Lab 2b: Build an Agent with watsonx.ai and crew

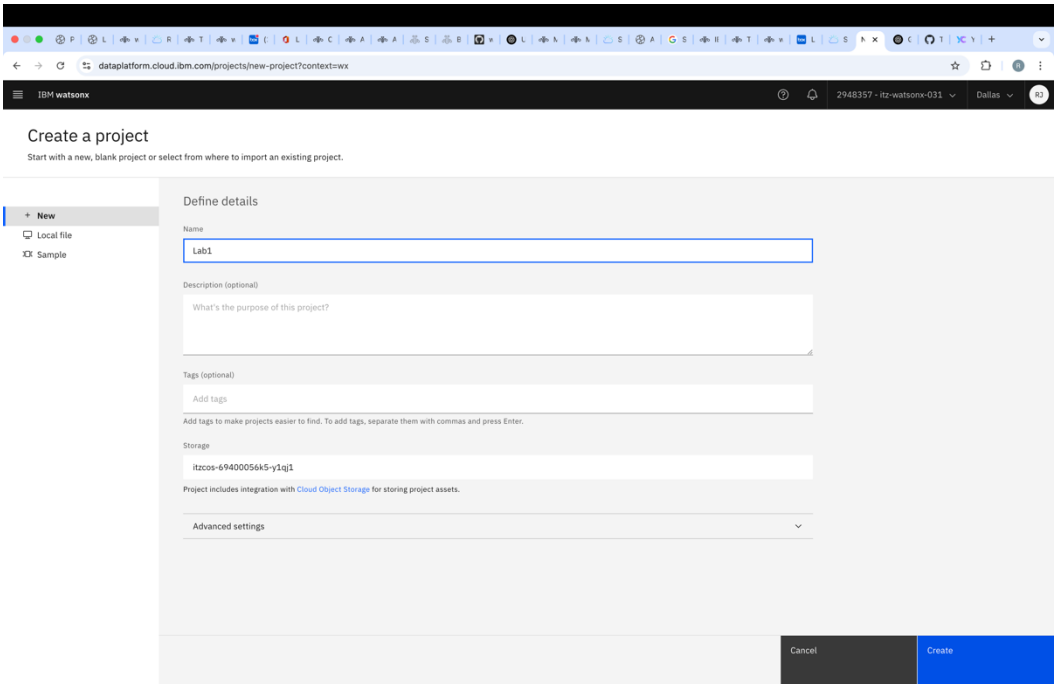
In this lab, you will build a **Sales Analyzer Agent** using **Watsonx.ai and Crew AI**. This agent will allow you to analyze historical sales data of products for procurement.

Note : Files used in lab can be downloaded from folder “Lab 2b”.

