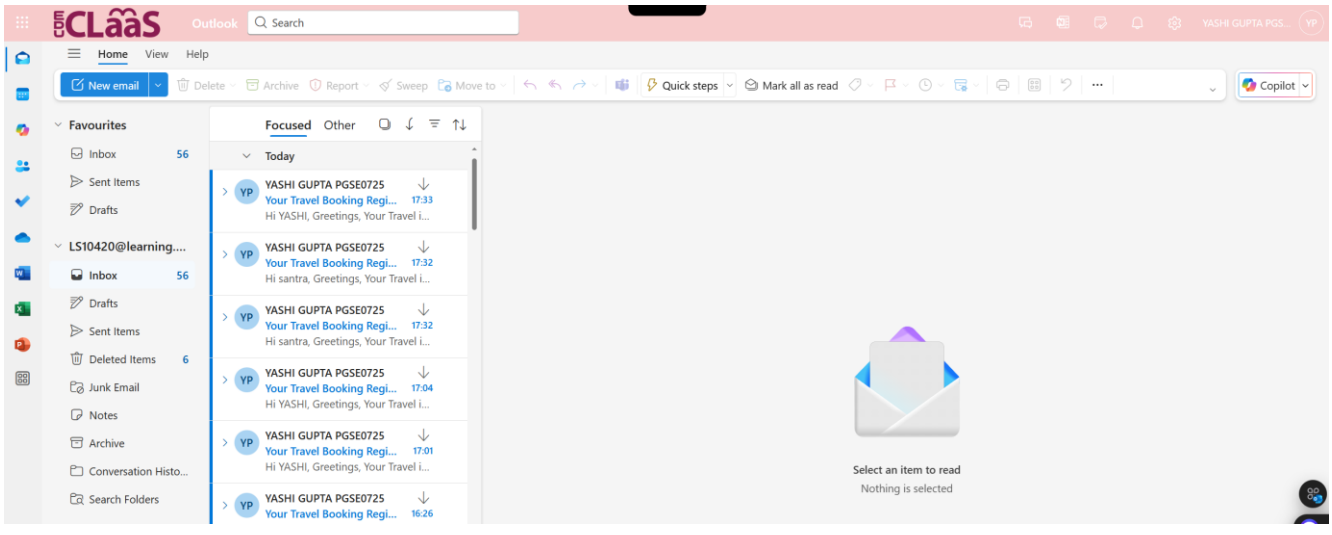

Enter part of a name or email address to find more people
Subject *
Your Travel Booking Registered
Body *
Normal
Arial
15px
Hi Name ,
Greetings, Your Travel is registered successfully from
StartDate to EndDate .
Happy Travelling!!!!!
Advanced parameters
Showing 0 of 7
Show all
Clear all

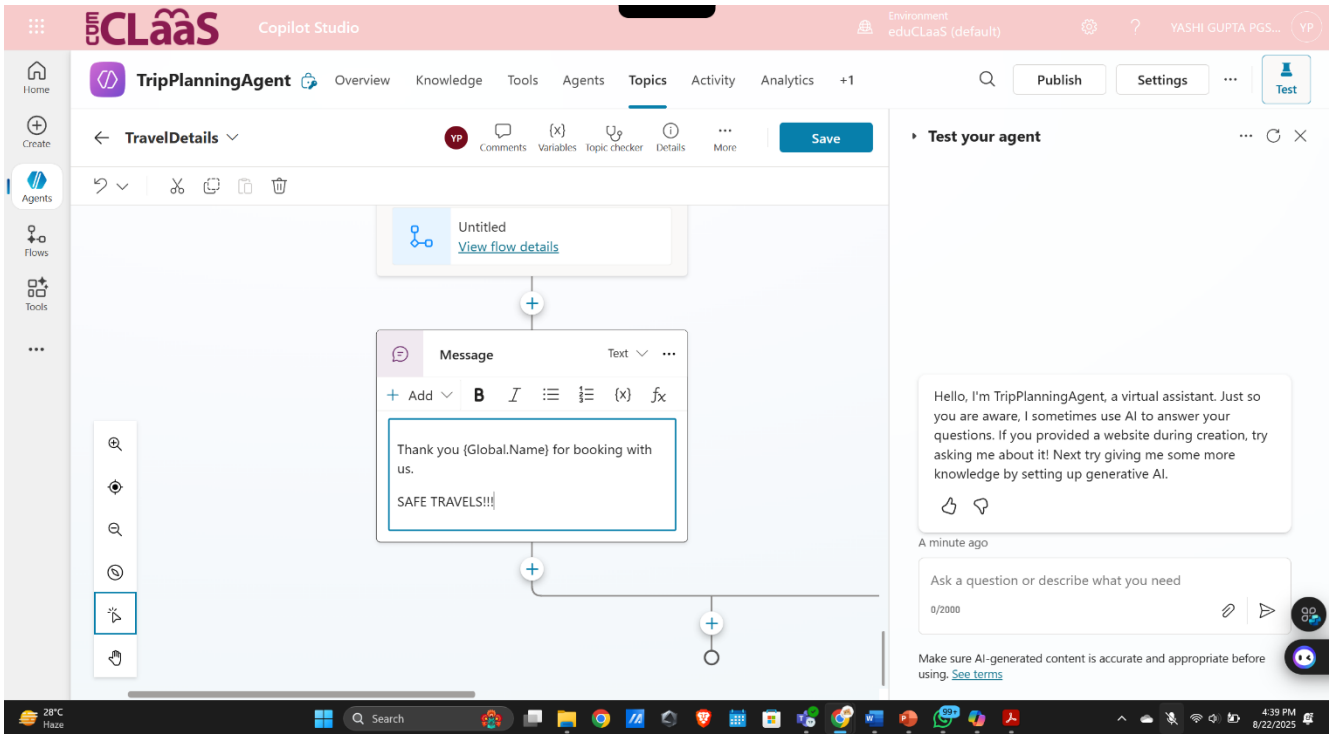

Agent flows
Overview
Designer
Activity
Analytics
Version history
Flow checker
Test
Save draft
Publish
FlightPreference
HotelPreference
HotelPreference
TravelInterests
TravelInterests
Send an email (V2)
To *
Enter part of a name or email address to find people
Subject *
Specify the subject of the mail
Body *
Normal
Arial
15px
Specify the body of the mail


