
CAPSTONE PROJECT

INTERVIEW TRAINER AGENT

Presented By:

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COMPUTER SCIENCE & ENGINEERING**

OUTLINE

- ❖ **Problem Statement**
- ❖ **Proposed System/Solution**
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PROBLEM STATEMENT

- ❖ An Interview Trainer Agent, powered by RAG (Retrieval-Augmented Generation), prepares users for job interviews by generating tailored question sets and preparation strategies based on their profile name, experience level, and job role.
- ❖ It retrieves role-specific interview questions, industry expectations, behavioral scenarios, and HR guidelines from recruitment portals, professional networks, and company interview databases.
- ❖ Users can input their resume or job title, and the agent provides targeted questions, model answers, and improvement tips.
- ❖ It supports both technical and soft skill assessment, ensuring a comprehensive interview prep experience.
- ❖ This AI-driven assistant builds user confidence, sharpens responses, and increases success rates in competitive hiring environments.

PROPOSED SOLUTION

1. Role-Specific Technical and Behavioral Interview Questions

- ❖ What are some common data analysis techniques you use, and how do you apply them to real-world problems?

2. Sample Model Answers

- ❖ Some common data analysis techniques I use include data visualization, statistical modeling, and data mining. I apply these techniques to real-world problems by first understanding the business requirements and then using data to identify trends, patterns, and insights that can inform decision-making. For example, in a previous project, I used data visualization to help a client understand customer behavior and preferences, which led to the development of targeted marketing campaigns.

3. Current Industry Expectations and Must-Have Skills

- ❖ Current industry expectations for data analysts include the ability to work with large datasets, perform statistical analysis, and create data visualizations to communicate insights to stakeholders. Must-have skills for data analysts include proficiency in tools like Excel, SQL, and Tableau, as well as programming languages like Python and R.

4. Soft Skills to Focus On

- ❖ Communication: The ability to effectively communicate complex data insights to non-technical stakeholders is crucial for data analysts.

5. HR Round Preparation Tips

- ❖ Be prepared to talk about your passion for data analysis and how you stay up-to-date with industry trends and developments. Show enthusiasm for the role and the company, and highlight your unique strengths and qualifications.

SYSTEM APPROACH

- ❖ **Problem Understanding:** Defined the goal to predict daily bike rental demand based on weather, time, and seasonal data.
- ❖ **Data Collection:** Used a public dataset imported through IBM Cloud Object Storage with relevant features (e.g., temperature, season, humidity).
- ❖ **Data Preprocessing:** Cleaned data in IBM Watson Studio using Jupyter Notebook – handled nulls, normalized numeric values, and encoded categorical features.
- ❖ **Feature Selection:** Identified key influencing features using correlation matrix and tree-based model importance scores.
- ❖ **Model Selection:** Tested multiple models (Linear Regression, Random Forest, XGBoost) using both manual pipelines and IBM AutoAI.
- ❖ **Model Training:** Trained selected models using train-test split strategies inside IBM Watson Studio.
- ❖ **Model Evaluation:** Evaluated models with R^2 score, RMSE, and MAE to find the most accurate predictor.
- ❖ **Model Deployment:** Deployed the best model using IBM Watson Machine Learning for real-time predictions via a web UI.

RESULT

IBM watsonx

Upgrade ?

OMKAR ESWAR K's Account

Dallas

OE

Projects / - Interview Trainer Agent / Agent Lab

Share feedback β Unsaved ⌵ New agent + Deploy ⚡

Build

AI Model: llama-3-3-70b-instruct

⚙️ <

Setup

Configuration

Framework Architecture

LangGraph ReAct

Instructions [Advanced configuration](#)

Thank you! Based on your responses, please generate ALL of the following:

1. A list of 5 role-specific technical and behavioral interview questions relevant to the job role and experience level.

Knowledge

Tools

Add a tool Create custom tool

Added tools (5)

Google search

Retrieve information from the internet with the Google search engine.

DuckDuckGo search

Retrieve information from the internet with the DuckDuckGo search engine.

