

Aditya Kumar Week -1 Task

Task 1: Launch an EC2 instance (Amazon Linux/ Ubuntu)

Step 1: Launched EC2 Ubuntu t2.micro instance.

EC2 > Instances > i-063dee7cc97e8dde0

Instance summary for i-063dee7cc97e8dde0 (aditya_week-1) [Info](#)
Updated less than a minute ago

	C	Connect	Instance state ▼	Actions ▼
Instance ID	Public IPv4 address i-063dee7cc97e8dde0 (aditya_week-1)			
IPv6 address	Private IPv4 addresses 172.31.10.174			
Hostname type	Public IPv4 DNS Instance state Running			
IP name: ip-172-31-10-174.ap-south-1.compute.internal	ip-172-31-10-174.ap-south-1.compute.internal			
Answer private resource DNS name	Private IP DNS name (IPv4 only)			
-	ip-172-31-10-174.ap-south-1.compute.internal			
Auto-assigned IP address	Instance type			
13.232.8.62 [Public IP]	t2.micro			
VPC ID	Elastic IP addresses			
vpc-605d4c08 (default-vpc)	-			
AWS Compute Optimizer finding	AWS Compute Optimizer finding			
User: arn:aws:sts::096404013368:assumed-role	X			

Details [Security](#) [Networking](#) [Storage](#) [Status checks](#) [Monitoring](#) [Tags](#)

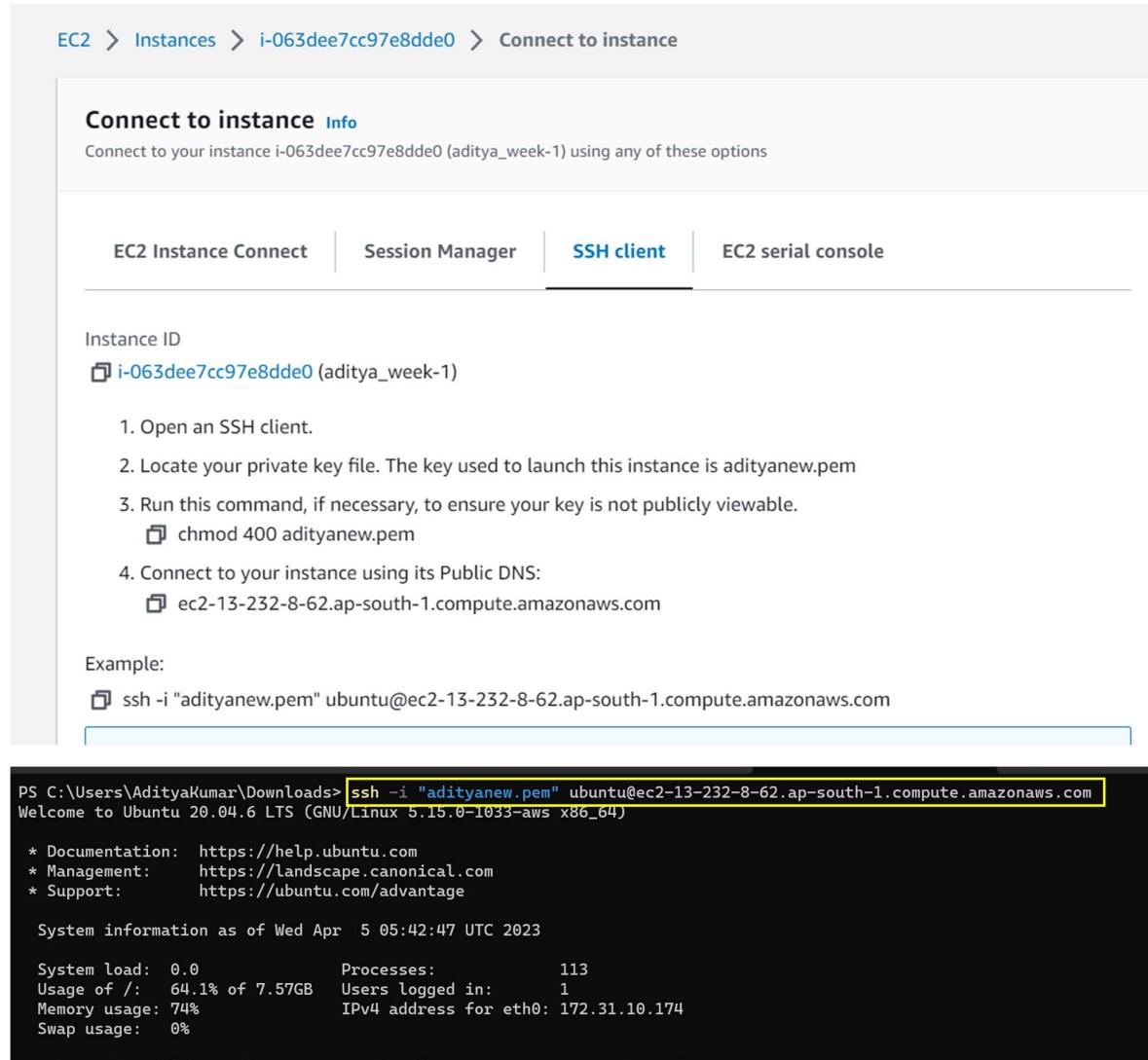
Instance details [Info](#)