Steps to Create the Agent

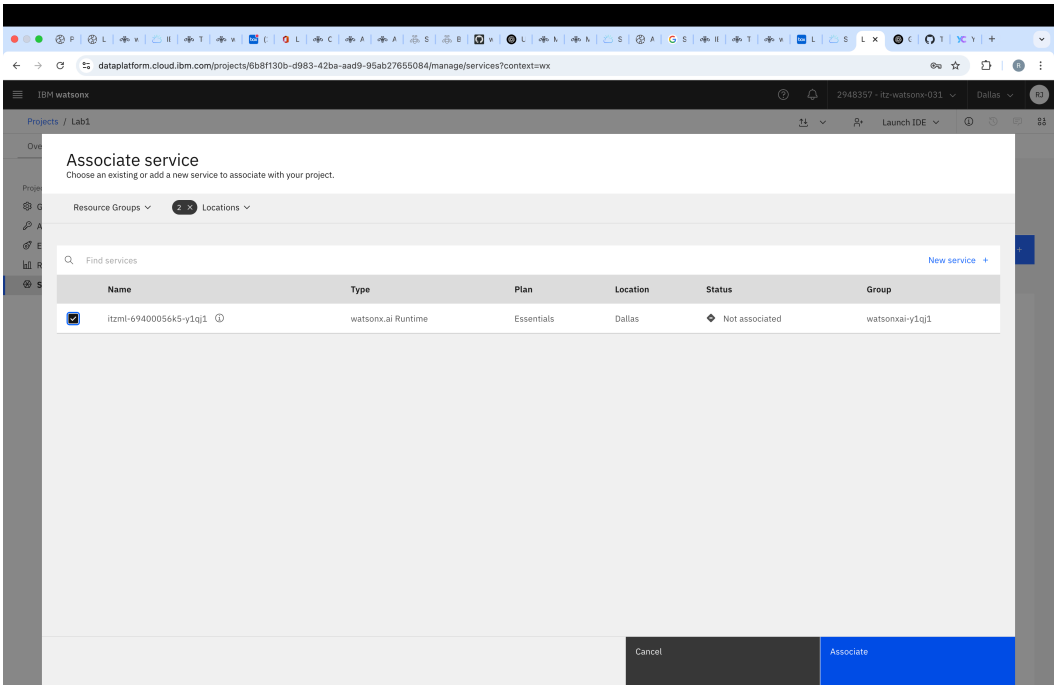
Step 1: Create a Project

- If this is your first time using this account, you should create a project before using Agent Lab. You ca use your existing project also.



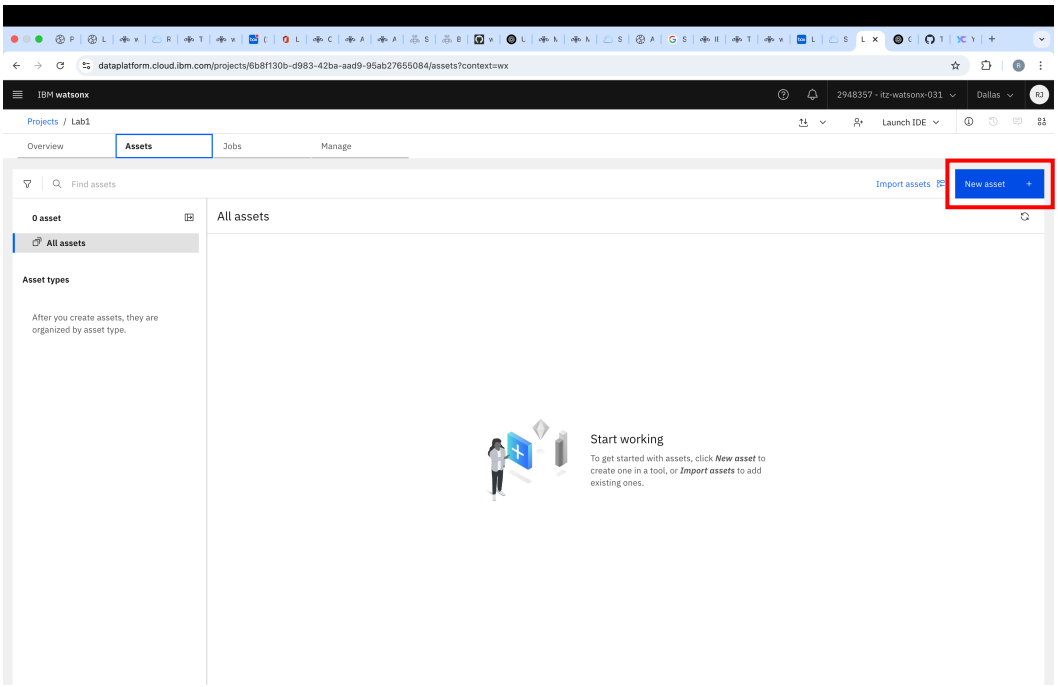
Step 2: Associate the Watsonx.ai Service (No need to repeat this step, if you already did previously)

- After creating the project, navigate to **Manage → Services & Integrations → Associate Service**.
- Select **Watsonx.ai** and associate it with your project.



