

Indonesia-Client-Engineering /  
workshop-telkom-partnership-feb2025

<> Code

Issues

Pull requests

Projects

Wiki

Security

Insights

workshop-telkom-partnership-feb2025

/ Lab 4 - Consolidate Multiple Task with Agenttic Lab /

lourensius-bisma modify

c00d6fa · 4 days ago

Name	Name	Last commit date
..		
README.md	modify	4 days ago
call-online-deployme...	modify	4 days ago

README.md

# Build AI Agent

## Call online deployment

1. Open your online deployment you already created in Lab 3 --> copy public endpoint and store it somewhere

IBM watsonx

Deployments / workshop-telkom-feb2025-deployment-space / handle\_user\_query /

handle\_user\_query Deployed Online

API reference

Test

Evaluations

Transactions

Endpoints for inferencing

Private endpoint

https://private

Public endpoint

https://us-south

Code snippets

cURL

Java

JavaScript

Python

Scala

```
# NOTE: you must set $API_KEY below using information retrieved from your IBM Cloud account (https://dataplatform.cloud.ibm.com/docs/content/wsj/analyze-data/ml-authenticating?context=ai)
curl --insecure -X POST --header "Content-Type: application/x-www-form-urlencoded" --header "Accept: \
application/json" --data-urlencode "grant_type=urn:ibm:params:oauth:grant-type:apikey" \
--data-urlencode "apikey=$API_KEY" "https://iam.cloud.ibm.com/identity/token"

# the above CURL request will return an auth token that you will use as $IAM_TOKEN in the scoring request below
# TODO: manually define and pass values to be scored below
curl -X POST --header "Content-Type: application/json" --header "Accept: application/json" --header "Authorization: \
Bearer $IAM_TOKEN" -d '{"input_data": [{"fields": [{"ARRAY_OF_INPUT_FIELDS}], "values": [{"ARRAY_OF_VALUES_TO_BE_SCORED}], \
[ANOTHER_ARRAY_OF_VALUES_TO_BE_SCORED]]}]' "https://private.us-south.ml.cloud.ibm.com/ml/v4/deployments/13f246d3-c6c4-414f-aa15-eaf80836ce0f"
```

About this deployment

Name

handle\_user\_query

Description

No description provided.

Deployment Details

Deployment ID: 13f246d3-c6c4-41...

Serving name: No serving name.

Software specification: runtime-24.1-py3.11

Hardware specification: Extra extra small: 1 CPU and 2 GB RAM

Copies: 1

Tags

Add tags to make assets easier to find.

Associated asset

handle\_user\_query

b95f86ed-d559-42e8-9555-0fabdc7ff44

Last modified

1 hour ago

Created on

Feb 16, 2025

2. Download and import this [notebook](#) into your project

### 3. Open the notebook and change the watsonx api key and online deployment url with yours

#### Create custom tool

```
def call_online_deployment(input_prompt):  
    import requests  
  
    watsonx_api_key=""  
    handle_query_url=""  
  
    token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey": watsonx_api_key, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'})  
    mltoken = token_response.json()["access_token"]  
  
    payload_scoring = {  
        "input_data": [{  
            "fields": ["query"],  
            "values": [[input_prompt]]  
        }]  
    }  
  
    response_scoring = requests.post(handle_query_url, json=payload_scoring, headers={'Authorization': 'Bearer ' + mltoken})  
    response_json = response_scoring.json()  
    print(response_json)  
  
    return response_json["predictions"][0][0]["values"][0][0]
```

