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account to be blocked. [Learn more.](#)

Console.	Username google2876526_student@qwiklabs.net	
	Password TG959yrKDX	
	GCP Project ID qwiklabs-gcp-0855e773352d3560	

5. Click **Open Google Console**.

6. Click **Use another account** and copy/paste credentials for **this lab** into the prompts.

If you use other credentials, you'll get errors or **incur charges**.

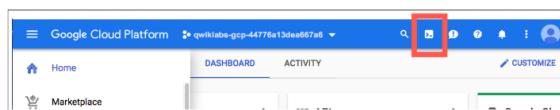
7. Accept the terms and skip the recovery resource page.

Do not click **End Lab** unless you are finished with the lab or want to restart it. This clears your work and removes the project.

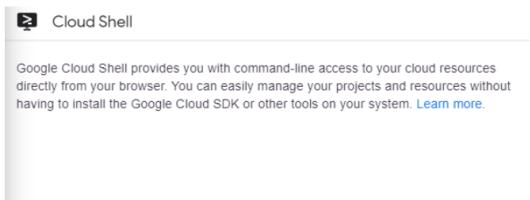
## Activate Cloud Shell

Cloud Shell is a virtual machine that is loaded with development tools. It offers a command-line access to your Google Cloud resources.

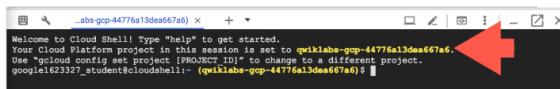
In the Cloud Console, in the top right toolbar, click the **Activate Cloud Shell** button.



Click **Continue**.



It takes a few moments to provision and connect to the environment. When you are connected, you are already authenticated, and the project is set to your **PROJECT\_ID**. For example:



gcloud is the command-line tool for Google Cloud. It comes pre-installed on Cloud Shell and supports tab-completion.

You can list the active account name with this command:

gcloud auth list

(Output)

Credentialed accounts:

(Example output)

Credentialed accounts:  
- google1e1623327\_student@qwiklabs.net

You can list the project ID with this command:

```
gcloud config list project
```



(Output)

```
[core]
project = <project_ID>
```

(Example output)

For full documentation of `gcloud` see the [gcloud command-line tool overview](#).

## Challenge Scenario



Cymbal Shops is an American retail chain headquartered in Minneapolis that sells homeware, electronics, and clothing.

Founded in 1974, Cymbal Shops started out as Cymbal Air, selling AC systems manufactured by Cymbal Group in Minnesota and neighboring states. The company quickly expanded into domestic merchandise in order to satisfy the need for quality products at an affordable price in the midst of a recession.

Cymbal Shops' broad product assortment was once a benefit - capturing planned purchases and last minute splurges. In recent years, however, the company has struggled to adapt to the acceleration in e-commerce. Digitally native companies are on the rise and Cymbal Shops must implement significant changes in order to keep pace and maintain relevance. Today, Cymbal Shops operates 714 stores across North America and reported \$15 billion in revenue in 2019. They currently employ 80,400 employees across the United States and Canada.

Cymbal Shops is a digitally transforming legacy retailer.

It is inspired by clients like: Bed Bath & Beyond, Best Buy, Home Depot, Nordstrom.

## Your challenge

Cymbal Shops is looking for proficiency in creating and deploying search applications using AI Applications and Conversational Agents. You work with Cymbal Shops, and are tasked with developing a custom search app utilizing the Dialogflow API to interact with a Vertex AI Data Store and present search results to users.

Key technologies and Google Cloud services to be utilized include:

- AI Applications
- Search Apps
- Agents
- Gemini

Upon successful completion of this challenge, you will demonstrate proficiency in:

- Utilizing AI Applications.
- Deploying Search Applications.

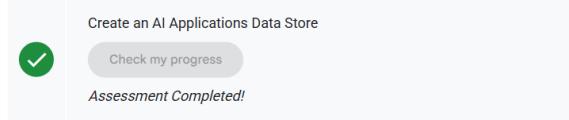
## Task 1. Create an AI Applications Data Store

In this section, you will utilize the AI Applications to create a Data Store. Data stores act as knowledge bases, storing information from websites and documents that your agent can use to answer user questions. Therefore in this task,

1. Enable [AI Applications API](#).
2. Create a data store that will be used by a generative agent to answer user questions. Configure the data store using the following details:

Property	Value
Data Store Name	cymbal-data-store
Data Source	Website Content
Website URLs	realpython.com , www.w3schools.com/python

Click **Check my progress** to verify the objectives.