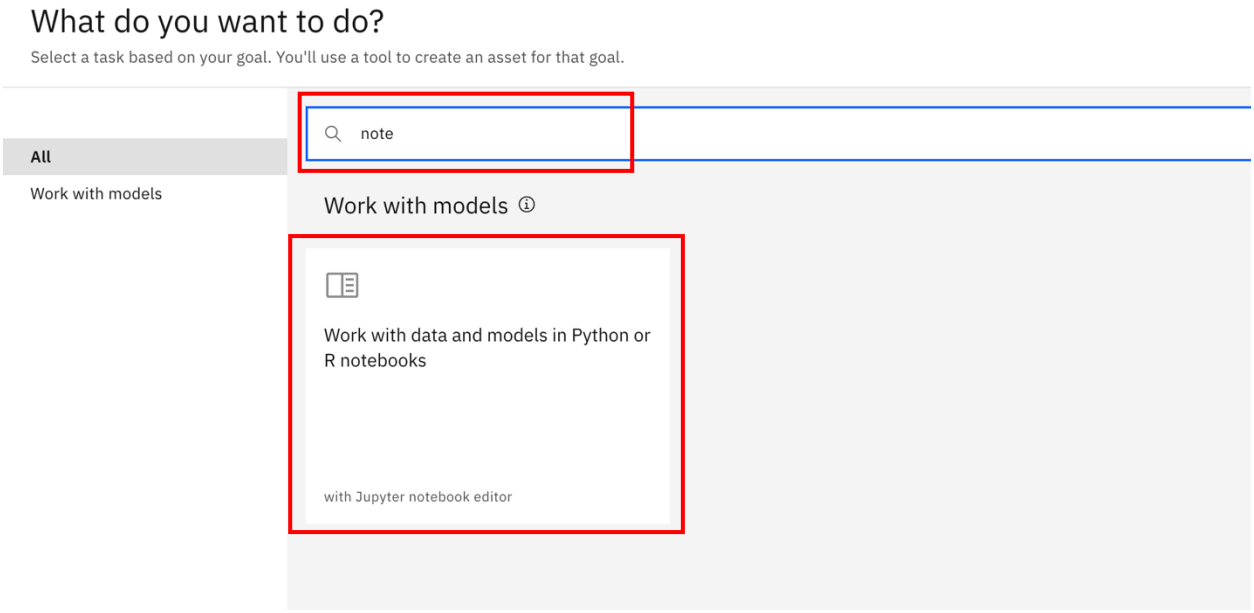
Step 3: Add a New Asset

- Go to the **Assets** tab and click **New Asset**.