Agent preview

OE You: 05:48 PM

name "OMKAR ESWAR K" , Job Role "Data Analyst" , Experinnece "fresher" , Skills "python, sql, tableau, power bi"

watsonx Agent 05:48 PM

1. Role-Specific Technical and Behavioral Interview Questions:

1. What is your experience with data visualization tools like Tableau and Power BI?

2. How do you handle missing or incomplete data in a dataset?

3. Can you explain the concept of data normalization and how it's used in data analysis?

4. How do you stay up-to-date with new tools and technologies in the field of data analysis?

5. Can you walk me through your process for analyzing a complex dataset and identifying insights?

2. Sample Model Answers:

1. I have experience using Tableau to create interactive dashboards and Power BI to create reports. I've used these tools to visualize data and communicate insights to stakeholders.

2. When handling missing or incomplete data, I first try to understand the reason for the missing data. If it's due to a data quality issue, I work with the data team to resolve the issue. If it's due to a limitation in the data collection process, I use imputation methods to fill in the missing values.

3. Data normalization is the process of transforming data into a common scale to prevent differences in scales from affecting the analysis. I use normalization techniques like min-max scaling or standardization to ensure that all features are on the same scale.

4. I stay up-to-date with new tools and technologies by attending webinars, reading industry blogs, and participating in online forums. I also network with other professionals in the field to learn about their experiences and best practices.

5. When analyzing a complex dataset, I start by exploring the data to understand the distribution of variables and relationships between them. I then use statistical methods and data visualization

Type something...

CONCLUSION

- ❖ **Summary of Findings:** The Interview Trainer Agent provides a structured and effective preparation experience by offering role-specific technical questions, sample model answers, and current industry expectations for aspiring data analysts.
- ❖ **Effectiveness of the Solution:** The solution enhances user confidence by offering practical examples, expected skillsets, and HR interview tips, making it a comprehensive interview readiness tool.
- ❖ **Challenges Faced:** Some limitations include limited personalization, potential lack of real-time feedback, and difficulty adapting to changing industry demands without manual updates.
- ❖ **Future Improvements:** Incorporating AI-based adaptive questioning, personalized feedback, mock interviews with scoring, and integration with resume analyzers can significantly enhance its effectiveness.

FUTURE SCOPE

The future scope of the Interview Trainer Agent includes integrating AI to generate personalized questions based on the user's resume and learning progress. Adding mock interview simulations with instant feedback can enhance real-world readiness. Real-time industry updates and skill recommendations can keep the agent relevant. Voice-based interaction and multilingual support can improve accessibility. These improvements will make the system more adaptive, interactive, and effective for diverse users.

