Assignment 1, Cloud Application Development

Exercise 1: Setting Up Google Cloud SDK

```
Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).

Choose the account you want to use for this configuration.
To use a federated user account, exit this command and sign in to the gcloud CLI
 with your login configuration file, then run this command again.

Select an account:
 [1] elkonaltaeva@gmail.com
 [2] Sign in with a new Google Account
 [3] Skip this step
Please enter your numeric choice:  1

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

```
Your current project has been set to: [ass1].

Not setting default zone/region (this feature makes it easier to use
[gcloud compute] by setting an appropriate default value for the
--zone and --region flag).
See https://cloud.google.com/compute/docs/gcloud-compute section on how to set
default compute region and zone manually. If you would like [gcloud init] to be
able to do this for you the next time you run it, make sure the
Compute Engine API is enabled for your project on the
https://console.developers.google.com/apis page.

The Google Cloud CLI is configured and ready to use!

* Commands that require authentication will use elkonaltaeva@gmail.com by default
* Commands will reference project `ass1` by default
Run `gcloud help config` to learn how to change individual settings
```

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

Account: [elkonaltaeva@gmail.com]
Project: [ass1]
Universe Domain: [googleapis.com]

Current Properties:
  [core]
    account: [elkonaltaeva@gmail.com] (property file)
    disable_usage_reporting: [True] (property file)
    project: [ass1] (property file)

Logs Directory: [/Users/yeldanaonaltayeva/.config/gcloud/logs]
Last Log File: [/Users/yeldanaonaltayeva/.config/gcloud/logs/2024.09.16/00.27.47.709718.log]

git: [git version 2.32.1 (Apple Git-133)]
ssh: [OpenSSH_8.6p1, 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 registration, I was prompted to select the default project by its ID or name.==

What information does the gcloud info command provide?
==The `gcloud info` command provides detailed information about the current configuration of the Google Cloud SDK, including:==
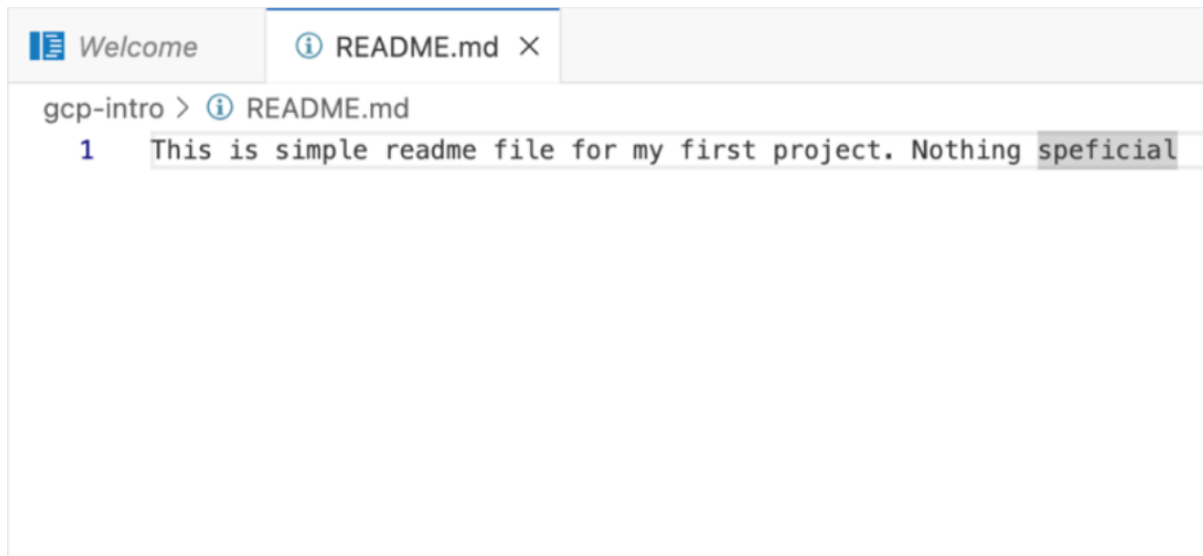
==- SDK version==
==- Active project==
==- Authenticated account==
==- Default region and zone==
==- Installation directory==
==- Available APIs==

Exercise 2: Exploring Cloud Shell

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