Description
When an agent calls the flow and send back a response.
Increase flow capacity
Disabled
Created
Aug 22, 04:00 PM
Modified
Aug 22, 04:36 PM
Plan
Copilot Studio
Office 365 Outlook
LS10420@learning.educlaas.c
Permissions
Flow access
Manage
YP
YASHI GUPTA PGSE0725
Primary owner


28-day run history
All runs
Start
Duration
Status
Aug 22, 05:04 PM (27 min ago)
00:00:02
Succeeded
Aug 22, 05:01 PM (30 min ago)
00:00:04
Succeeded
Aug 22, 04:26 PM (1 h ago)
00:00:04
Succeeded


Untitled
Overview
Designer
Activity
Analytics
Version history
Flow checker
Test
Save draft
Publish
When an agent calls the flow
Add a row into a table
Send an email (V2)
Respond to the agent


EDUCLAAS
Outlook
Search
Home
View
Help
New email
Delete
Archive
Report
Sweep
Move to
Quick steps
Mark all as read
Copilot
Favourites
Inbox 56
Sent Items
Drafts
LS10420@learning....
Inbox 56
Drafts
Sent Items
Deleted Items 6
Junk Email
Notes
Archive
Conversation Histo...
Search Folders
Focused
Other
Today
YASHI GUPTA PGSE0725
Your Travel Booking Regi...
Hi YASHI, Greetings, Your Travel i...
Hi santra, Greetings, Your Travel i...
Select an item to read
Nothing is selected