Platform Ubuntu (inferred)	AMI ID ami-03a933af70fa97ad2	Monitoring disabled
Platform details Linux/UNIX	AMI name ubuntu/images/hvm-ssd/ubuntu-focal-20.04-amd64-server-20230328	Termination protection Disabled
Stop protection Disabled	Launch time Wed Apr 05 2023 08:50:52 GMT+0530 (India Standard Time) (about 2 hours)	AMI location amazon/ubuntu/images/hvm-ssd/ubuntu-focal-20.04-amd64-server-20230328
Instance auto-recovery Default	Lifecycle normal	Stop-hibernate behavior disabled
AMI Launch index 0	Key pair assigned at launch adityanew	State transition reason -
Credit specification standard	Kernel ID -	State transition message -

Task 2: Install Python and MySQL.

Step 1: login that instance using the ssh connection.

Copy the SSH client URL and paste into the windows cmd and hit the enter button.



Connect to instance Info

Connect to your instance i-063dee7cc97e8dde0 (aditya_week-1) using any of these options

EC2 Instance Connect Session Manager **SSH client** EC2 serial console

Instance ID

i-063dee7cc97e8dde0 (aditya_week-1)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is adityanew.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
chmod 400 adityanew.pem
4. Connect to your instance using its Public DNS:
ec2-13-232-8-62.ap-south-1.compute.amazonaws.com

Example:

```
ssh -i "adityanew.pem" ubuntu@ec2-13-232-8-62.ap-south-1.compute.amazonaws.com
```

```
PS C:\Users\AdityaKumar\Downloads> ssh -i "adityanew.pem" ubuntu@ec2-13-232-8-62.ap-south-1.compute.amazonaws.com
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1033-aws x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

 System information as of Wed Apr  5 05:42:47 UTC 2023

 System load: 0.0          Processes:           113
 Usage of /: 64.1% of 7.57GB   Users logged in:      1
 Memory usage: 74%          IPv4 address for eth0: 172.31.10.174
 Swap usage:  0%
```

We have successfully login that instance.

Step2: Update the EC2 instance and install the Python and MySQL.

```
ubuntu@ip-172-31-10-174:~$ sudo apt-get update
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Fetched 336 kB in 1s (427 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-10-174:~$ |
```

Installing Python and also checking their version.

```
ubuntu@ip-172-31-10-174:~$ sudo apt install python3
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3 is already the newest version (3.8.2-0ubuntu2).
python3 set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 9 not upgraded.
ubuntu@ip-172-31-10-174:~$ python3 --version
Python 3.8.10
```

Also installing 'pip'.

```
ubuntu@ip-172-31-10-174:~$ sudo apt install python3
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3 is already the newest version (3.8.2-0ubuntu2).
python3 set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 9 not upgraded.
ubuntu@ip-172-31-10-174:~$ python3 --version
Python 3.8.10
ubuntu@ip-172-31-10-174:~$ sudo apt install pip
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'python3-pip' instead of 'pip'
The following additional packages will be installed:
  binutils binutils-common binutils-x86_64-linux-gnu build-essential cpp cpp-9 dpkg-dev fakeroot g++ g++-9 gcc gcc-9 gcc-9-base
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan5 libatomic1 libbinutils libc-dev-bin libc6-dev
  libcc1-0 libcrypt-dev libctf-nobfd0 libcurl0 libdpkg-perl libexpat1-dev libfakeroot libfile-fcntllock-perl libgcc-9-dev libgomp1
  libis122 libitm1 liblsan0 libmpc3 libpython3-dev libpython3.8-dev libquadmath0 libstdc++-9-dev libtsan0 libubsan1 linux-libc-dev
  make manpages-dev python-pip-whl python3-dev python3-wheel python3.8-dev zlib1g-dev
Suggested packages:
```

Installing MySQL:

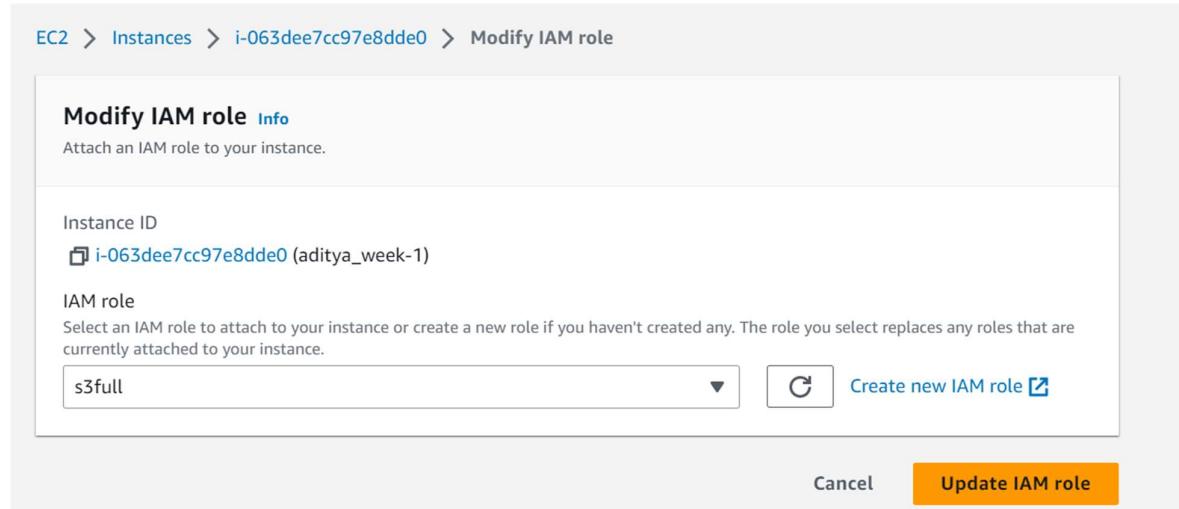
```
ubuntu@ip-172-31-10-174:~/week1$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libcgi-fast-perl libcgi-pm-perl libencode-locale-perl libevent-core-2.1-7 libevent-pthreads-2.1-7 libfcgi-perl libhtml-parser-perl libhtml-tagset-perl
  libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libmecab2 libtimedate-perl liburi-perl mecab-ipadic
  mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
  reading /usr/share/mecab/dic/ipadic/Adj.csv ... 27210
  reading /usr/share/mecab/dic/ipadic/Noun.csv ... 60477
  reading /usr/share/mecab/dic/ipadic/Postp-col.csv ... 91
  reading /usr/share/mecab/dic/ipadic/Auxil.csv ... 199
  reading /usr/share/mecab/dic/ipadic/Moun.adjv.csv ... 3328
  reading /usr/share/mecab/dic/ipadic/Prefix.csv ... 221
  reading /usr/share/mecab/dic/ipadic/Suffix.csv ... 1393
  reading /usr/share/mecab/dic/ipadic/Moun.demonst.csv ... 120
  reading /usr/share/mecab/dic/ipadic/Moun.proper.csv ... 27328
  reading /usr/share/mecab/dic/ipadic/Others.csv ... 2
  reading /usr/share/mecab/dic/ipadic/Moun.place.csv ... 7299
  reading /usr/share/mecab/dic/ipadic/Moun.org.csv ... 16668
  reading /usr/share/mecab/dic/ipadic/Moun.nai.csv ... 42
  reading /usr/share/mecab/dic/ipadic/Adnominal.csv ... 135
  emitting double-array: 100% |#####
  reading /usr/share/mecab/dic/ipadic/matrix.def ... 1316x1316
  emitting matrix : 100% |#####
done!
```

checking MySQL version:

```
ubuntu@ip-172-31-10-174:~$ mysql --version
mysql Ver 8.0.32-0ubuntu0.20.04.2 for Linux on x86_64 ((Ubuntu))
ubuntu@ip-172-31-10-174:~$ |
```

Task 3: Read the Students-Table.csv file from S3 using python.

Step 1: Attach IAM role to that instance. That role having S3 full access. So that I will read data from S3 bucket



EC2 > Instances > i-063dee7cc97e8dde0 > Modify IAM role

Modify IAM role Info

Attach an IAM role to your instance.

Instance ID
i-063dee7cc97e8dde0 (aditya_week-1)

IAM role
Select an IAM role to attach to your instance or create a new role if you haven't created any. The role you select replaces any roles that are currently attached to your instance.

s3full ▼ Create new IAM role

Cancel Update IAM role

Step 2: Login that instance using SSH connection.

```
PS C:\Users\AdityaKumar\Downloads> ssh -i "adityanew.pem" ubuntu@ec2-13-232-8-62.ap-south-1.compute.amazonaws.com
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1035-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

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 Usage of /:   64.1% of 7.57GB  Users logged in:     1
 Memory usage: 74%
 Swap usage:   0%
 
 * Ubuntu Pro delivers the most comprehensive open source security and
 compliance features.

 https://ubuntu.com/aws/pro
```

Step 3: Install AWS Cli and some python library so that it will read data from s3 bucket.

```
ubuntu@ip-172-31-10-174:~/week1$ history
1 aws --version
2 python --version
3 python3 --version
4 sudo apt-get update
5 apt-get install awscli
6 curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2".
7 curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
8 sudo apt install unzip
9 unzip awscliv2.zip
10 unzip -u awscliv2.zip
11 ./aws/install
12 sudo ./aws/install
13 aws --version
14 ./aws/install -i /usr/local/aws-cli -b /usr/local/bin
15 sudo ./aws/install --bin-dir /usr/local/bin --install-dir /usr/local/aws-cli --update
16 aws --version
```

Checking AWS Cli version.

```
ubuntu@ip-172-31-10-174:~$ aws --version
aws-cli/2.11.9 Python/3.11.2 Linux/5.15.0-1033-aws exe/x86_64.ubuntu.20 prompt/off
ubuntu@ip-172-31-10-174:~$ |
```