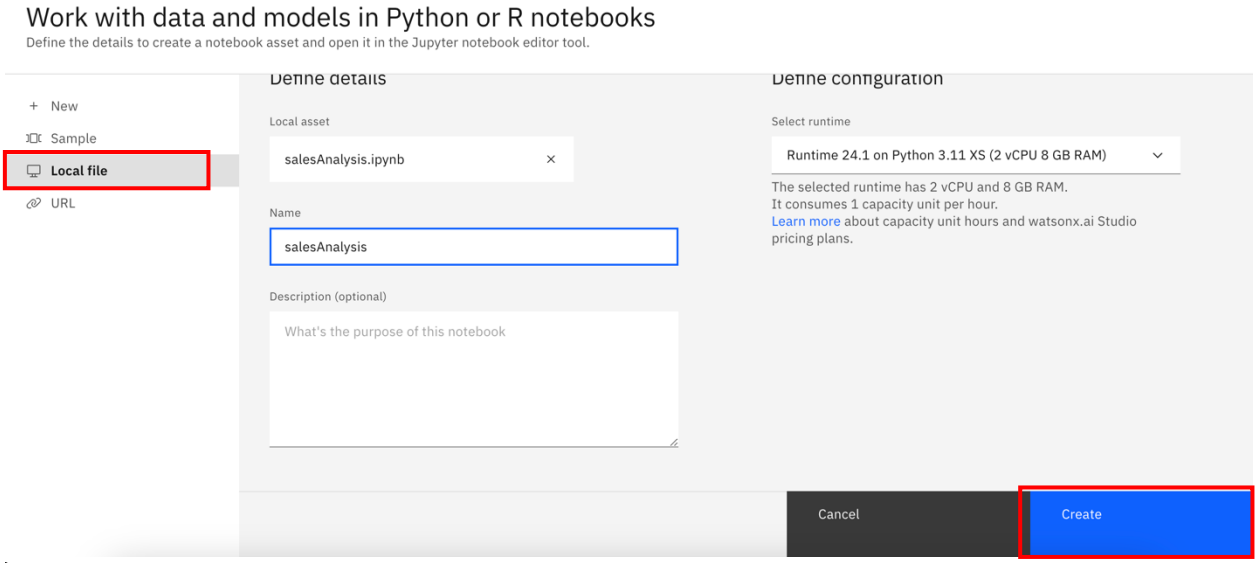
Step 4: Create the notebooks

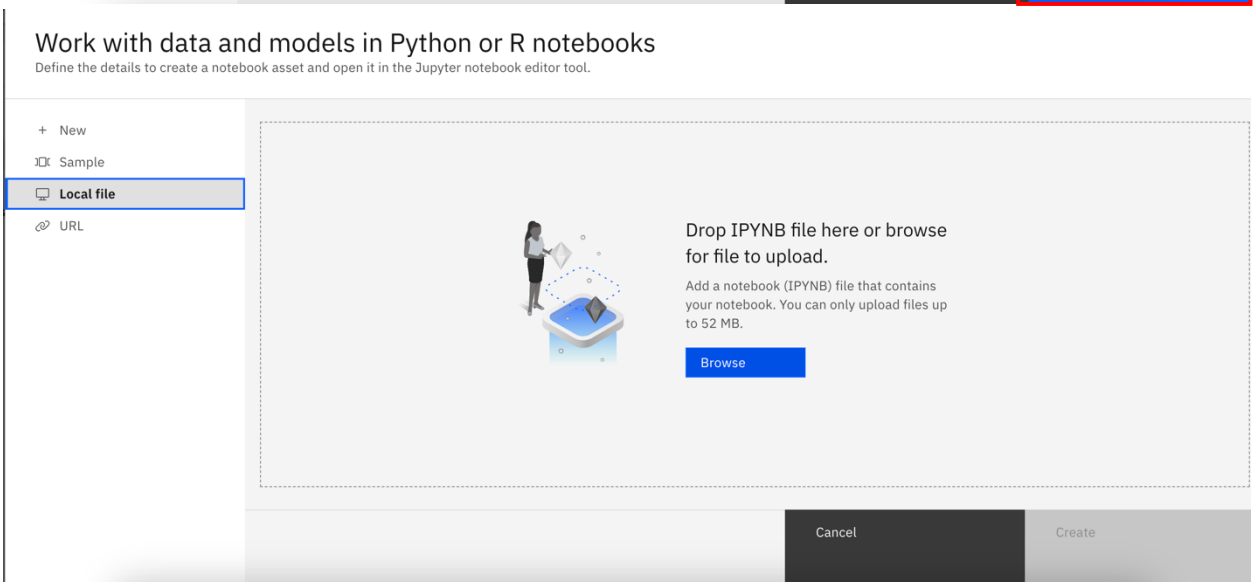
- Search for **"Work with data and models in Python or R notebooks"** and click to create a notebook.



Step 5: Upload the files

- Click on **Local File**.
- Upload notebook for vector index creation using the **Browse** option.
    - SalesAnalysis.ipynb
    - SalesAnalysis_query.ipynb
- Click on C**reate** to create the notebook.