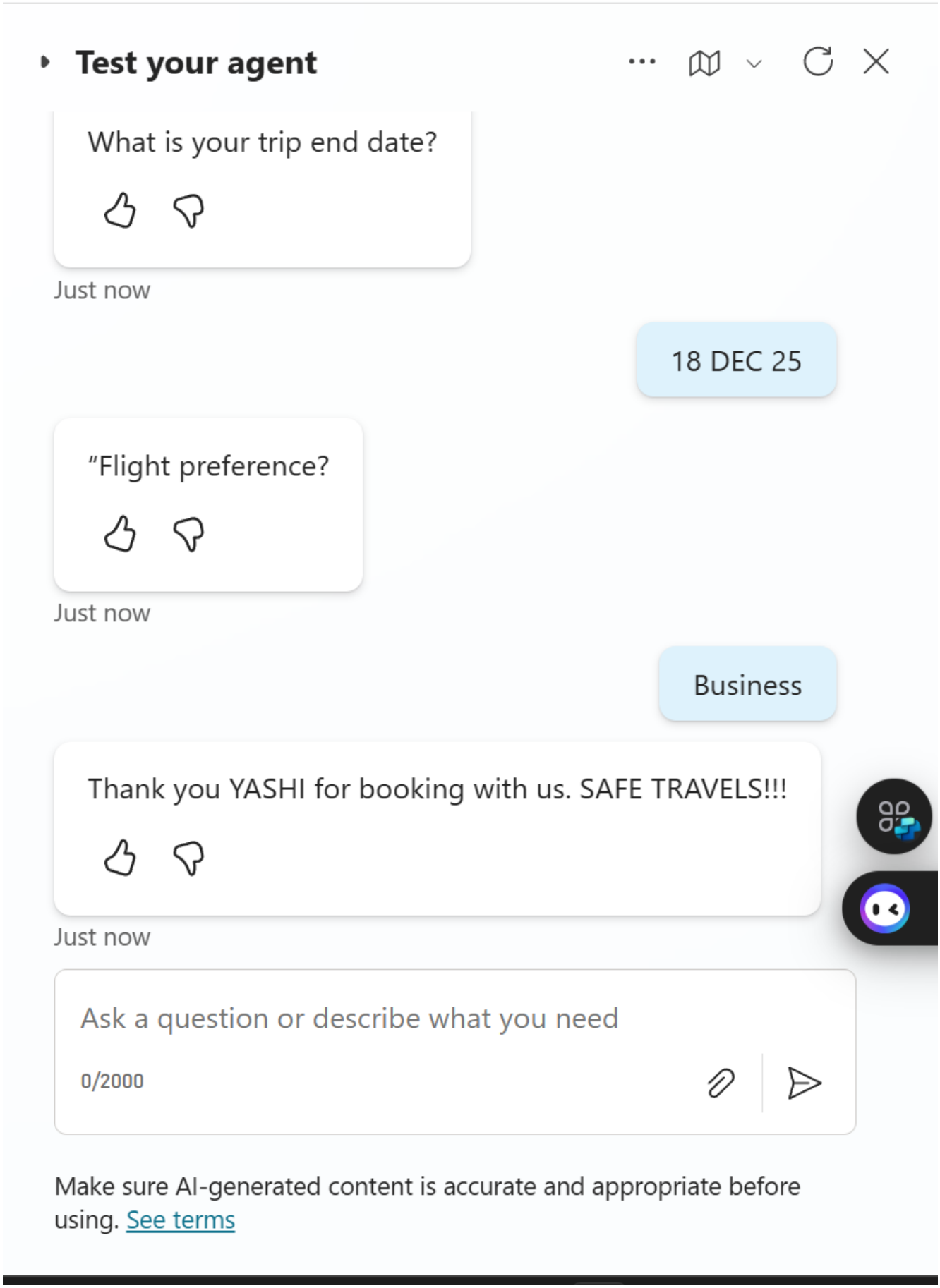


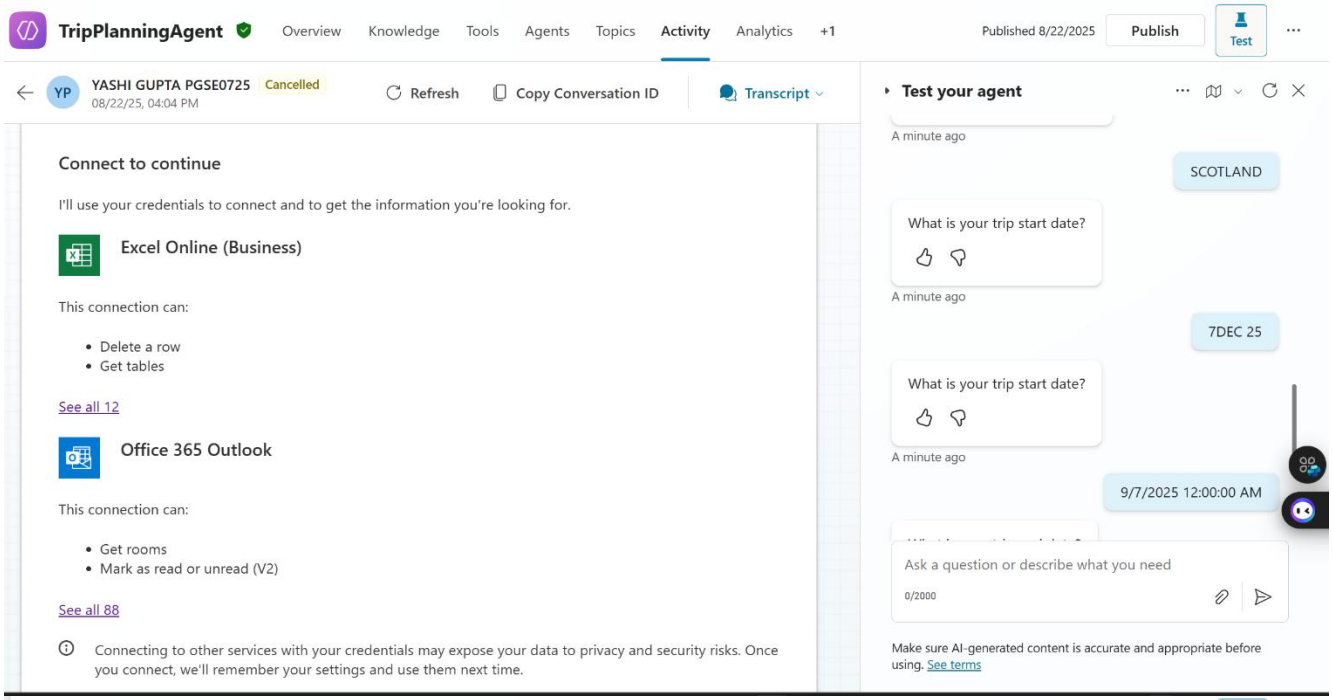
1. Created Agent flow

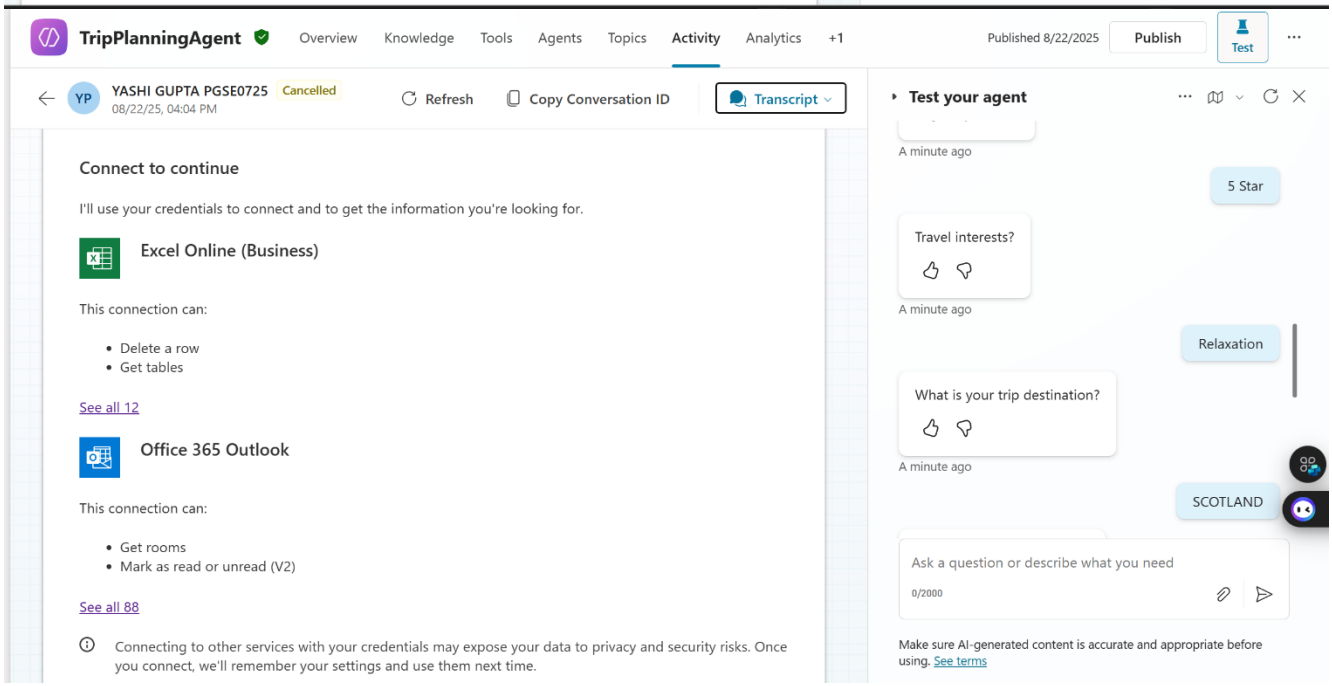
4F. Activity 6

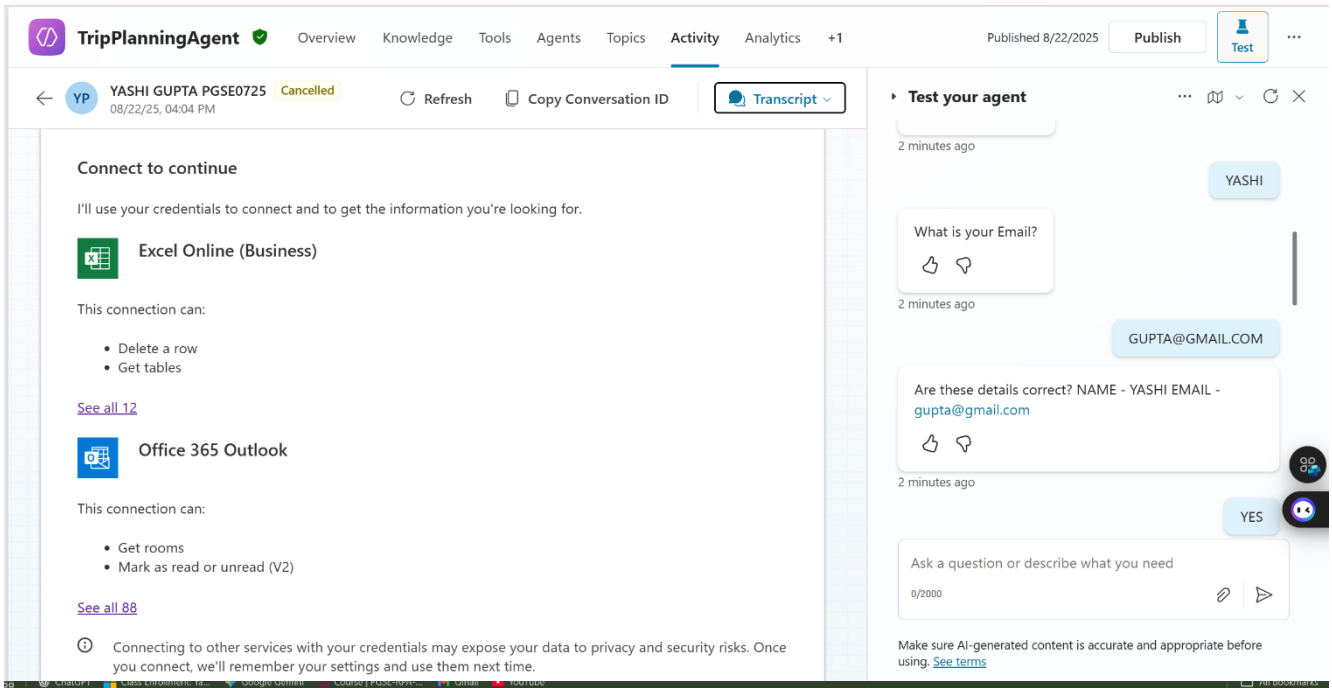
4F. Activity 6: Agent Responses in the Test Panel

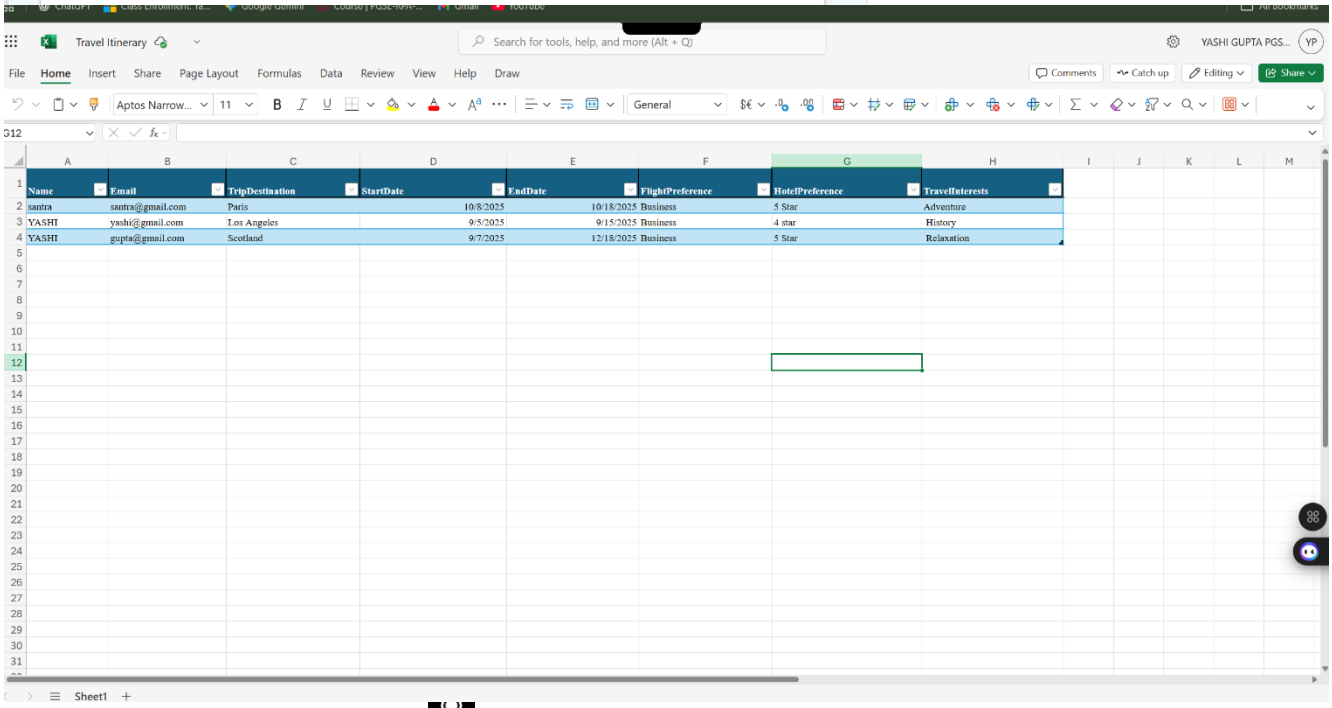
- Steps:
    - Used Copilot Studio's test environment to simulate user interactions.
    - Tested scenarios starting with booking intent phrases.
    - Verified the agent correctly asked for and confirmed personal details.
    - Confirmed itinerary details were gathered as expected.
    - Verified data flow to Excel file insertion.
    - Confirmed receipt of confirmation emails.
    - Tested error handling by giving incorrect details and confirming that loops for re-entry worked.
    - Debugged and refined conversational flows based on test results.
- Explanation:
  Testing is critical to validate the agent's conversational logic, data accuracy, and integration points. Identifying and resolving issues before deployment ensures reliability and user satisfaction.


