Tsoy Alexandra report Assigment 1

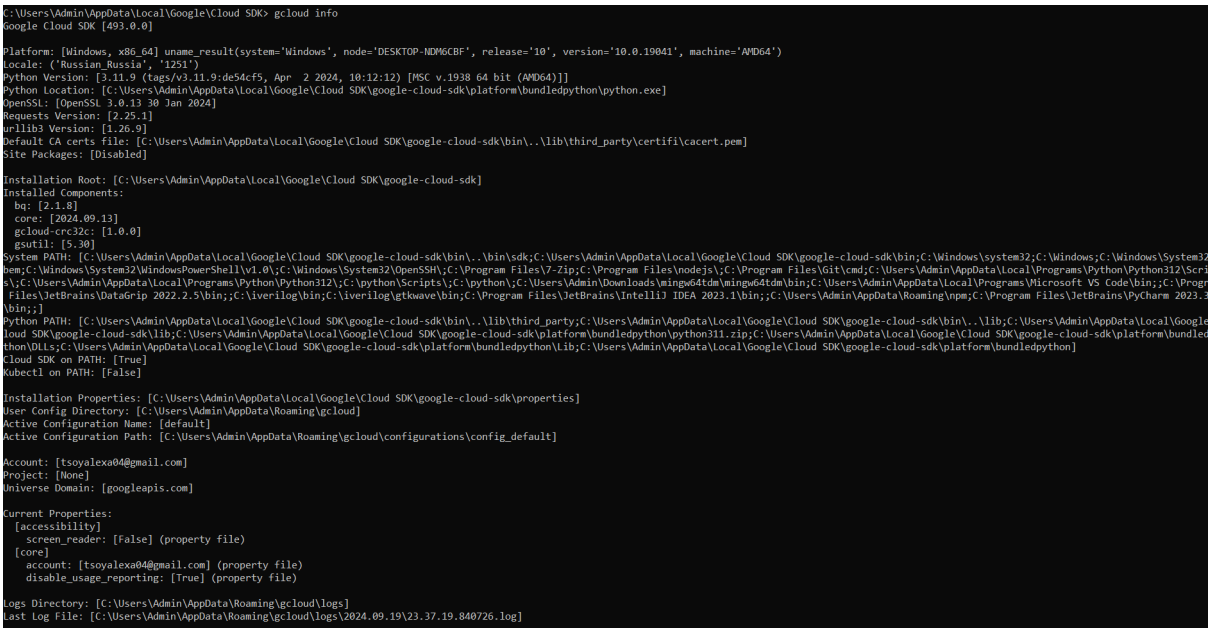
Exercise 1: Setting Up Google Cloud SDK

Verify the installation by running `gcloud version` (1) and `gcloud info` (2).

```
C:\Users\Admin\AppData\Local\Google\Cloud SDK>gcloud version
Google Cloud SDK 493.0.0
bq 2.1.8
core 2024.09.13
gcloud-crc32c 1.0.0
gsutil 5.30

C:\Users\Admin\AppData\Local\Google\Cloud SDK>_
```

(1)



```
C:\Users\Admin\AppData\Local\Google\Cloud SDK> gcloud info
Google Cloud SDK [493.0.0]

Platform: [Windows, x86_64] uname_result(system='Windows', node='DESKTOP-NDM6CBF', release='10', version='10.0.19041', machine='AMD64')
Locale: ('Russian_Russia', '1251')
Python Version: [3.11.9 (tags/v3.11.9:de54cf5, Apr  2 2024, 10:12:12) [MSC v.1938 64 bit (AMD64)]]
Python Location: [C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\platform\bundledpython\python.exe]
OpenSSL: [OpenSSL 3.0.13 30 Jan 2024]
Requests Version: [2.25.1]
urllib3 Version: [1.26.9]
Default CA certs file: [C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\bin\..\lib\third_party\certifi\cacert.pem]
Site Packages: [Disabled]

Installation Root: [C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk]
Installed Components:
  bq: [2.1.8]
  core: [2024.09.13]
  gcloud-crc32c: [1.0.0]
  gsutil: [5.30]
System PATH: [C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\bin\..\bin\sdk;C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\bin;C:\Windows\system32;C:\Windows;C:\Windows\System32
bem;C:\Windows\System32\WindowsPowerShell\v1.0\;C:\Windows\System32\OpenSSH\;C:\Program Files\7-Zip;C:\Program Files\nodejs\;C:\Program Files\Git\cmd;C:\Users\Admin\AppData\Local\Programs\Python\Python312\Scri
s\;C:\Users\Admin\AppData\Local\Programs\Python\Python312\;C:\python\Scripts\;C:\python\;C:\Users\Admin\Downloads\mingw64tdm\mingw64tdm\bin;C:\Users\Admin\AppData\Local\Programs\Microsoft VS Code\bin;;C:\Progr
 Files\JetBrains\DataGrip 2022.2.5\bin;;C:\iverilog\bin;C:\iverilog\gtkwave\bin;C:\Program Files\JetBrains\IntelliJ IDEA 2023.1\bin;;C:\Users\Admin\AppData\Roaming\npm;C:\Program Files\JetBrains\PyCharm 2023.3
\bin;;]
Python PATH: [C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\bin\..\lib\third_party;C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\bin\..\lib;C:\Users\Admin\AppData\Local\Google
loud SDK\google-cloud-sdk\lib;C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\platform\bundledpython\python311.zip;C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\platform\bundled
thon\DLLs;C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\platform\bundledpython\Lib;C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\platform\bundledpython]
Cloud SDK on PATH: [True]
Kubectl on PATH: [False]

Installation Properties: [C:\Users\Admin\AppData\Local\Google\Cloud SDK\google-cloud-sdk\properties]
User Config Directory: [C:\Users\Admin\AppData\Roaming\gcloud]
Active Configuration Name: [default]
Active Configuration Path: [C:\Users\Admin\AppData\Roaming\gcloud\configurations\config_default]

Account: [tsoyalexa04@gmail.com]
Project: [None]
Universe Domain: [googleapis.com]

Current Properties:
  [accessibility]
    screen_reader: [False] (property file)
  [core]
    account: [tsoyalexa04@gmail.com] (property file)
    disable_usage_reporting: [True] (property file)

Logs Directory: [C:\Users\Admin\AppData\Roaming\gcloud\logs]
Last Log File: [C:\Users\Admin\AppData\Roaming\gcloud\logs\2024.09.19\23.37.19.840726.log]
```