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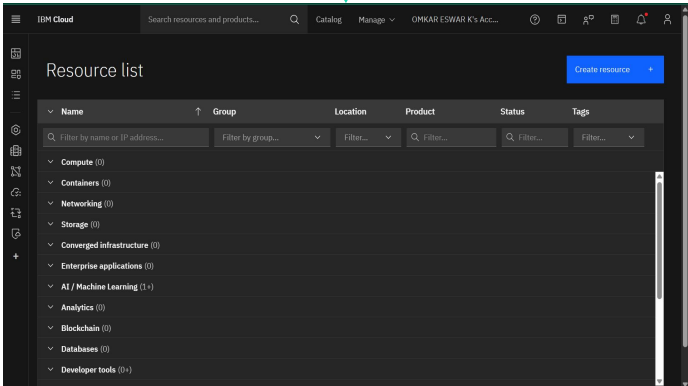
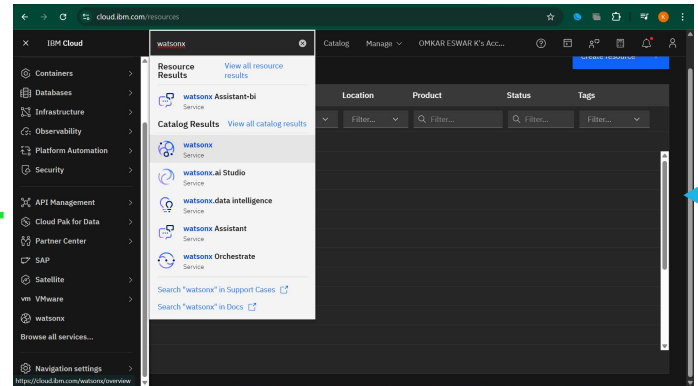
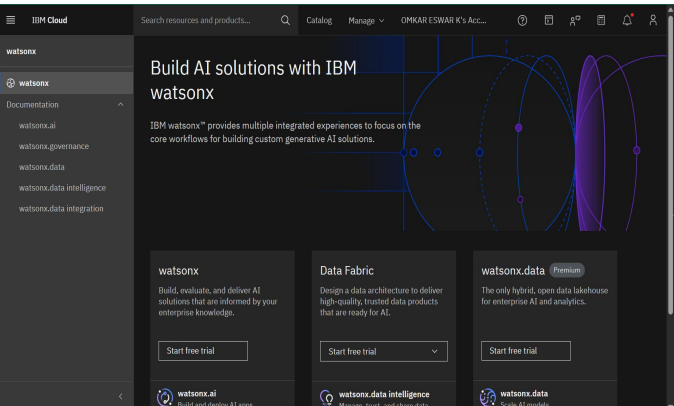
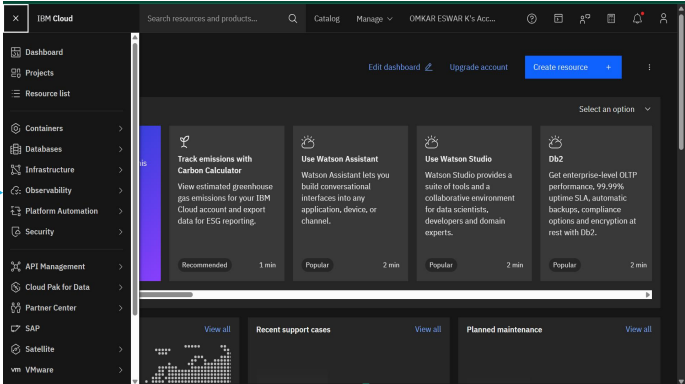
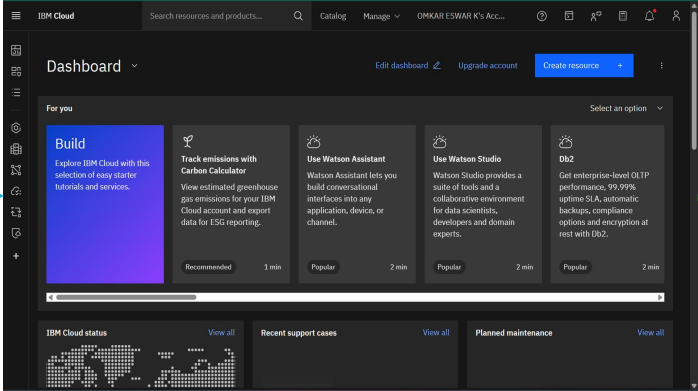