Test your agent
What is your trip end date?
Just now
18 DEC 25
"Flight preference?
Just now
Business
Thank you YASHI for booking with us. SAFE TRAVELS!!!
Just now
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms


TripPlanningAgent
Overview
Knowledge
Tools
Agents
Topics
Activity
Analytics
+1
Published 8/22/2025
Publish
Test
YP
YASHI GUPTA PGSE0725
Cancelled
08/22/25, 04:04 PM
Refresh
Copy Conversation ID
Transcript
Connect to continue
I'll use your credentials to connect and to get the information you're looking for.
Excel Online (Business)
This connection can:
Delete a row
Get tables
See all 12
Office 365 Outlook
This connection can:
Get rooms
Mark as read or unread (V2)
See all 88
Connecting to other services with your credentials may expose your data to privacy and security risks. Once you connect, we'll remember your settings and use them next time.
Test your agent
A minute ago
SCOTLAND
What is your trip start date?
A minute ago
7DEC 25
What is your trip start date?
A minute ago
9/7/2025 12:00:00 AM
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms


TripPlanningAgent
Overview
Knowledge
Tools
Agents
Topics
Activity
Analytics
+1
Published 8/22/2025
Publish
Test
YP
YASHI GUPTA PGSE0725
Cancelled
08/22/25, 04:04 PM
Refresh
Copy Conversation ID
Transcript
Connect to continue
I'll use your credentials to connect and to get the information you're looking for.
Excel Online (Business)
This connection can:
Delete a row
Get tables
See all 12
Office 365 Outlook
This connection can:
Get rooms
Mark as read or unread (V2)
See all 88
Connecting to other services with your credentials may expose your data to privacy and security risks. Once you connect, we'll remember your settings and use them next time.
Test your agent
A minute ago
5 Star
Travel interests?
A minute ago
Relaxation
What is your trip destination?
A minute ago
SCOTLAND
Ask a question or describe what you need
0/2000
Make sure AI-generated content is accurate and appropriate before using. See terms





Name	Email	TripDestination	StartDate	EndDate	FlightPreference	HotelPreference	TravelInterests
santra	santra@gmail.com	Paris	10/8/2025	10/18/2025	Business	5 Star	Adventure
YASHI	yashi@gmail.com	Los Angeles	9/5/2025	9/15/2025	Business	4 star	History
YASHI	gupta@gmail.com	Scotland	9/7/2025	12/18/2025	Business	5 Star	Relaxation

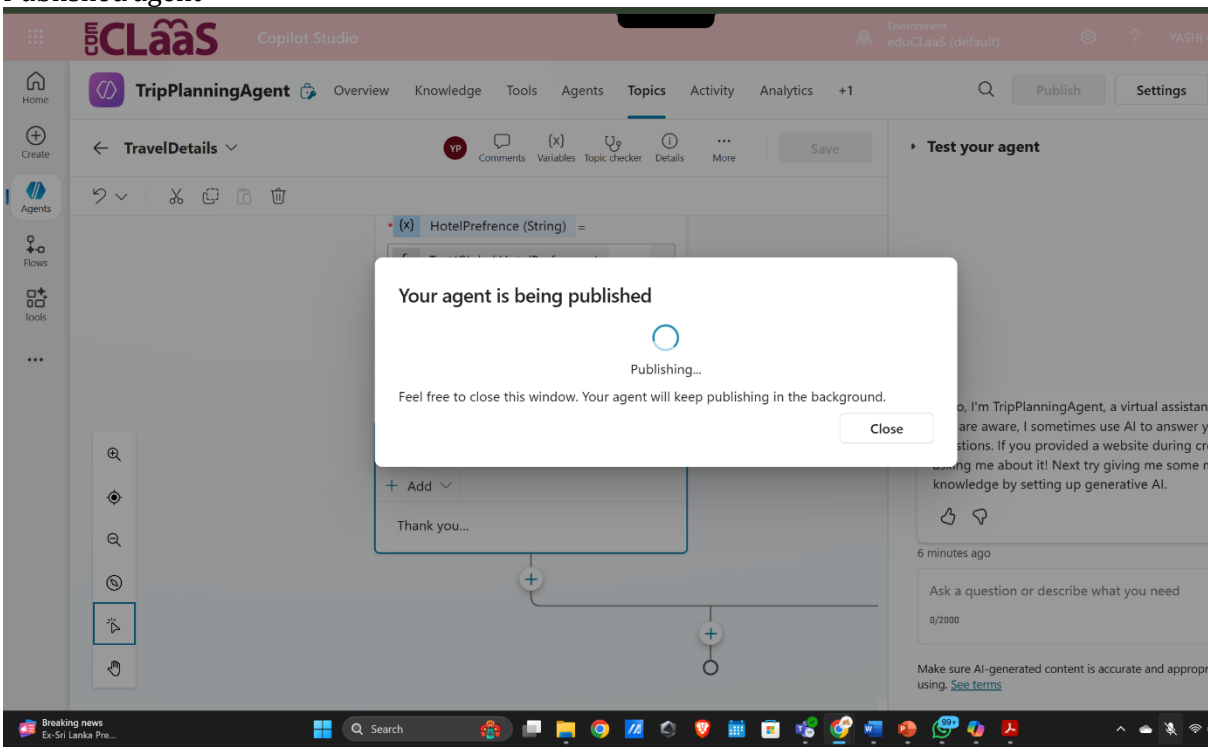
Please include screenshots and explanations in the provided space below.