Installing Pandas and S3fs library using pip.

```
ubuntu@ip-172-31-10-174:~/week1$ sudo pip install pandas
Collecting pandas
  Downloading pandas-2.0.0-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (12.3 MB)
    |██████████| 12.3 MB 5.7 MB/s
Collecting numpy>=1.20.3; python_version < "3.10"
  Downloading numpy-1.24.2-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (17.3 MB)
    |██████████| 17.3 MB 11.3 MB/s
Collecting pytz>=2020.1
  Downloading pytz-2023.3-py2.py3-none-any.whl (502 kB)
    |██████████| 502 kB 23.9 MB/s
Collecting tzdata>=2022.1
  Downloading tzdata-2023.3-py2.py3-none-any.whl (341 kB)
    |██████████| 341 kB 25.2 MB/s
Collecting python-dateutil>=2.8.2
  Downloading python_dateutil-2.8.2-py2.py3-none-any.whl (247 kB)
    |██████████| 247 kB 13.3 MB/s
Requirement already satisfied: six>=1.5 in /usr/lib/python3/dist-packages (from python-dateutil>=2.8.2->pandas) (1.14.0)
Installing collected packages: numpy, pytz, tzdata, python-dateutil, pandas
Successfully installed numpy-1.24.2 pandas-2.0.0 python-dateutil-2.8.2 pytz-2023.3 tzdata-2023.3
ubuntu@ip-172-31-10-174:~/week1$ sudo pip install s3fs
Collecting s3fs
  Downloading s3fs-2023.3.0-py3-none-any.whl (27 kB)
Collecting aioboto3core<=2.4.2
  Downloading aioboto3core-2.4.2-py3-none-any.whl (66 kB)
    |██████████| 66 kB 916 kB/s
Collecting fsspec==2023.3.0
  Downloading fsspec-2023.3.0-py3-none-any.whl (145 kB)
    |██████████| 145 kB 1.3 MB/s
Collecting aiohttp!=4.0.0a0,!=4.0.0a1
  Downloading aiohttp-3.8.4-cp38-cp38-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.0 MB)
    |██████████| 1.0 MB 1.4 MB/s
Collecting aioitertools>=0.5.1
  Downloading aioitertools-0.11.0-py3-none-any.whl (23 kB)
Collecting botocore<1.27.60,>=1.27.59
  Downloading botocore-1.27.59-py3-none-any.whl (9.1 MB)
    |██████████| 9.1 MB 6.7 MB/s
Collecting wrapt>=1.10.10
```

Step 4: Created a empty directory to perform all the task in that directory.

```
ubuntu@ip-172-31-10-174:~$ mkdir week1
ubuntu@ip-172-31-10-174:~$ cd week1
ubuntu@ip-172-31-10-174:~/week1$ |
```

Also created python script file to read data from S3 bucket.

Read.py file:

```
import pandas as pd
import s3fs
df=pd.read_csv('s3://data-aiot-interns/Week-1/Students-Table.csv')
print(df.head(7))
~
```

Run the python script.

```
ubuntu@ip-172-31-10-174:~/week1$ vi read.py
ubuntu@ip-172-31-10-174:~/week1$ python3 read.py
   Studentid  firstname  lastname      email ... Percentage     City          Country  Country Code
0        100       Ana  Garlinda  Ana.Garlinda@yopmail.com ...    72.4097  Ahmedabad  Bulgaria      CO
1        101     Sabina  Skurnik  Sabina.Skurnik@yopmail.com ...    75.7137    Alofi      China      TR
2        102     Adore  Merell  Adore.Merell@yopmail.com ...    55.3714  Semarang  Yemen      ER
3        103     Clary  Vanni  Clary.Vanni@yopmail.com ...    66.8211    Ndola  Saint Pierre and Miquelon      FK
4        104     Tybie  Turne  Tybie.Turne@yopmail.com ...    70.6931  Belmopan  Iran, Islamic Republic Of      BM
5        105     Karly  Cassius  Karly.Cassius@yopmail.com ...    61.0949  Cincinnati  Palau      IE
6        106   Giustina     Bow  Giustina.Bow@yopmail.com ...    43.5898    Ankara  Guyana      NC
[7 rows x 10 columns]
ubuntu@ip-172-31-10-174:~/week1$ |
```

Task 4: Print data types of all columns.

Step 1: As per till now previous state we are printing the data type of the column. By using the python script.

“printDatatype.py” python script file

```
# importing required library
import pandas as pd
import s3fs
df=pd.read_csv('s3://data-aiot-interns/Week-1/Students-Table.csv')

# printing data types of the column
print("\nData Type of the Columns are :")
print(df.dtypes)
~
```

Running the script:

```
ubuntu@ip-172-31-10-174:~/week1$ python3 printDataType.py

Data Type of the Columns are :
Studentid           int64
firstname            object
lastname             object
email                object
Date of Exam         object
Marks                int64
Percentage          float64
City                 object
Country              object
Country Code         object
dtype: object
ubuntu@ip-172-31-10-174:~/week1$ |
```

Task 5: Combine the First Name and Last Name columns to single new column called Full Name.