(2)

Questions:

1. What command did you use to authenticate with your Google account?
   The command is `gcloud init` (for initial setup and authentication) or `gcloud auth login` (for re-authentication).

2. How did you set the default project?
   Set the default project by running the command gcloud init and selecting my desired project from the list or used the command `gcloud config set project PROJECT_ID`, where `PROJECT_ID` is the identifier of my project.

3. What information does the gcloud info command provide?

The `gcloud info` command provides information such as the version of the Google Cloud SDK, the current project, details about the authenticated account, and paths to components and configurations, helping to quickly assess the current settings and environment state.

Exercise 2: Exploring Cloud Shell

- Explore the environment by listing files and checking the available tools.

```
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ ls
README-cloudshell.txt
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ gcloud components list

Your current Google Cloud CLI version is: 489.0.0
The latest available version is: 493.0.0

Components

Status: Update Available
Name: Google Cloud CLI Core Libraries
ID: core
Size: 20.0 MiB

Status: Update Available
Name: gcloud Alpha Commands
ID: alpha
Size: < 1 MiB

Status: Update Available
Name: gcloud Beta Commands
ID: beta
Size: < 1 MiB

Status: Update Available
Name: kubectl
ID: kubectl
Size: < 1 MiB

Status: Not Installed
Name: Appctl
ID: appctl
Size: 21.0 MiB
```

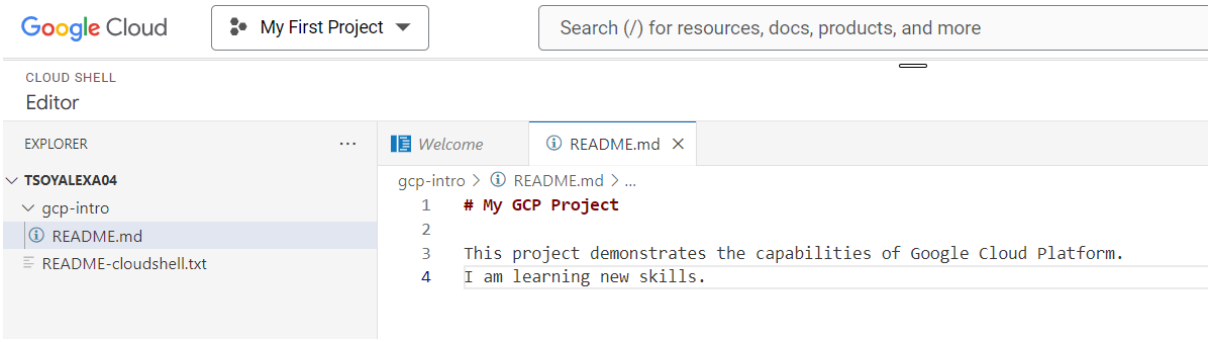
- Run the command `gcloud config list` to see your current configuration.

```
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ gcloud config list
[accessibility]
screen_reader = True
[component_manager]
disable_update_check = True
[compute]
gce_metadata_read_timeout_sec = 30
[core]
account = tsoyalexa04@gmail.com
disable_usage_reporting = False
project = silent-circlet-436118-t9
[metrics]
environment = devshell
```

- Create a directory named `gcp-intro` and navigate into it.

```
Your active configuration is: [cloudshell-12528]
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ mkdir gcp-intro
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ cd gcp-intro
tsoyalexa04@cloudshell:~/gcp-intro (silent-circlet-436118-t9)$
```

- Use the built-in code editor to create a simple `README.md` file describing your GCP project.