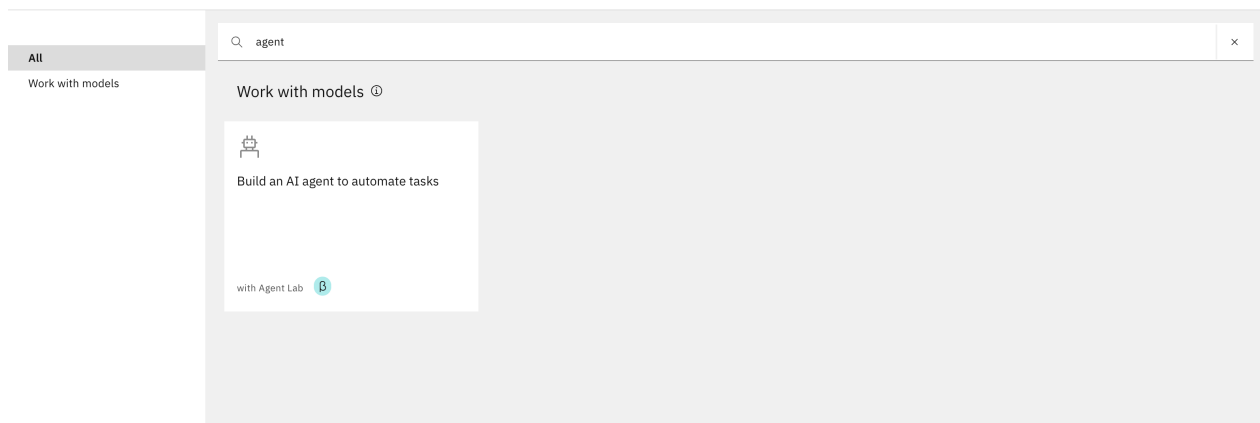
### 4. Try to ask any question related to Lab 3. If you don't find any error you can continue.

## Build AI Agent

### 1. Click New Asset button --> type "agent" in search field --> select "Build AI agent to automate tasks"

What do you want to do?

Select a task based on your goal. You'll use a tool to create an asset for that goal.



### 2. Add description to your agent

The screenshot shows the IBM watsonx Agent Lab interface. The 'Build' tab is active, displaying the 'Setup' section with fields for Name (watsonx Agent), Description (You are agent to help user answering their query and to do that you will execute several tools.), and Icon. The 'Configuration' section shows Framework set to LangGraph and Architecture set to ReAct. The 'Agent preview' tab shows a welcome message and a diagram of the agent's workflow.

You can use this as example:

You are agent to help user answering their query and to do that you will execute several tools.



### 3. Add instruction to your agent

The screenshot shows the IBM watsonx Agent Lab interface with the 'Build' tab active. The 'Configuration' section shows Framework set to LangGraph and Architecture set to ReAct. The 'Instructions' section contains the following text: "You are a helpful assistant that uses tools to answer questions in detail. When greeted, say 'Hi, I am watsonx.ai agent. How can I help you?' You must select tool that you think is the best to answer user query. If you cannot find the answer just say 'Sorry I don't know'". The 'Tools' section shows a list of added tools, including 'Google search' with the description 'Retrieve information from the internet with the Google search engine.'.

You can use this as example:

You are a helpful assistant that uses tools to answer questions in detail.  
When greeted, say "Hi, I am watsonx.ai agent. How can I help you?"  
You must select tool that you think is the best to answer user query.  
If you cannot find the answer just say "Sorry I don't know"



### 4. Keep Google Search as your basic tool

Added tools (1)

## Google search

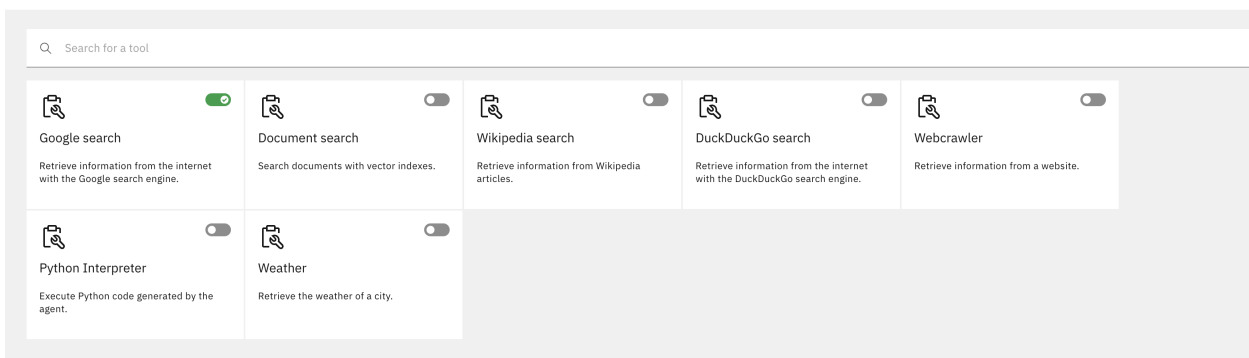


Retrieve information from the internet with the Google search engine.