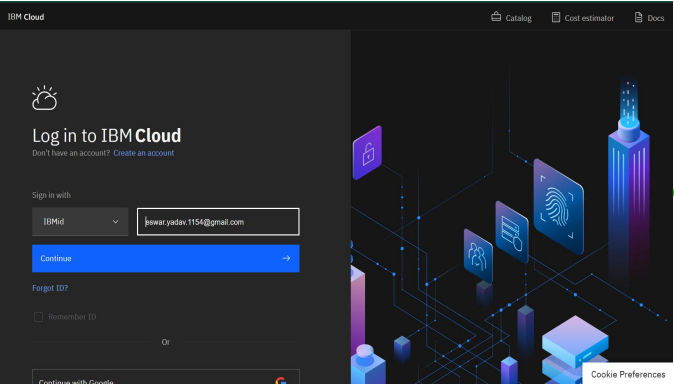
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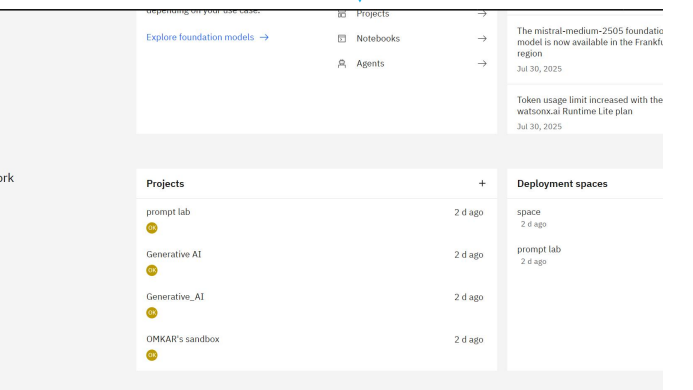
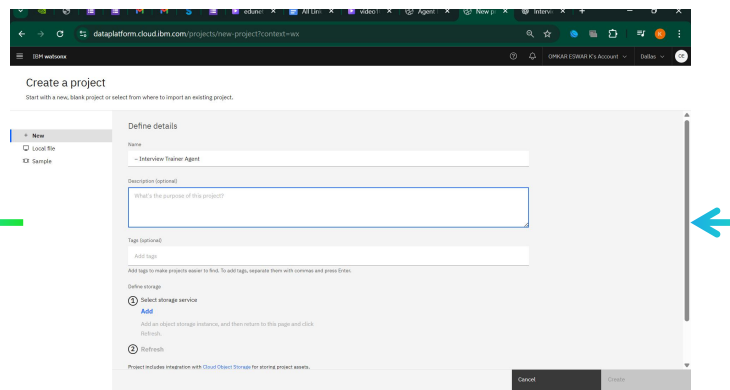
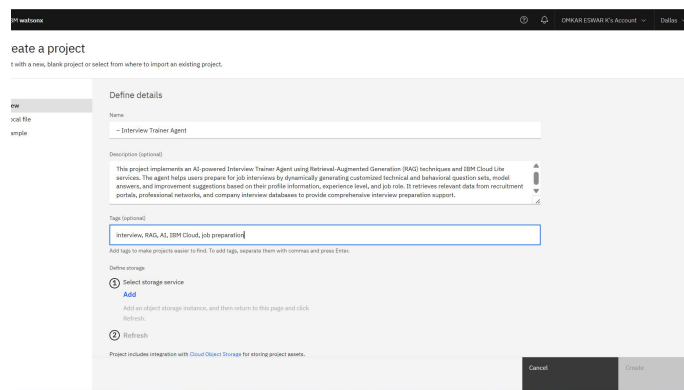