1. Agent responses in the test panel

4G. Activity 6

- Explanation:
  Publishing transitions the agent from development to production use, allowing end users to benefit from the solution. A demo website serves as an easy-to-access frontend for showcasing the agent and gathering early feedback.

Please include screenshots and explanations in the provided space below.

1. Published agent
2. 

Hello, I'm TripPlanningAgent, a virtual assistant. Just so you are aware, I sometimes use AI to answer your questions. If you provided a website during creation, try asking me about it! Next try giving me some more knowledge by setting up generative AI.

2 minutes ago

I WANT TO GO ON A TRIP

I am ready to plan your trip...

What is your name?

What is your name?

2 minutes ago

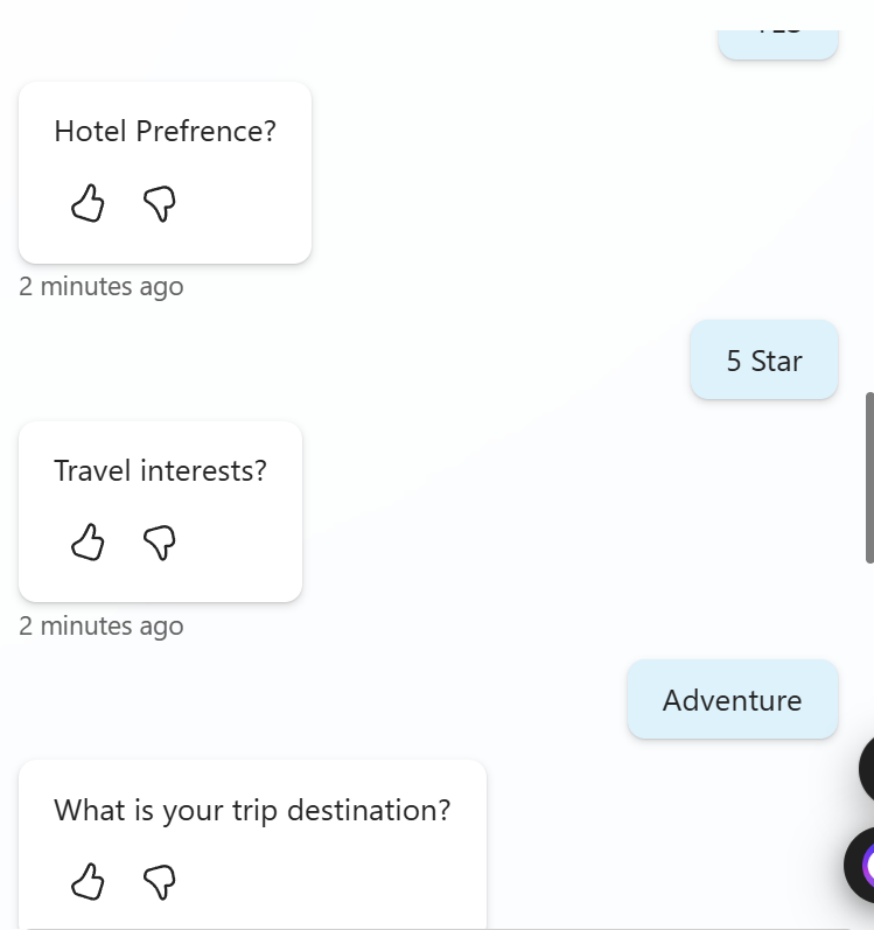
SMAHI

What is your Email?

