

# Assignment 1, Cloud Application Development

## Exercise 1: Setting Up Google Cloud SDK

```
You are signed in as: [aruqueen7@gmail.com].
```

```
This account has no projects.
```

```
Would you like to create one? (Y/n)? y
```

```
Google Cloud SDK 492.0.0
```

```
bq 2.1.8
```

```
core 2024.09.06
```

```
gcloud-crc32c 1.0.0
```

```
gsutil 5.30
```

```
arunaorazalina@MacBook-Pro-Aruna google-cloud-sdk %
```

```
Platform: [Mac OS X, arm] uname_result(system='Darwin', node='MacBook-Pro-Aruna.local', release='23.3.0', version='Darwin Kernel Version 23.3.0: Wed Dec 20 21:33:31 PST 2023; root:xnu-10002.01.6~7/RELEASE_ARM64_T8012', machine='arm64')
Locale: (None, 'UTF-8')
Python Version: [3.11.3 (v3.11.3:f3909b8bc8, Apr 4 2023, 20:12:10) [Clang 13.0.0 (clang-1300.0.29.30)]]
Python Location: [/Library/Frameworks/Python.framework/Versions/3.11/bin/python3]
OpenSSL: [OpenSSL 1.1.1t 7 Feb 2023]
Requests Version: [2.25.1]
urllib3 Version: [1.26.9]
Default CA certs file: [/Users/arunaorazalina/Desktop/google-cloud-sdk/lib/third_party/certifi/cacert.pem]
Site Packages: [Disabled]

Installation Root: [/Users/arunaorazalina/Desktop/google-cloud-sdk]
Installed Components:
  gsutil: [5.30]
  core: [2024.09.06]
  bq: [2.1.8]
  gcloud-crc32c: [1.0.0]
System PATH: [/Users/arunaorazalina/Desktop/google-cloud-sdk/bin:/Library/Frameworks/Python.framework/Versions/3.11/bin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/Library/Apple/usr/bin:/Applications/Wireshark.app/Contents/MacOS]
Python PATH: [/Users/arunaorazalina/Desktop/google-cloud-sdk/lib/third_party:/Users/arunaorazalina/Desktop/google-cloud-sdk/lib:/Library/Frameworks/Python.framework/Versions/3.11/lib/python3.11.zip:/Library/Frameworks/Python.framework/Versions/3.11/lib/python3.11:/Library/Frameworks/Python.framework/Versions/3.11/lib/python3.11/lib-dynload]
Cloud SDK on PATH: [True]
Kubectl on PATH: [False]

Installation Properties: [/Users/arunaorazalina/Desktop/google-cloud-sdk/properties]
User Config Directory: [/Users/arunaorazalina/.config/gcloud]
Active Configuration Name: [default]
Active Configuration Path: [/Users/arunaorazalina/.config/gcloud/configurations/config_default]

Account: [aruqueen7@gmail.com]
Project: [None]
Universe Domain: [googleapis.com]

Current Properties:
  [core]
    account: [aruqueen7@gmail.com] (property file)
    disable_usage_reporting: [False] (property file)

Logs Directory: [/Users/arunaorazalina/.config/gcloud/logs]
Last Log File: [/Users/arunaorazalina/.config/gcloud/logs/2024.09.16/19.44.24.947366.log]

git: [git version 2.39.3 (Apple Git-145)]
ssh: [OpenSSH_9.4p1, LibreSSL 3.3.6]
```

What command did you use to authenticate with your Google account?

**gcloud init**

How did you set the default project?

After the registration it requires me to choose the default project by id or by the name of the project

What information does the gcloud info command provide?

The gcloud info command provides detailed information about your current Google Cloud SDK configuration, including: SDK version, current project,

account you're authenticated with, default region and zone installation directory, available APIs

## Exercise 2: Exploring Cloud Shell

```
aruqueen7@cloudshell:~$ gcloud config list
[accessibility]
screen_reader = True
[component_manager]
disable_update_check = True
[compute]
gce_metadata_read_timeout_sec = 30
[core]
account = aruqueen7@gmail.com
disable_usage_reporting = False
[metrics]
environment = devshell
```

```
aruqueen7@cloudshell:~$ cd gcp-intro
aruqueen7@cloudshell:~/gcp-intro$ cloudshell edit README.txt
aruqueen7@cloudshell:~/gcp-intro$
```

<div>▼ ARUQUEEN7</div> <div>▼ gcp-intro</div> <div> ⓘ README.txt</div> <div>≡ README-cloudshell.txt</div> <div>≡ t</div>	<div>gcp-intro &gt; ⓘ README.txt</div> <div>1 this is just file</div> <div>2 <input type="text"/></div>
--	---

What is the default home directory in Cloud Shell?

username@cloudshell:/home

What tools are pre-installed in Cloud Shell?

Google Cloud SDK (gcloud, gsutil) Kubernetes tools (kubectl) Docker Git Python, Node.js, Go, and Java SDKs Text editors like vim, nano, and emacs Package managers (apt-get, npm, pip) Terraform Build tools like maven, gradle Other common Unix/Linux utilities like curl, wget, zip, etc.

How can you open the built-in code editor in Cloud Shell?