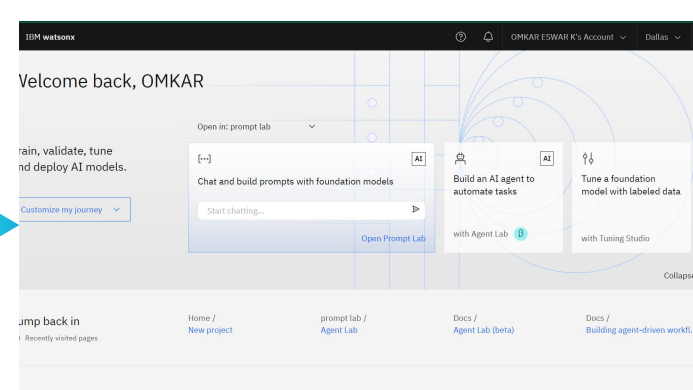
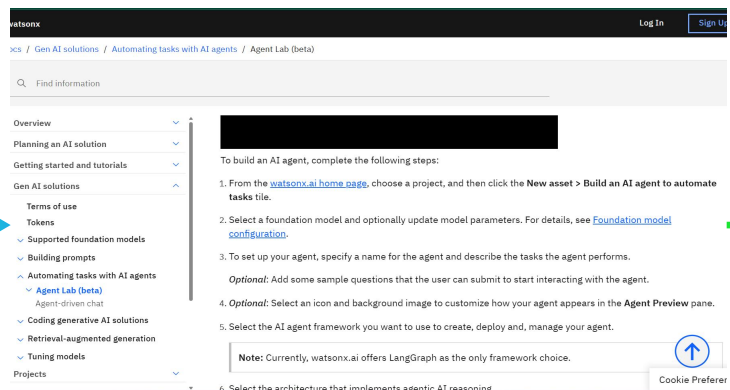
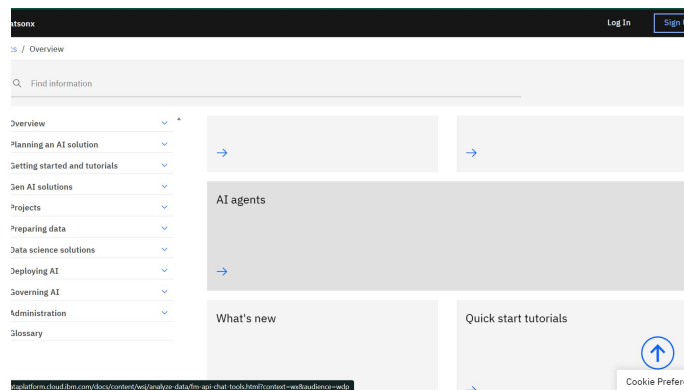
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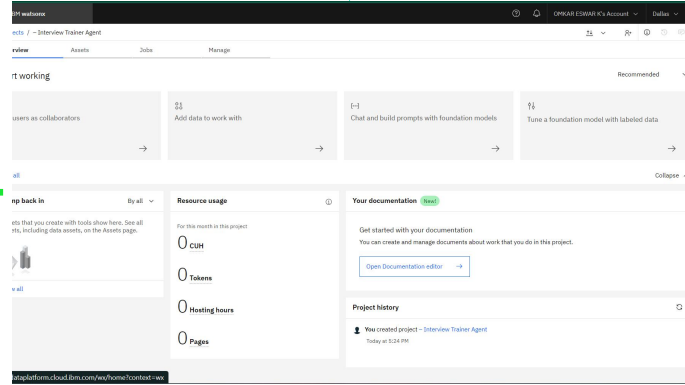
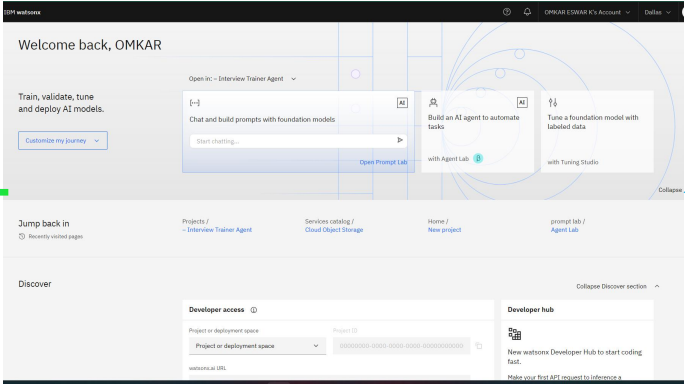