Python Script file to combine the First Name and Last Name columns into a single new column called Full Name.

```
# importing required library
import pandas as pd
import s3fs
df=pd.read_csv('s3://data-aiot-interns/Week-1/Students-Table.csv')

# Added first name and alst name into a Full name
df["Full_Name"]=df['firstname']+ " "+df['lastname']
print("Full Name columns are :")
print(df['Full_Name'])
print('\n',df.head())
~
```

Rnning python Script file.

```
ubuntu@ip-172-31-10-174:~/week1$ python3 fullName.py
Full Name columns are :
0      Ana Garlinda
1      Sabina Skurnik
2      Adore Merell
3      Clary Vanni
4      Tybie Turne
...
995    Carree Leonard
996    Rivalee Doig
997    Cordi Berl
998    Daune Goerke
999    Tera Lilas
Name: Full_Name, Length: 1000, dtype: object

   Studentid firstname lastname           email ...     City          Country  Country Code  Full_Name
0       100     Ana Garlinda Ana.Garlinda@yopmail.com ... Ahmedabad Bulgaria CO Ana Garlinda
1       101     Sabina Skurnik Sabina.Skurnik@yopmail.com ... Alofi China TR Sabina Skurnik
2       102     Adore Merell Adore.Merell@yopmail.com ... Semarang Yemen ER Adore Merell
3       103     Clary Vanni Clary.Vanni@yopmail.com ... Ndola Saint Pierre and Miquelon FK Clary Vanni
4       104     Tybie Turne Tybie.Turne@yopmail.com ... Belmopan Iran, Islamic Republic Of BM Tybie Turne

[5 rows x 11 columns]
ubuntu@ip-172-31-10-174:~/week1$
```

Also inserting Full Name column at index 3 dropping the first and last name column.

```
# importing required library
import pandas as pd
import s3fs
df=pd.read_csv('s3://data-aiot-interns/Week-1/Students-Table.csv')

# Added first name and alst name into a Full name
df["Full_Name"]=df['firstname']+ " "+df['lastname']
print("Full Name columns are :")
print(df['Full_Name'])

f=df.pop('Full_Name')
df.insert(3,"Full_Name",f)
#dropping the first and last name columns
df.drop(columns=['firstname','lastname'],inplace=True)

print('\n',df.head())
~
~

ubuntu@ip-172-31-10-174:~/week1$ vi fullName.py
ubuntu@ip-172-31-10-174:~/week1$ python3 fullName.py
Full Name columns are :
0      Ana Garlinda
1      Sabina Skurnik
2      Adore Merell
3      Clary Vanni
4      Tybie Turne
...
995    Carree Leonard
996    Rivalee Doig
997    Cordi Berl
998    Daune Goerke
999    Tera Lilas
Name: Full_Name, Length: 1000, dtype: object

   Studentid      Full_Name           email Date of Exam Marks Percentage     City          Country  Country Code
0       100     Ana Garlinda Ana.Garlinda@yopmail.com 1934-10-15  772    72.4097 Ahmedabad Bulgaria CO
1       101     Sabina Skurnik Sabina.Skurnik@yopmail.com 2015-09-26  824    75.7137 Alofi China TR
2       102     Adore Merell Adore.Merell@yopmail.com 1911-08-13  160    55.3714 Semarang Yemen ER
3       103     Clary Vanni Clary.Vanni@yopmail.com 1939-08-16  386    66.8211 Ndola Saint Pierre and Miquelon FK
4       104     Tybie Turne Tybie.Turne@yopmail.com 1987-08-11  812    70.6931 Belmopan Iran, Islamic Republic Of BM

ubuntu@ip-172-31-10-174:~/week1$ vi fullName.py
```

Task 6: Convert date time format to YYYY-MM-DD.

Step 1: created a python script “date.py” to convert date into appropriate format.

```
# importing required library
import pandas as pd
import s3fs
df=pd.read_csv('s3://data-aiot-interns/Week-1/Students-Table.csv')
print('Initial Date format:\n')
print(df.head())

# Chnaged the date format
a=df['Date of Exam'] = pd.to_datetime(df['Date of Exam']).dt.date
print("\n\nDate format in YYYY-MM-DD format:")
print(a)
```

Step 2: Running the script.

```
ubuntu@ip-172-31-10-174:~/week1$ python3 date.py
Initial Date format:

   Studentid  firstname  lastname      email  Date of Exam  Marks  Percentage     City  Country  Country Code
0          100      Ana    Garlinda  Ana.Garlinda@yopmail.com  1934-10-15    772      72.4097  Ahmedabad  Bulgaria        CO
1          101     Sabina    Skurnik  Sabina.Skurnik@yopmail.com  2015-09-26    824      75.7137    Alofi       China        TR
2          102     Adore    Merell  Adore.Merell@yopmail.com  1911-08-13    160      55.3714  Semarang      Yemen        ER
3          103     Clary    Vanni   Clary.Vanni@yopmail.com  1939-08-16    386      66.8211    Ndola  Saint Pierre and Miquelon      FK
4          104     Tybie    Turne   Tybie.Turne@yopmail.com  1987-08-11    812      70.6931  Belmopan  Iran, Islamic Republic Of        BM

Date format in YYYY-MM-DD format:

0      1934-10-15
1      2015-09-26
2      1911-08-13
3      1939-08-16
4      1987-08-11
...
995    1958-04-29
996    2016-07-12
997    1916-07-15
998    1972-12-23
999    1976-02-24
Name: Date of Exam, Length: 1000, dtype: object
ubuntu@ip-172-31-10-174:~/week1$
```

Task 7: Convert Percentage column from float to decimal and approximate to 2 significant figures after the decimal point.