## Task 2. Create and configure a Search App

In the previous section, you created a data store filled with valuable resources on Python programming. Now, let's leverage that knowledge base to build a custom search application specifically for programmers!

In this section, let's create a search application that allow users to ask questions directly

problems, and explore new concepts, all within a user-friendly search interface.

Therefore in this task:

1. Create an application of type `Search` with the following configurations. This application will use the data store named `cymbal-data-store`.

Property	Value
App Type	Search for your website
Enterprise edition features	Selected
Advanced LLM features	Selected
Name the app	cymbal-programming-search-app
Company Name	cymbal-python-programming-company
Location	global (Global)
Data Store	cymbal-data-store

**Note:** It may take a short time for the Data Store to be available. If you get an error, wait a couple of minutes and try again.

### Output:

The screenshot shows a search interface with a query bar containing "What is the syntax of a Loop in Python?". Below the query, several search results are listed, each with a URL and a brief description. The results include information about loops in Python, such as "Python Looping Through a Range", "Python break Keyword", "Python - Loop Dictionaries", and "Python If Statement".

**Python For Else**  
Note: The else block will NOT be executed if the loop is stopped by a break statement. Example: break the loop when i is 5, and see what happens with the else.

Click **Check my progress** to verify the objectives.

Create and configure a Search App

 Check my progress

Assessment Completed!

## Task 3. Deploy Search Widget to Public Webpage

- In the Google Cloud Console, navigate to **AI Applications > Integration**. To deploy the search widget, refer to the code snippet of the web application.
- Enable **public access** for the widget and add **storage.googleapis.com** to the **allowed domain**. Copy the code highlighted for your Web Application and save your changes.
- Use Cloud Shell to create a new file named `index.html`. Copy and paste the generated code into the `index.html` file.
- Create a Cloud Storage bucket named `qwiklabs-gcp-01-7c087c10e568`

Property	Value
Bucket Name	qwiklabs-gcp-01-7c087c10e568
Location	Multi-region(us)
Storage Class	Standard
Access Control	Uniform

01-008/c10e568 bucket.

- Upload the `index.html` file in your Google Cloud Storage bucket using the **gsutil** command.

7. Test your webpage by clicking on the public url:

<https://storage.googleapis.com/qwiklabs-gcp-01-7c087c10e568/index.html>

**Note:** It may take a few minutes for the allowed domain to be available. Please try again if you encounter an error.



storage.googleapis.com/qwiklabs-gcp-02-f1fa63050e78/index.html

What is the syntax of a loop in python?

Showing you 20 out of 7,000 results

<https://www.udemy.com/python-for-data-science/>

**Python For Loops**  
Python's for loop is for looping over a sequence (that is either a list, a tuple, a dictionary, a set or a string).

<https://www.udemy.com/python-for-data-science/>

**Python Conditions and If statements**  
Python supports the usual logical conditions from mathematics. These conditions can be used in several ways when writing decisions in Python code.

<https://www.udemy.com/python-for-data-science/>

**Python - Loop Lists**  
Looping Using List Comprehension. List Comprehension offers the shortest syntax for looping through lists.

<https://www.udemy.com/python-for-data-science/>

**Python Looping Through a Range**  
To loop through a set of code a specified number of times, we can use the range() function. The range() function returns a sequence of numbers, starting from 0 by default.

<https://www.udemy.com/python-for-data-science/>

**Python break Keyword**  
Breakout! Once in the Python for loop, find the loop if it is larger than 3: for i in range(0, 10): if i > 3: break print(i). Example: Break out of a while loop as soon as it finds a 3.

<https://www.udemy.com/python-for-data-science/>

**Python - If Statement**  
These conditions can be used in several ways, most commonly in "if statements" and loops. An "if statement" is written by using if followed by condition.

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**Invalid Syntax In Python: Common Reasons for SyntaxError – Real ...**  
The message "invalid syntax" and "SyntaxError: not properly nested" tells you figure out exactly what to do. If the code were a file, then Python would ...

<https://www.udemy.com/python-for-data-science/>

**Python For Else**  
Note: The else block will NOT be executed if the loop is stopped by a break statement. Example: break the loop when i is 5, and see what happens with the else.

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Click **Check my progress** to verify the objectives.

Deploy a Search Widget to Public Webpage

*Assessment Completed!*

## Congratulations!

Congratulations! You've successfully completed the challenge lab, adeptly demonstrating your ability to use AI Applications to deploy search applications.

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**Lab Last Tested December 12, 2024**

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