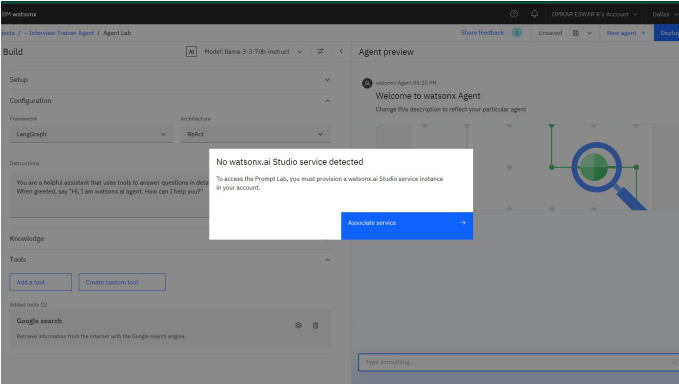
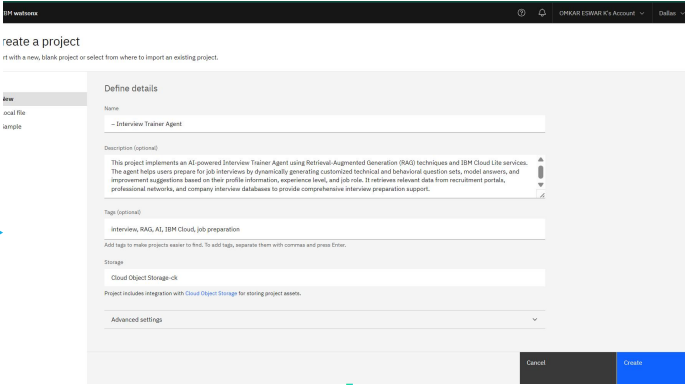
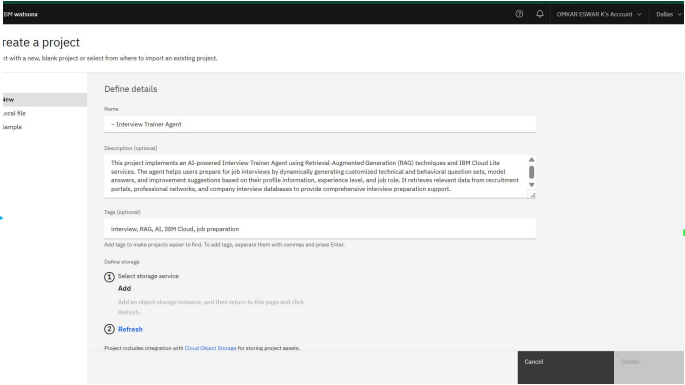
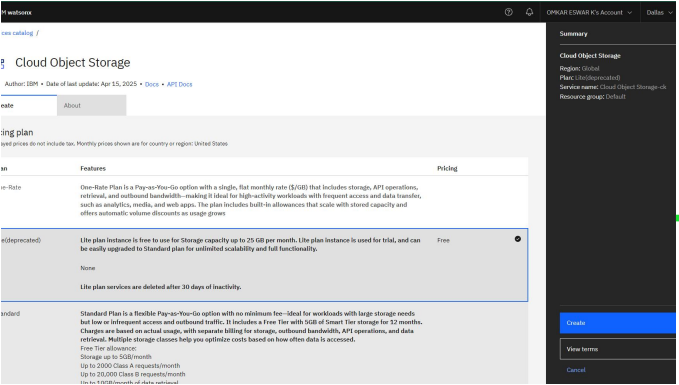
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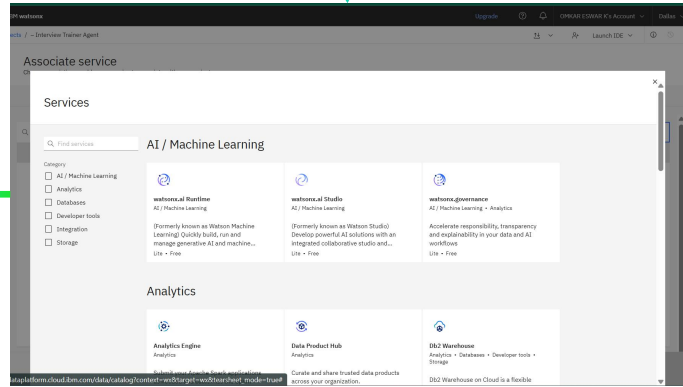