Step 1: Created a python Script file “percent.py”.

```
# importing required library
import pandas as pd
import s3fs
df=pd.read_csv('s3://data-aiot-interns/Week-1/Students-Table.csv')
print('Initial Data set')
print(df.head())

#Convert Percentage column from float to decimal and approximate to 2 significant figures after the decimal point.
df['Percentage']=round(df['Percentage'],2)
print('\nPercentage Column :')
print(df['Percentage'])
~
```

Step 2: Running the Script.

```
ubuntu@ip-172-31-10-174:~/week1$ python3 percent.py
initial Data set
   Studentid  firstname  lastname           email Date of Exam  Marks  Percentage      City          Country  Country Code
0         100       Ana  Garlinda  Ana.Garlinda@yopmail.com  1934-10-15    772    72.4097  Ahmedabad  Bulgaria        CO
1         101     Sabina  Skurnik  Sabina.Skurnik@yopmail.com  2015-09-26    824    75.7137    Alofi  China        TR
2         102     Adore  Merell  Adore.Merell@yopmail.com  1911-08-13    160    55.3714  Semarang  Yemen        ER
3         103     Clary  Vanni  Clary.Vanni@yopmail.com  1939-08-16    386    66.8211    Ndola Saint Pierre and Miquelon  FK
4         104     Tybie  Turne  Tybie.Turne@yopmail.com  1987-08-11    812    70.6931  Belmopan  Iran, Islamic Republic Of  BM

Percentage Column :
0    72.41
1    75.71
2    55.37
3    66.82
4    70.69
...
995   82.11
996   64.19
997   67.47
998   38.05
999   92.45
Name: Percentage, Length: 1000, dtype: float64
ubuntu@ip-172-31-10-174:~/week1$ |
```

Also saving the update file. For that I have combine all the of above script into a single script and saving the updated csv file.

```
import pandas as pd
import s3fs

# reading the csv file from s3 bucket.
df=pd.read_csv('s3://data-aiot-interns/Week-1/Students-Table.csv')
print(df.head())

# printing data types of the column
print("\nData Type of the Columns are :")
print(df.dtypes)

# Added first name and last name into a Full name
df['Full_Name']=df['firstname']+ " "+df['lastname']
print("Full Name columns are :")
f=df.pop('Full_Name')
df.insert(3,"Full_Name",f)
#dropping the first and last name columns
df.drop(columns=['firstname','lastname'],inplace=True)

# Chnaged the date format
a=df['Date of Exam'] = pd.to_datetime(df['Date of Exam']).dt.date
print("\n\nDate format in YYYY-MM-DD format:\n")

#Convert Percentage column from float to decimal and approximate to 2 significant figures after the decimal point.
df['Percentage']=round(df['Percentage'],2)
print("\nPercentage Column :")

print("\nUpdated CSV file:")
print(df.head())

# saving the updated csv file
df.to_csv("/var/lib/mysql-files/Students-TableNew.csv",index=False)

-- INSERT --
```

We have run this script file has been saved at specified location.

```
ubuntu@ip-172-31-10-174:~$ cd /var/lib/mysql-files/
ubuntu@ip-172-31-10-174:/var/lib/mysql-files$ ls
Students-TableNew.csv
ubuntu@ip-172-31-10-174:/var/lib/mysql-files$ |
```

Task 8: Create a Database in MySQL and create a table with the file modified till previous step.

Step 1: Login to MySQL which is installed earlier and created a database and using that database to create a table. Commands are highlighted in the yellow box.

```
ubuntu@ip-172-31-10-174:~/week1$ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.32-Ubuntu0.20.04.2 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database aditya;
->;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'd
atabase aditya' at line 1
mysql> create database aditya;
Query OK, 1 row affected (0.08 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| aditya   |
| information_schema |
| mysql    |
| performance_schema |
| sys      |
+-----+
5 rows in set (0.04 sec)

mysql> use aditya;
Database changed
```

Creating a table.

```
mysql> CREATE TABLE Student(Studentid    INTEGER NOT NULL PRIMARY KEY
-> ,Full_Name    VARCHAR(21) NOT NULL
-> ,email        VARCHAR(33) NOT NULL
-> ,Date_of_Exam DATE NOT NULL
-> ,Marks        INTEGER NOT NULL
-> ,Percentage   NUMERIC(6,2) NOT NULL
-> ,City          VARCHAR(26) NOT NULL
-> ,Country      VARCHAR(44) NOT NULL
-> ,Country_Code VARCHAR(2)
-> );
Query OK, 0 rows affected (0.05 sec)
```

Step 2: Viewing the table.

```
Database changed
mysql> show tables;
+-----+
| Tables_in_aditya |
+-----+
| Student          |
+-----+
1 row in set (0.00 sec)
```