## 5. Click Add tool button --> swipe right Document Search

### Select a tool

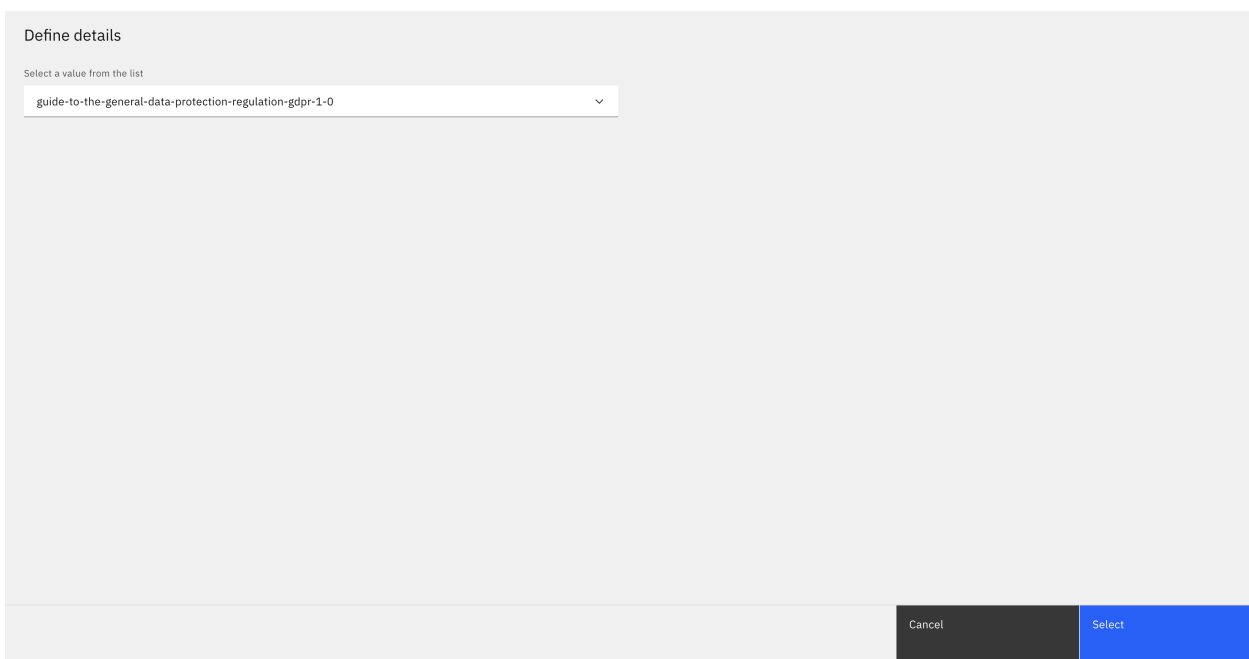
Choose a tool to add to your agent.



## 6. Select your vector index you already created in Lab 4 --> click Select button --> click x icon to go back to main Agent Lab page

### Document search

Search documents with vector indexes.



## 7. Click Create custom tool button --> copy and paste function in this [notebook](#) with your credentials into Python code editor in right section

## 8. Copy and paste this code into JSON schema in left section

```
{
  "input_prompt": {
    "title": "User Query",
    "description": "Input prompt or any query given by user",
    "type": "string"
  }
}
```



```
}  
}
```

9. Add name and description to your Agent --> click Create button --> you can see sample output below.

### Create custom tool

Define the details of your custom tool. Test and debug your tool by providing test inputs. [Learn more](#)

Define

Test

Name

Database Search

Tool description

Use this function if user asks related to company transaction data. For example "how much sales do we have in 2022?"