Step 6: Configure the notebook

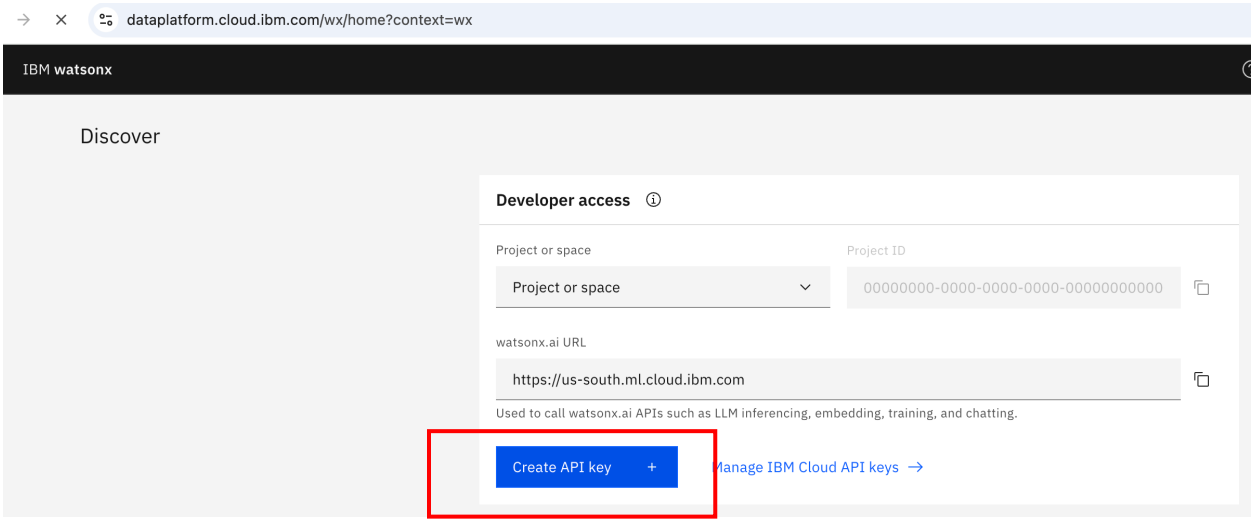
- Key in the required info to run the notebook
- Create an IBM Cloud API key or get it from the team and update the api_key to initialize the llm. Also verify the api_base value is as per your watsonx instance.
- DB_PASSWORD can be found in “DB Connection Details.boxnote” in the Lab 2b folder

```
[*]: DB_URL = "cb0cfae7-372d-4047-9bf9-882289cd9910.blijti4d0v0nkr55oei0.databases.appdomain.cloud"
DB_PORT = "32240"
DB_NAME = "marcht3db"
DB_USER = "ibm_cloud_d2c0138f_5cb3_499e_8043_6a959fb57913"
DB_PASSWORD = input("Enter password for the user:")
Enter password for the user:
```

```
[9]: nl2sql = NL2SQLTool(db_uri=f"postgresql://{DB_USER}:{DB_PASSWORD}@{DB_URL}:{DB_PORT}/{DB_NAME}")
```

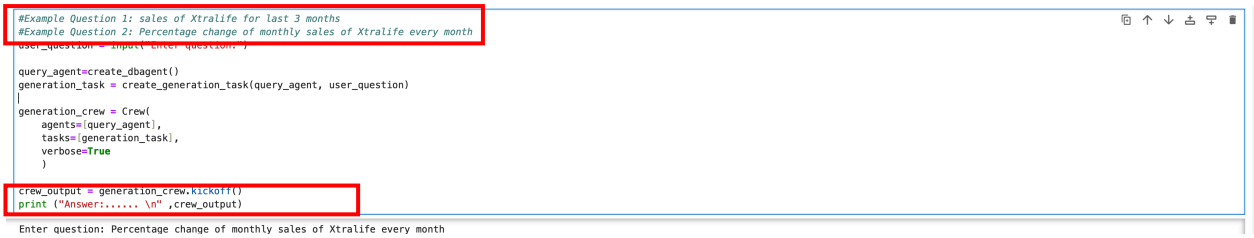
```
[10]:
# Initialize LLM
llm_db = LLM(
    api_key="YOUR-API-KEY",
    api_base = "https://us-south.ml.cloud.ibm.com",
    model="watsonx/meta-llama/llama-3-3-70b-instruct",
    params={
        "decoding_method": "greedy",
        "max_new_tokens": 15000,
        "temperature": 0,
        "repetition_penalty": 1.05
    }
)
```

- You can create an API key on the homepage. You can save the api_key in a file on your local machine for future use.



Step 7: Run the notebook

- Follow the cells of the notebook to create and run your sales analyzer agent. Some sample queries are already put as comment to test the outcome.



🚀 **Congratulations! You have successfully created an AI-powered Sales analyzer Agent powered by watsonx.ai and crew.ai. Happy Coding!** 🎯