Now Changing the file permission of that folder where modified CSV file is stored in previous tasks.

```
ubuntu@ip-172-31-10-174:/var/lib$ sudo chmod 777 mysql-files
ubuntu@ip-172-31-10-174:/var/lib$ cd mysql-files/
ubuntu@ip-172-31-10-174:/var/lib/mysql-files$ ls
Students-TableNew.csv
ubuntu@ip-172-31-10-174:/var/lib/mysql-files$ cat Students-TableNew.csv
StudentId,Full_Name,email,Date_of_Exam,Marks,Percentage,City,Country,Country_Code
100,Ana Garlinda,Ana.Garlinda@yopmail.com,1934-10-15,772,72.41,Ahmedabad,Bulgaria,CO
101,Sabina Skurnik,Sabina.Skurnik@yopmail.com,2015-09-26,824,75.71,Alofi,China,TR
102,Adore Merell,Adore.Merell@yopmail.com,1911-08-13,160,55.37,Semarang,Yemen,ER
103,Clary Vanni,Clary.Vanni@yopmail.com,1939-08-16,386,66.82,Ndola,Saint Pierre and Miquelon,FK
104,Tybie Turne,Tybie.Turne@yopmail.com,1987-08-11,812,70.69,Belmopan,"Iran, Islamic Republic Of",BM
105,Karly Cassius,Karly.Cassius@yopmail.com,1986-02-20,299,61.09,Cincinnati,Palau,IE
106,Giustina Bow,Giustina.Bow@yopmail.com,1975-04-21,609,43.59,Ankara,Guyana,NC
107,Babita Federica,Babita.Federica@yopmail.com,1903-05-15,786,61.56,Cayenne,Armenia,GH
108,Jenilee Rustice,Jenilee.Rustice@yopmail.com,1923-08-23,486,92.79,Kanpur,"Macedonia, The Former Yugoslav Republic of",JO
109,Aeriela Fennessy,Aeriela.Fennessy@yopmail.com,2004-12-02,831,57.83,Cleveland,Kazakhstan,NU
110,Ann-Marie Cyrie,Ann-Marie.Cyrie@yopmail.com,2011-02-18,804,60.4,Geneva,Finland,CD
111,Jemie Zamora,Jemie.Zamora@yopmail.com,1902-06-26,732,62.24,Quebec City,Ireland,AR
112,Demetris Robertson,Demetris.Robertson@yopmail.com,1948-02-21,13,45.66,Montevideo,American Samoa,TR
113,Nariko Joseph,Nariko.Joseph@yopmail.com,2015-11-10,16,33.22,Taichung,Guinea,HM
114,Pollyanna Liebermann,Pollyanna.Liebermann@yopmail.com,1990-07-03,265,40.42,Riga,Kenya,GF
```

Step 3: Inserting data into table from modified csv data. And viewign the data form table.
Commands are higlighted in the yellow box.

```
LOAD DATA INFILE '/var/lib/mysql-files/Students-TableNew.csv' INTO TABLE Student FIELDS TERMINATED BY ',' ENCLOSED BY '\"' LINES TERMINATED BY '\n' IGNORE 1 ROWS;
```

```
Database changed
mysql> LOAD DATA INFILE '/var/lib/mysql-files/Students-TableNew.csv' INTO TABLE Student FIELDS TERMINATED BY ',' ENCLOSED BY '\"' LINES TERMINATED BY '\n' IGNORE 1 ROWS;
Query OK, 1000 rows affected (0.05 sec)
Records: 1000 Deleted: 0 Skipped: 0 Warnings: 0
```

Select * from Student;