2 minutes ago

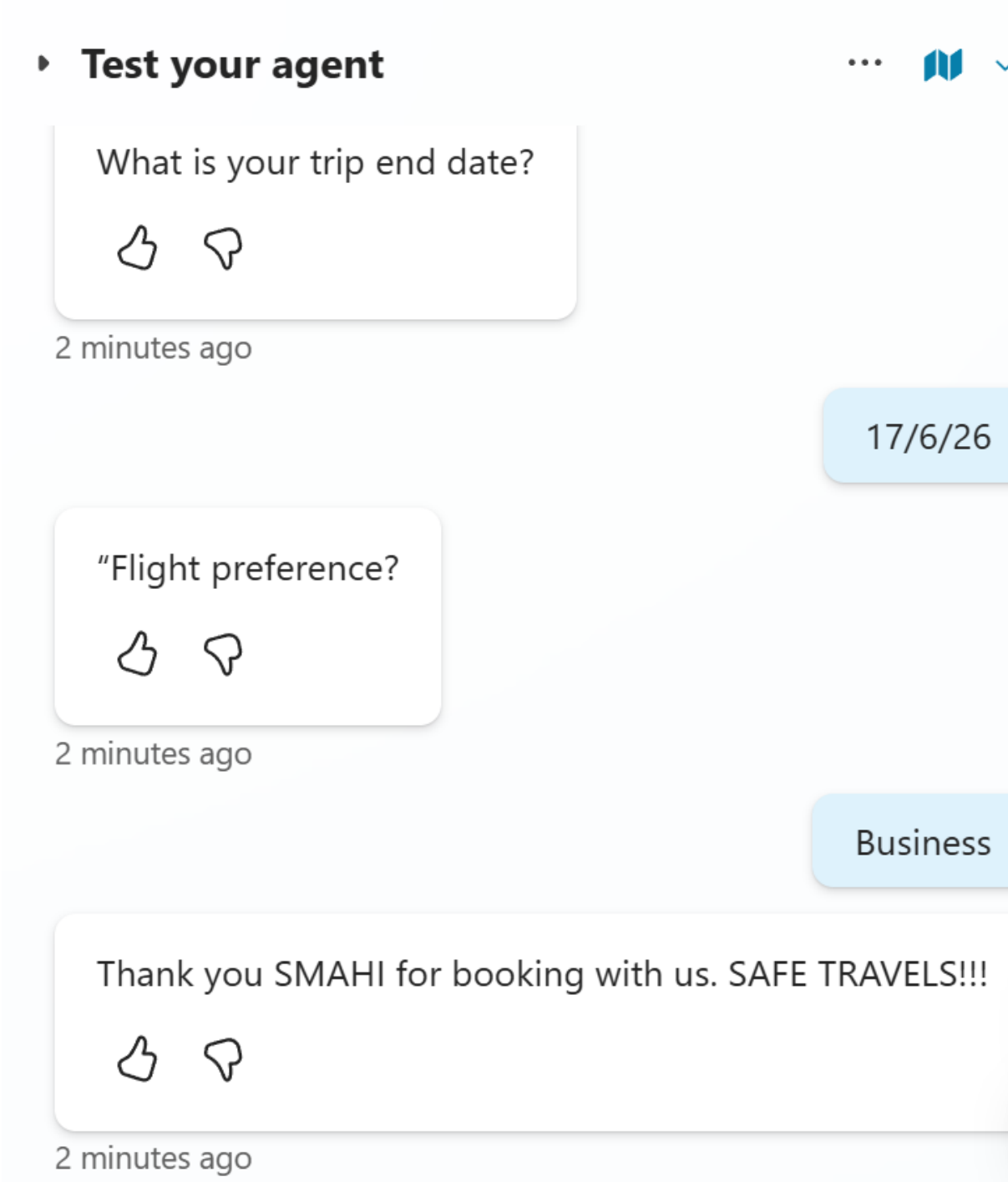
SMAHI@GMAIL.COM

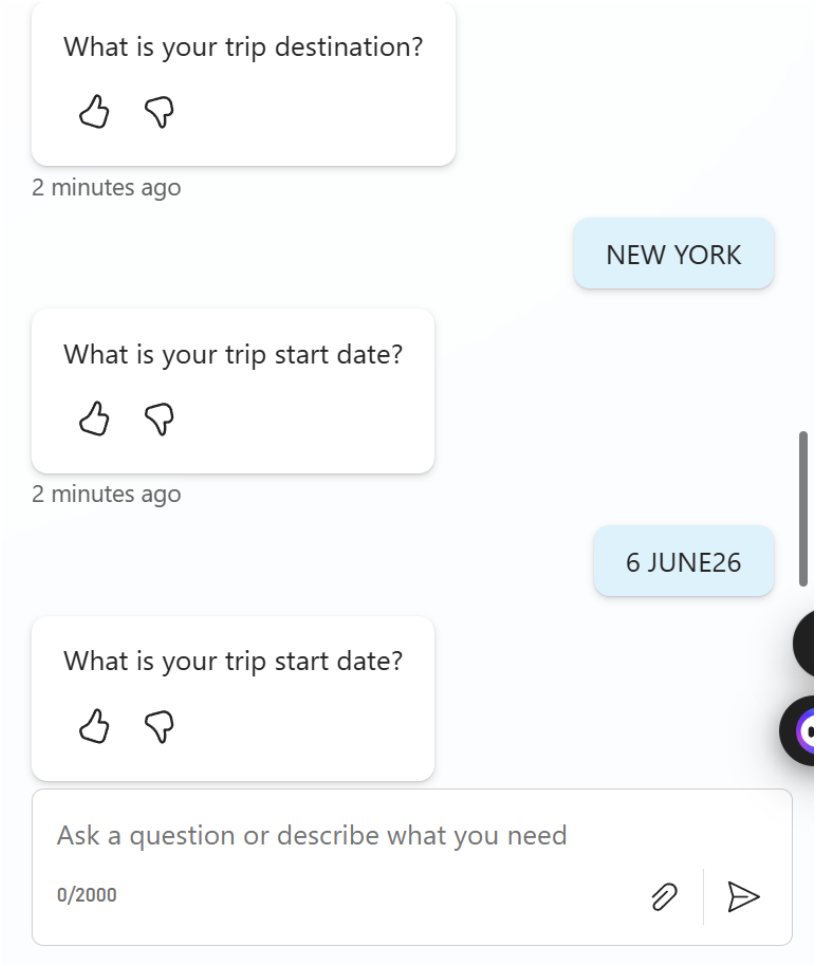
Are these details correct? NAME - SMAHI EMAIL - smahi@gmail.com