There are two ways to open the editor in cloud shell. First one, you just click the “open editor” button on the top right corner of the shell. The second one is to write “cloudshell edit”

### Exercise 3: Managing Projects with Google Cloud SDK

```
Use [my-first-gcp-project-435815] as project ID (Y/n)? y

Create in progress for [https://cloudresourcemanager.googleapis.com/v1/projects/my-first-gcp-project-435815].
Waiting for [operations/cp.8713479967687973600] to finish...done.
Enabling service [cloudapis.googleapis.com] on project [my-first-gcp-project-435815]...
Operation "operations/acet.p2-25742002101-dcbf8b64-73e8-4eab-87b7-678c844f5235" finished successfully.
[arunaorazalina@MacBook-Pro-Aruna google-cloud-sdk % gcloud config set project my-first-gcp-project-435815
Updated property [core/project].
[arunaorazalina@MacBook-Pro-Aruna google-cloud-sdk % gcloud projects describe my-first-gcp-project-435815
createTime: '2024-09-16T15:05:18.654430Z'
lifecycleState: ACTIVE
name: My First GCP Project
projectId: my-first-gcp-project-435815
projectNumber: '25742002101'
[arunaorazalina@MacBook-Pro-Aruna google-cloud-sdk % gcloud projects delete my-first-gcp-project-435815
Your project will be deleted.

Do you want to continue (Y/n)? y

ERROR: (gcloud.projects.delete) [aruqueen7@gmail.com] does not have permission to access projects instance [my-first-gcp-pr
mmand is authenticated as aruqueen7@gmail.com which is the active account specified by the [core/account] property
[arunaorazalina@MacBook-Pro-Aruna google-cloud-sdk % gcloud projects delete my-first-gcp-project-435815
Your project will be deleted.

Do you want to continue (Y/n)? y

Deleted [https://cloudresourcemanager.googleapis.com/v1/projects/my-first-gcp-project-435815].

You can undo this operation for a limited period by running the command below.
$ gcloud projects undelete my-first-gcp-project-435815

See https://cloud.google.com/resource-manager/docs/creating-managing-projects for information on shutting down projects.
[arunaorazalina@MacBook-Pro-Aruna google-cloud-sdk % █
```

How do you list all projects associated with your account?

**gcloud projects list**

What command is used to set a default project?

**gcloud config set project PROJECT\_ID**

How do you describe project metadata?

**gcloud projects describe PROJECT\_ID**

### Exercise 4: Using Cloud Shell for Basic Operations

```

aruqueen7@cloudshell:~/gcp-intro$ cd
aruqueen7@cloudshell:~$ mkdir -p myproject/src
mkdir -p myproject/tests
mkdir -p myproject/docs
aruqueen7@cloudshell:~$ touch myproject/src/main.py
aruqueen7@cloudshell:~$ nano myproject/src/main.py
aruqueen7@cloudshell:~$ touch myproject/tests/test_main.py
touch myproject/docs/README.md
aruqueen7@cloudshell:~$ cat myproject/src/main.py
print("Hello, GCP!")

aruqueen7@cloudshell:~$ rm myproject/tests/test_main.py
aruqueen7@cloudshell:~$ gsutil mb -l REGION gs://bucket03
Creating gs://bucket03/...
You are attempting to perform an operation that requires a project id, with none c
ering your default project id.
aruqueen7@cloudshell:~$ gsutil mb -l REGION gs://bucket03/
Creating gs://bucket03/...
You are attempting to perform an operation that requires a project id, with none c
ering your default project id.
aruqueen7@cloudshell:~$ gsutil cp myproject/src/main.py gs://bucket03/
Copying file:///myproject/src/main.py [Content-Type=text/x-python]...
AccessDeniedException: 403 The billing account for the owning project is disabled
aruqueen7@cloudshell:~$ gsutil ls gs://bucket03/

```

What command did you use to create the directory structure?

`mkdir -p myproject/src myproject/tests myproject/docs`

How did you upload a file to a Cloud Storage bucket?

`gsutil cp [FILE_PATH] gs://[BUCKET_NAME]/`

How can you list the contents of a Cloud Storage bucket?

`gsutil ls gs://[BUCKET_NAME]/`

## Exercise 5: Automating Tasks with Shell Scripts in Cloud Shell

```

aruqueen7@cloudshell:~$ cd gcp-intro
aruqueen7@cloudshell:~/gcp-intro$ nano setup.sh
aruqueen7@cloudshell:~/gcp-intro$ chmod +x setup.sh
aruqueen7@cloudshell:~/gcp-intro$ ./setup.sh
WARNING: [aruqueen7@gmail.com] does not have permission to access projects in
as aruqueen7@gmail.com which is the active account specified by the [core/ac
Are you sure you wish to set property [core/project] to ass1?

Do you want to continue (Y/n)? y

Updated property [core/project].
[accessibility]
screen_reader = True
[component_manager]
disable_update_check = True
[compute]
gce_metadata_read_timeout_sec = 30
[core]
account = aruqueen7@gmail.com
disable_usage_reporting = False
project = ass1
[metrics]
environment = devshell

Your active configuration is: [cloudshell-24832]
Setup complete!
aruqueen7@cloudshell:~/gcp-intro (ass1)$ ls my_new_project
welcome.txt
aruqueen7@cloudshell:~/gcp-intro (ass1)$ █

```

What command did you use to make the script executable?

`chmod +x setup.sh`

How did you ensure the script was executed correctly?

Firstly, I ran the script by using `./setup.sh` command. After running I checked if the expected directory and file is created or not. Moreover, I check the Gcloud configuration using this command `gcloud config list`

What steps did your script automate?

The script automated the following tasks:

Created a new directory

Created a simple text file in that directory

Set up a basic Google Cloud configuration by setting a default project.