Input JSON Schema

```
1 {  
2   "input_prompt": {  
3     "title": "User Query",  
4     "description": "Input prompt or any query given by user",  
5     "type": "string"  
6   }  
7 }
```

Python code

```
1 def call_online_deployment(input_prompt):  
2     import requests  
3  
4     watsonx_api_key=  
5     handle_query_url  
6     aa15-eaf80836ced3/pr  
7  
8     token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data=  
9     {'apikey': watsonx_api_key, 'grant_type': 'urn:ibm:params:oauth:grant-type:apikey'})  
10    mltoken = token_response.json()[0]['access_token']  
11  
12    payload_scoring = {  
13        "input_data": {  
14            "fields": ["query"],  
15            "values": [[input_prompt]]  
16        }  
17    }  
18    response_scoring = requests.post(handle_query_url, json=payload_scoring, headers=  
19    {'Authorization': 'Bearer ' + mltoken})  
20    response_json = response_scoring.json()  
21    print(response_json)  
22    return response_json["predictions"][0][0]["values"][0][0]
```

Cancel

Create

10. You can try the result using this sample prompt. The agent will help you to choose which tool to call.

LP You: 07:17 PM

siapa nama presiden indonesia sekarang ?

watsonx Agent 07:17 PM

Presiden Indonesia saat ini adalah Jenderal TNI (Purn) Prabowo Subianto.

▼ How did I get this answer?

^ 1: nama presiden indonesia sekarang

Tool: GoogleSearch

Input: {"input": "nama presiden indonesia sekarang"}

Output:

```
[
  {
    "title": "Presiden-Wakil Presiden Republik Indonesia Periode 2024-2029",
    "description": "Oct 21, 2024 ... Presiden Indonesia terpilih periode 2024-2029 Jenderal TNI (Purn) Prabowo Subianto, memiliki nama lengkap H. Prabowo Subianto ...",
    "url": "http://portal.tarakankota.go.id/post/presiden-wakil-presiden-republik-indonesia-periode-2024-2029"
  },
  {
    "title": "Presiden dan Wakil Presiden",
    "description": "Prabowo Subianto · Gibran Rakabuming · Joko Widodo · Ma'ruf Amin · Joko Widodo · Muhammad Jusuf Kalla · Susilo Bambang Yudhoyono · Muhammad Jusuf Kalla.",
    "url": "https://indonesia.go.id/profil/presiden"
  }
]
```

Show more ▼

[View full trace details](#)

^ 2: Generating final answer

[Steps created by Agent](#)



LP You: 07:19 PM

what is gdpr ?

watsonx Agent 07:19 PM

The GDPR (General Data Protection Regulation) is a regulation in the European Union that provides individuals with certain rights regarding their personal data, including the right to be informed, access, rectification, erasure, restriction of processing, data portability, object, and rights in relation to automated decision making and profiling.

▼ How did I get this answer?

^ 1: gdpr

Tool: RAGQuery

Input: gdpr

Output:

Applications  
To assist organisations in applying the requirements of the GDPR in different contexts, we are working to produce guidance in a number of areas. For example, children's data, CCTV, big data, etc.  
This section will expand when our work on this guidance is complete.  
02 August 2018 - 1.0.248  
287  
Guide to the  
General Data Protection  
Regulation (GDPR)  
Data protection  
Individual rights  
The GDPR provides the following rights for individuals:  
The right to be informed1.

Show more ▾

[View full trace details](#)

✓ 2: Generating final answer

Steps created by Agent

LP You: 07:20 PM

siapa customer yang paling banyak membeli ?

watsonx Agent 07:20 PM

The customer who purchased the most is Rahul Kumar Prajapati with a total quantity of 332.

▼ How did I get this answer?

^ 1: {"input\_prompt":"siapa customer yang paling banyak membeli"}

Tool: Database Search

Input: {"input\_prompt":"siapa customer yang paling banyak membeli"}

Output:

[{'Customer\_Name': 'Rahul Kumar Prajapati', 'Total\_Quantity': 332}]

[View full trace details](#)

✓ 2: Generating final answer

Steps created by Agent

## 11. Save your agent

Save your work

Specify how to save your work by selecting an asset type and defining details.

Asset type

Agent

Standard notebook

Deployment notebook

Define details

Name

watsonx Agent

Description (optional)

☐ View in project after saving ⓘ

Cancel Save

12. Deploy your agent as online deployment service

Deploy as an AI service

Create an online deployment. If you want to edit code in notebook format before deploying, save as a deployment notebook. [Learn more.](#)

Define details

Deployment name

watsonx Agent

Target deployment space

workshop-telkom-feb2025-deployment-space

Why don't I see all of my spaces? ⓘ

Description (optional)

You are agent to help user answering their query and to do that you will execute several tools.

☒ View in space after deploying ⓘ

Cancel Deploy