Questions:

1. What is the default home directory in Cloud Shell?

   The default home directory in Cloud Shell is `/home/USER`, where USER is your username.

2. What tools are pre-installed in Cloud Shell?

   Pre-installed tools include `gcloud`, `gsutil`, `kubectl`, `git`, and various programming languages like Python and Node.js.

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

   Open the built-in code editor by clicking on the three vertical dots in the Cloud Shell panel and selecting "Open Editor."

Exercise 3: Managing Projects with Google Cloud SDK

- List all the projects associated with your Google account using `gcloud projects list`.

```
C:\Users\Admin\AppData\Local\Google\Cloud SDK>gcloud projects list
PROJECT_ID                  NAME              PROJECT_NUMBER
able-rune-436118-j5         My First Project  139481738921
silent-circlet-436118-t9    My First Project  398508195760

C:\Users\Admin\AppData\Local\Google\Cloud SDK>
```

- Create a new project with the command `gcloud projects create PROJECT_ID --name="My First GCP Project"`.

```
C:\Users\Admin\AppData\Local\Google\Cloud SDK>gcloud projects create alexa-first-prj --name="My First GCP Project"
Create in progress for [https://cloudresourcemanager.googleapis.com/v1/projects/alexa-first-prj].
Waiting for [operations/cp.7143236189599819264] to finish...done.
Enabling service [cloudapis.googleapis.com] on project [alexa-first-prj]...
Operation "operations/acat.p2-98917452638-3ef7c4e9-d5d8-45bc-ab16-001bff984397" finished successfully.

C:\Users\Admin\AppData\Local\Google\Cloud SDK>
```

- Set this new project as your default project.

```
C:\Users\Admin\AppData\Local\Google\Cloud SDK>gcloud config set project alexa-first-prj
Updated property [core/project].

C:\Users\Admin\AppData\Local\Google\Cloud SDK>
```

- Explore project metadata using `gcloud projects describe PROJECT_ID`.

```
C:\Users\Admin\AppData\Local\Google\Cloud SDK>gcloud projects describe alexa-first-prj
createTime: '2024-09-19T19:27:12.962873Z'
lifecycleState: ACTIVE
name: My First GCP Project
projectId: alexa-first-prj
projectNumber: '98917452638'

C:\Users\Admin\AppData\Local\Google\Cloud SDK>
```

- Delete the project using `gcloud projects delete PROJECT_ID` after completing the exercise.

```
C:\Users\Admin\AppData\Local\Google\Cloud SDK>gcloud projects delete alexa-first-prj
Your project will be deleted.

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

Deleted [https://cloudresourcemanager.googleapis.com/v1/projects/alexa-first-prj].

You can undo this operation for a limited period by running the command below.
    $ gcloud projects undelete alexa-first-prj

See https://cloud.google.com/resource-manager/docs/creating-managing-projects for information on shutting down projects.

C:\Users\Admin\AppData\Local\Google\Cloud SDK>
```

Questions:

1. How do you list all projects associated with your account?

   You can list all projects associated with your account by using the command `gcloud projects list`.

2. What command is used to set a default project?

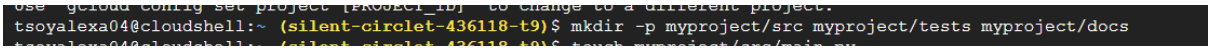
The command used to set a default project is `gcloud config set project PROJECT_ID`, where you replace `PROJECT_ID` with the ID of your project.

3. How do you describe project metadata?

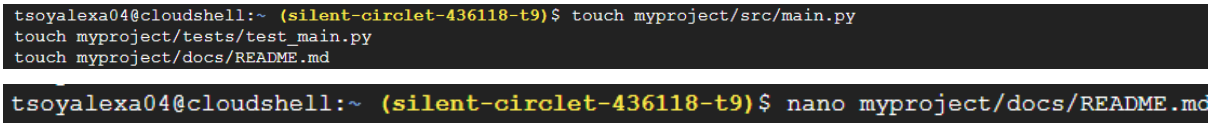
   You can describe project metadata by using the command `gcloud projects describe PROJECT_ID`, where you specify the project ID.