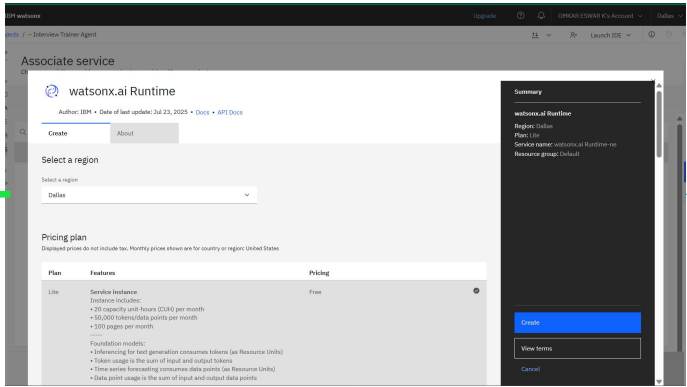
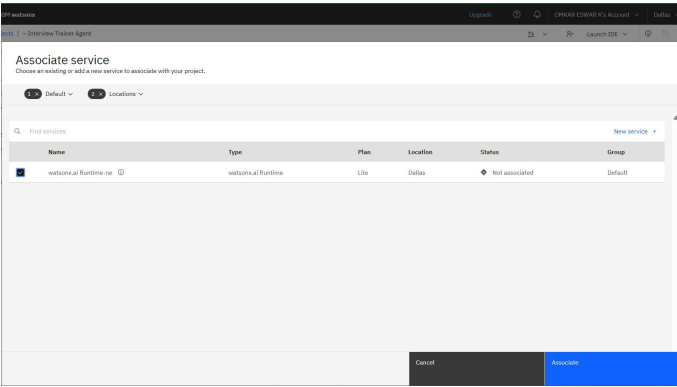
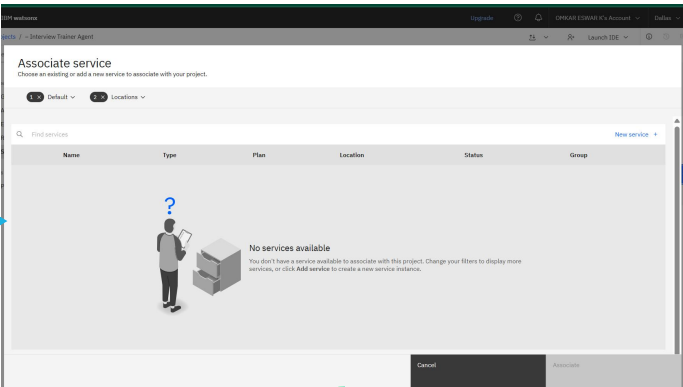
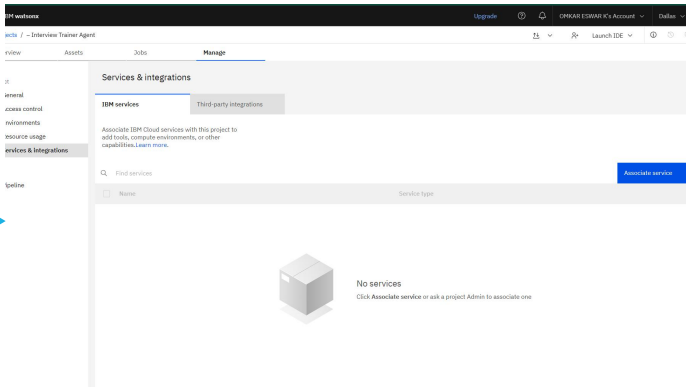
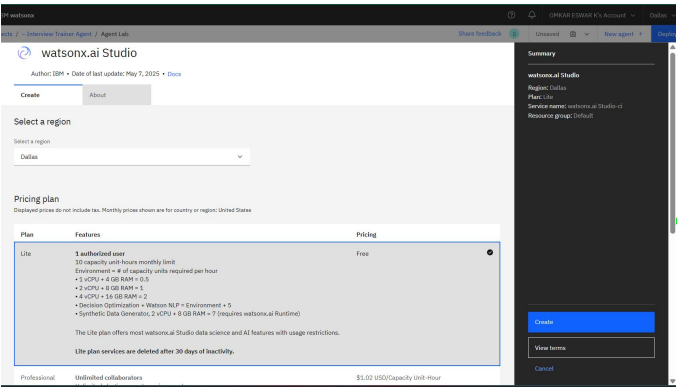