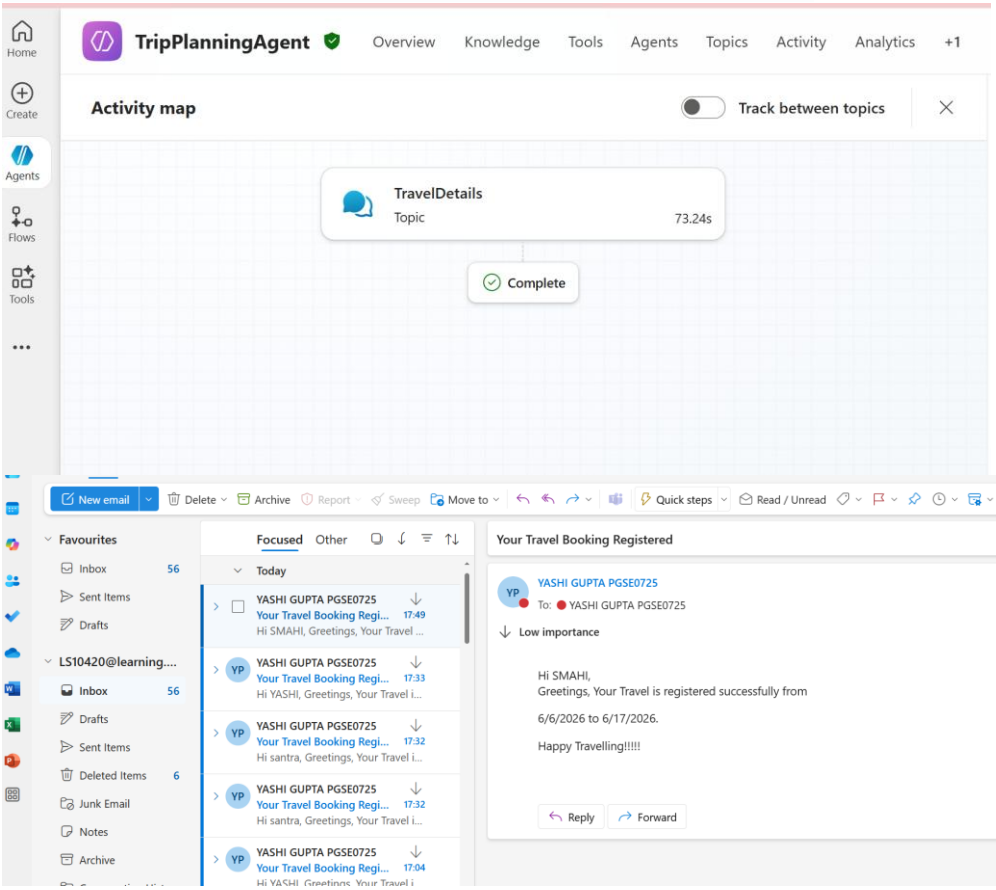

Hotel Prefrence?
2 minutes ago
5 Star
Travel interests?
2 minutes ago
Adventure
What is your trip destination?

LITHAN

EDUCLAAS®




What is your trip destination?
2 minutes ago
NEW YORK
What is your trip start date?
2 minutes ago
6 JUNE26
What is your trip start date?
Ask a question or describe what you need
0/2000


TripPlanningAgent
Overview
Knowledge
Tools
Agents
Topics
Activity
Analytics
+1
Activity map
Track between topics
TravelDetails
Topic
73.24s
Complete
Home
Create
Agents
Flows
Tools
New email
Delete
Archive
Report
Sweep
Move to
Quick steps
Read / Unread
Reminders
Favourites
Inbox 56
Sent Items
Drafts
LS10420@learning....
Inbox 56
Drafts
Sent Items
Deleted Items 6
Junk Email
Notes
Archive
Focused
Other
Today
YASHI GUPTA PGSE0725
Your Travel Booking Regi... 17:49
Hi SMAHI, Greetings, Your Travel ...
YASHI GUPTA PGSE0725
Your Travel Booking Regi... 17:33
Hi YASHI, Greetings, Your Travel i...
YASHI GUPTA PGSE0725
Your Travel Booking Regi... 17:32
Hi santra, Greetings, Your Travel i...
YASHI GUPTA PGSE0725
Your Travel Booking Regi... 17:32
Hi santra, Greetings, Your Travel i...
YASHI GUPTA PGSE0725
Your Travel Booking Regi... 17:04
Your Travel Booking Registered
YASHI GUPTA PGSE0725
To: YASHI GUPTA PGSE0725
Low importance
Hi SMAHI,
Greetings, Your Travel is registered successfully from
6/6/2026 to 6/17/2026.
Happy Travelling!!!!!
Reply
Forward
Reply
Reply all

Observation

During the project, I observed that breaking down the conversation into smaller, focused topics (TravellerDetails and TravelDetails) made the interaction smoother and easier to manage. Confirming user details before proceeding prevented data errors and improved overall reliability. Using choice options in questions (like flight and hotel preferences) also simplified user responses and helped standardize data storage.
I also noticed that integrating an online Excel sheet for booking records was very efficient for small to medium datasets, providing easy access and management without complex databases. However, care is needed in managing Excel APIs and variable data types to avoid errors. Automating confirmation emails strengthened user trust and provided immediate feedback, enhancing the agent's professional feel.
Testing was crucial, as even small issues like variable scope or type mismatches could cause flow breaks, highlighting the need for thorough validation.

Reflection

Working on this project has greatly expanded my knowledge of building intelligent conversational agents in a no-code environment. I have a better understanding of how to design dialog flows that are both user friendly and technically robust. I now understand the importance of modular topic design, variable management, and real-time data integration in creating meaningful user experiences.
Additionally, I learned that building AI solutions requires patience and attention to detail, especially when managing external integrations and data types. The project showed me how no-code platforms empower developers to build complex applications faster while still demanding careful testing and planning.
Overall, this journey has increased my confidence in using AI tools to solve real-world problems and inspired me to explore more advanced capabilities in conversational AI development.

Conclusion

This project successfully demonstrated the development of an AI-powered Travel Booking Agent using Microsoft Copilot Studio. Throughout the process, I learned how to design conversational topics that effectively collect and confirm user information, how to integrate external data sources like Excel Online and email services, and how to automate backend workflows with agent flows. The final solution can guide users seamlessly through booking their travel plans while ensuring data accuracy and providing prompt email confirmations. Overall, this project highlights the power of no-code AI platforms to build practical, intelligent applications that improve customer experiences and automate complex processes without deep programming knowledge.
This experience deepened my understanding of conversational AI design principles, including entity extraction, slot filling, conditional flows, and modular topic construction. It also gave me practical skills in integrating cloud services like OneDrive and Outlook with an AI agent to create a full-stack solution. I now appreciate the value of testing and iteration in building robust conversational agents that handle user input variations gracefully. This project reinforced the importance of user-centric design, error handling, and backend automation to deliver efficient, reliable, and scalable AI solutions.