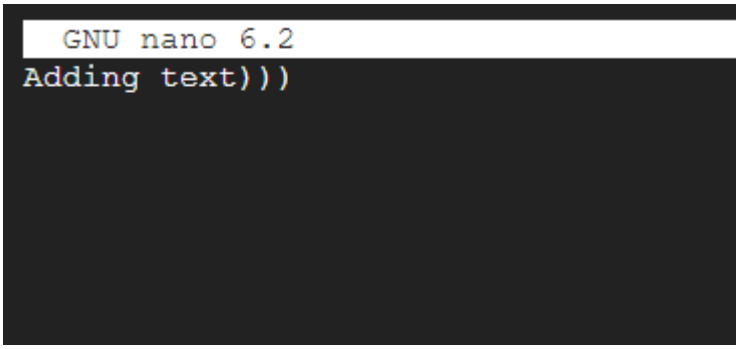
Exercise 4: Using Cloud Shell for Basic Operations

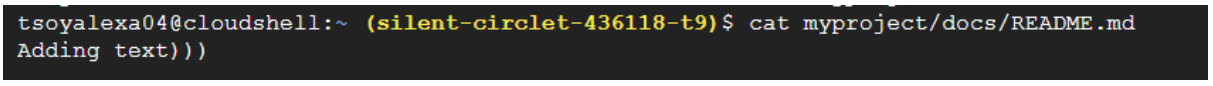
- In Cloud Shell, create a directory structure that mimics a small project (e.g., `myproject/src`, `myproject/tests`, `myproject/docs`).

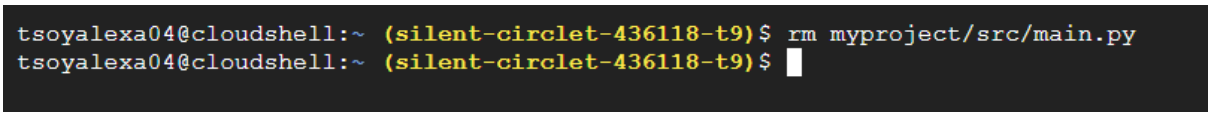


- Create a few files in these directories and use commands like `touch`, `nano`, `cat`, and `rm` to manipulate them.

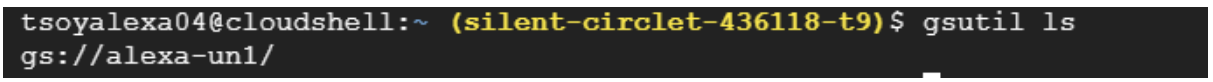








- Write how to use `gsutil` to create a new Cloud Storage bucket and upload a file from your Cloud Shell environment.
- Verify the file upload by listing the contents of the bucket.



```
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ gsutil cp myproject/docs/README.md gs://alexa-un1
Copying file://myproject/docs/README.md [Content-Type=text/markdown]...
/ [1 files][   16.0 B/   16.0 B]
Operation completed over 1 objects/16.0 B.
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ gsutil ls gs://alexa-un1
gs://alexa-un1/README.md
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$
```

1. What command did you use to create the directory structure?
   The command used to create the directory structure was mkdir -p myproject/src myproject/tests myproject/docs

2. How did you upload a file to a Cloud Storage bucket?
   To upload a file to a Cloud Storage bucket, the command used was gsutil cp local_file_path gs://your_bucket_name

3. How can you list the contents of a Cloud Storage bucket?
   List the contents of a Cloud Storage bucket by using the command gsutil ls gs://your_bucket_name

Exercise 5: Automating Tasks with Shell Scripts in Cloud Shell

- In Cloud Shell, create a new shell script named `setup.sh` in your `gcp-intro` directory.
- The script should automate the creation of a new directory, a simple text file, and set up a basic Google Cloud configuration (e.g., set a default project).

```
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ nano gcp-intro/setup.sh
```

```
  GNU nano 6.2
#!/bin/bash
mkdir -p new_directory
touch new_directory/sample.txt
gcloud config set project able-rune-436118-j5
```

- Make the script executable using `chmod +x setup.sh`.
- Run the script and verify that it performs the expected tasks.

```
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ chmod +x gcp-intro/setup.sh
tsoyalexa04@cloudshell:~ (silent-circlet-436118-t9)$ ./gcp-intro/setup.sh
Updated property [core/project].
tsoyalexa04@cloudshell:~ (able-rune-436118-j5)$ ls new_directory
gcloud config get-value project
sample.txt
Your active configuration is: [cloudshell-5975]
able-rune-436118-j5
```

Questions:

1. What command did you use to make the script executable?

The command used to make the script executable was `chmod +x gcp-intro/setup.sh`.

2. How did you ensure the script was executed correctly?
   To ensure the script was executed correctly, I checked the contents of the `new_directory` using `ls new_directory` and verified the active project with `gcloud config get-value project`.

3. What steps did your script automate?
   The script automated the creation of a new directory, the creation of a simple text file within that directory, and the setup of a default Google Cloud project.