```
For detailed information on this command and its flags, run:
  gcloud --help
elkonaltaeva@cloudshell:~ (ass1)$ ls README-cloudshell.txt
README-cloudshell.txt
elkonaltaeva@cloudshell:~ (ass1)$ mkdir gcp-intro
elkonaltaeva@cloudshell:~ (ass1)$ cd gcp-intro/
elkonaltaeva@cloudshell:~/gcp-intro (ass1)$ cloudshell edit.
usage: cloudshell [-h]
                  {help,edit-files,edit-file,edit,open,open-workspace,workspace,ws,download-
cloudshell: error: argument command: invalid choice: 'edit.' (choose from 'help', 'edit-file
download-file', 'download', 'dl', 'launch-tutorial', 'env', 'aliases', 'get-web-preview-url'
elkonaltaeva@cloudshell:~/gcp-intro (ass1)$ 
```

```
Welcome          ⓘ README.md  ✕

gcp-intro > ⓘ README.md
    1       This is simple readme file for my first project. Nothing speficial
```

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:

1. Click the "open editor" button on the top right corner of the shell.

2. Type `cloudshell edit` in the terminal.

Exercise 3: Managing Projects with Google Cloud SDK

```
PROJECT_ID                NAME                PROJECT_NUMBER
esoteric-lodge-435718-d6  My First Project    1063772030026
onaltayeva-yeldana        Onaltayeva Yeldana  446294171289
x-landing-435718-c5       My First Project    1013834074606
yeldanaonaltayeva@MacBook-Pro-Yeldana google-cloud-sdk % 
```

```
Use [my-first-gcp-project-435720] as project ID (Y/n)?  y

Create in progress for [https://cloudresourcemanager.googleapis.com/v1/projects/my-first-gcp-project-435720].
Waiting for [operations/cp.5166763254956659457] to finish...done.
Enabling service [cloudapis.googleapis.com] on project [my-first-gcp-project-435720]...
Operation "operations/acat.p2-192544141201-00d93856-7852-4dc9-a991-215ad4501821" finished successfully.
yeldanaonaltayeva@MacBook-Pro-Yeldana google-cloud-sdk % 
```

```
[yeldanaonaltayeva@MacBook-Pro-Yeldana google-cloud-sdk % ./bin/gcloud config set project my-first-gcp-project-435720
Updated property [core/project].
[yeldanaonaltayeva@MacBook-Pro-Yeldana google-cloud-sdk % ./bin/gcloud projects describe my-first-gcp-project-435720
createTime: '2024-09-15T20:01:25.260722Z'
lifecycleState: ACTIVE
name: My First GCP Project
projectId: my-first-gcp-project-435720
projectNumber: '192544141201'
yeldanaonaltayeva@MacBook-Pro-Yeldana 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

```
Welcome to Cloud Shell! Type "help" to get started.
  GNU nano 6.2                                                    myproject/src/main.py




                                                              [ Read 0 lines ]

^G Help        ^O Write Out   ^W Where Is    ^K Cut        ^T Execute    ^C Location    M-U Undo
```

```
Updated property [core/project].
elkonaltaeva@cloudshell:~ (ass1)$ mkdir -p myproject/src myproject/tests myproject/docs
elkonaltaeva@cloudshell:~ (ass1)$ touch myproject/src/main.py myproject/tests/test_main.py myproject/docs/R
elkonaltaeva@cloudshell:~ (ass1)$ nano myproject/src/main.py
elkonaltaeva@cloudshell:~ (ass1)$ cat myproject/src/main.py
elkonaltaeva@cloudshell:~ (ass1)$ rm myproject/tests/test_main.py
elkonaltaeva@cloudshell:~ (ass1)$ gsutil mb gs://bucket13122003
Creating gs://bucket13122003/...
```

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

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

Do you want to continue (Y/n)?  н
Please enter 'y' or 'n':  y

Updated property [core/project].
Setup is complete! Directory created, file added, and project set.
```

```
Please enter 'y' or 'n': y

Updated property [core/project].
Setup is complete! Directory created, file added, and project set.
elkonaltaeva@cloudshell:~/gcp-intro (ass1)$ ls
my-new-project  myproject  setup.sh
elkonaltaeva@cloudshell:~/gcp-intro (ass1)$ cat my-new-project/info.txt
This is a simple text file.
elkonaltaeva@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 were created or not. Moreover, I checked 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.