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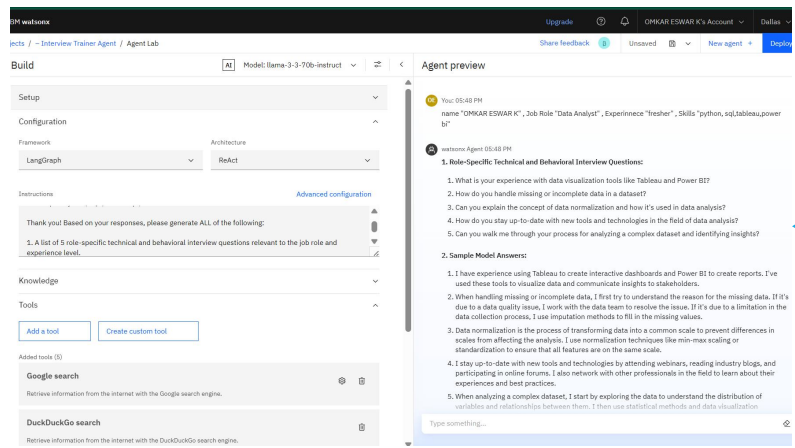
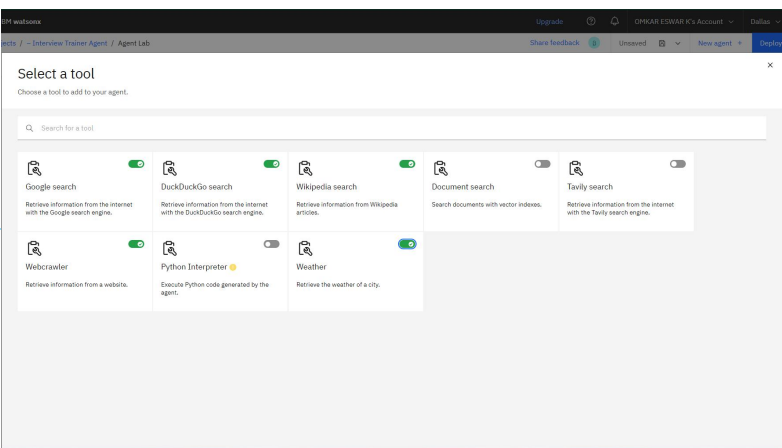
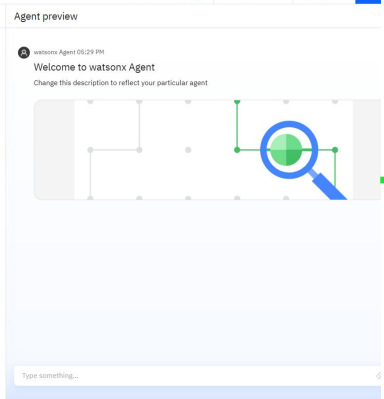
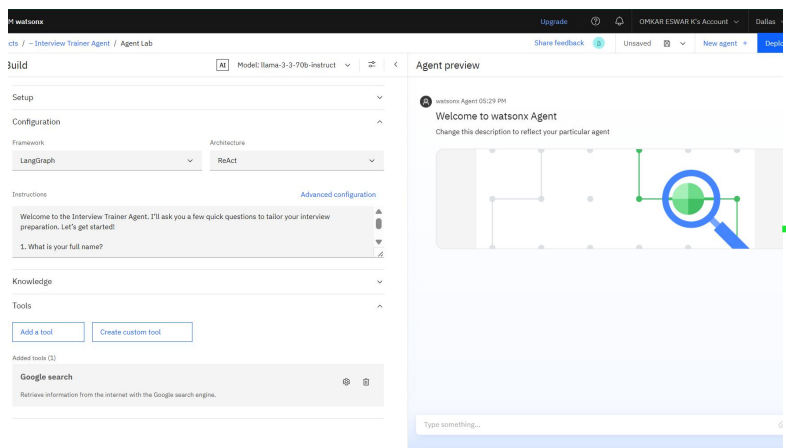
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