StudentId	Full_Name	email	Date_of_Exam	Marks	Percentage	City	Country	Country_Code
100	Ana Garlinda	Ana.Garlinda@yopmail.com	1934-10-15	772	72.41	Ahmedabad	Bulgaria	CO
101	Sabina Skurnik	Sabina.Skurnik@yopmail.com	2015-09-26	824	75.71	Alofi	China	TR
102	Adore Merell	Adore.Merell@yopmail.com	1911-08-13	160	55.37	Semarang	Yemen	ER
103	Clary Vanni	Clary.Vanni@yopmail.com	1939-08-16	386	66.82	Ndola	Saint Pierre and Miquelon	FK
104	Tybie Turne	Tybie.Turne@yopmail.com	1987-08-11	812	70.69	Belmopan	"Iran, Islamic Republic Of"	BM
105	Karly Cassius	Karly.Cassius@yopmail.com	1986-02-20	299	61.09	Cincinnati	Palau	IE
106	Giustina Bow	Giustina.Bow@yopmail.com	1975-04-21	609	43.59	Ankara	Guyana	NC
107	Babita Federica	Babita.Federica@yopmail.com	1983-05-15	786	61.56	Cayenne	Armenia	GH
108	Jenilee Rustice	Jenilee.Rustice@yopmail.com	1923-08-23	486	92.79	Kanpur	"Macedonia, The Former Yugoslav Republic of"	JO
109	Aeriela Fennessy	Aeriela.Fennessy@yopmail.com	2004-12-02	831	57.83	Montevideo	Kazakhstan	NU
110	Ann-Marie Cyrie	Ann-Marie.Cyrie@yopmail.com	2011-02-18	804	60.4	Geneva	Finland	CD
111	Jemie Zamora	Jemie.Zamora@yopmail.com	1902-06-26	732	62.24	Quebec City	Ireland	AR
112	Demetris Robertson	Demetris.Robertson@yopmail.com	1948-02-21	13	45.66	Montevideo	American Samoa	TR
113	Nariko Joseph	Nariko.Joseph@yopmail.com	2015-11-10	16	33.22	Taichung	Guinea	HM
114	Pollyanna Liebermann	Pollyanna.Liebermann@yopmail.com	1998-07-03	265	40.42	Riga	Kenya	GF
115	Lizzie Breed	Lizzie.Breed@yopmail.com	1954-10-01	213	68.57	Rio de Janeiro	Bangladesh	SI
116	Benita Iaverne	Benita.Iaverne@yopmail.com	1940-02-28	978	70.11	Mandurah	Malawi	MW
117	Ileana Lipson	Ileana.Lipson@yopmail.com	1977-06-17	651	48.53	Quito	Colombia	SC
118	Rayna Gahl	Rayna.Gahl@yopmail.com	1999-07-12	984	33.98	Durango	Maldives	DK
119	Nollie Ailyn	Nollie.Ailyn@yopmail.com	1973-01-17	898	92.18	Dodoma	Cote D'Ivoire	AL
120	Stevana Vuille	Stevana.Vuille@yopmail.com	1961-05-12	41	31.39	Gualajara	"Congo, The Democratic Republic of the"	TF
121	Lucy Kalinda	Lucy.Kalinda@yopmail.com	1924-02-23	533	85.78	Almaty	Russian Federation	IR
122	Zaria Graig	Zaria.Graig@yopmail.com	1978-04-19	386	41.99	Jaipur	Finland	SK
123	Tatiania Hebner	Tatiania.Hebner@yopmail.com	1967-04-11	264	51.88	Colombo	Jersey	VC
124	Zsa Zsa Kauppi	Zsa.Zsa.Kauppi@yopmail.com	1979-05-05	60	63.48	Daegu	Norfolk Island	IQ
125	Leontine Margarete	Leontine.Margarete@yopmail.com	1964-12-27	345	89.48	Kolkata	Christmas Island	MA
126	Nikki Graig	Nikki.Graig@yopmail.com	1980-05-31	375	53.00	Austin	Solomon Islands	AQ
127	Ashlee Loleta	Ashlee.Loleta@yopmail.com	1916-03-01	338	46.21	Cayenne	American Samoa	WS

Task 9: Insert new columns using the Insert-Table.csv in s3.

Step 1: Created a python script to read data from s3 and save it. Also make some changes like convert percentage column to upto 2 decimal point and combined first name and last name as a full name column.

Saved file will be used to insert new rows in the table.

```
#importing required library
import boto3
import pandas as pd
import io

# create an S3 client
s3 = boto3.client('s3')

# read the contents of the file
obj = s3.get_object(Bucket='data-aiot-interns', Key='Week-1/Insert-Table.csv')
contents = obj['Body'].read().decode('ISO-8859-1')

# create a pandas dataframe
df = pd.read_csv(io.StringIO(contents))
print("Initial Data :")
print(df.head(10))

# Added first name and alst name into a Full name
df["Full_Name"] = df['firstname'] + " " + df['lastname']

f=df.pop('Full_Name')
df.insert(3,"Full_Name",f)

#dropping the first and last name columns
df.drop(columns=['firstname', 'lastname'], inplace=True)

# Chnaged the date format
df['Date of Exam'] = pd.to_datetime(df['Date of Exam'], format='%d-%m-%Y')

#Convert Percentage column from float to decimal and approximate to 2 significant figures after the decimal point.
df['Percentage'] = round(df['Percentage'], 2)
print("\nUpdated CSV file:")
print(df.head())

# saving the updated csv file
df.to_csv("/var/lib/mysql-files/Insert-TableNew.csv", index=False)
~
```

Step 2: Running the script to makes some changes according to requirement and save that csv file.

```
(base) ubuntu@ip-172-31-10-174:~/week1$ sudo python3 insertTask.py
Initial Data :
   Studentid  firstname  lastname           email Date of Exam  Marks  Percentage      City          Country  Country Code
0       2113     Ruthe    Clara  Ruthe.Clara@yopmail.com  10-04-1966    271    77.0640  Baghdad        Pitcairn        BE
1       2694   Hollie Irmine  Hollie.Irmine@yopmail.com  15-10-1926    995    37.4039    Perm  British Indian Ocean Territory        BV
2       2954   Marjie Bonucci  Marjie.Bonucci@yopmail.com  09-08-1923    599    71.3633  Jakarta        Portugal        TZ
3       2502     Corry Olin   Corry.Olin@yopmail.com  02-05-2011    900    62.7114  Columbus        Thailand        GL
4       2951     Addia Redmond  Addia.Redmond@yopmail.com  11-10-2010    628    78.8490  Nanning  Dominican Republic        DZ
5       2795    Sophia Raul   Sophia.Raul@yopmail.com  15-10-1998    980    92.3838  Rockhampton        Kazakhstan        AN
6       2824  Kirbee Bartlett  Kirbee.Bartlett@yopmail.com  24-02-1933    139    84.7579  Ashgabat        Peru            SI
7       2826 Catharine Zenas  Catharine.Zenas@yopmail.com  22-11-1953    926    38.7888  Copenhagen        Iraq            JP
8       2424     Grier Matthew  Grier.Matthew@yopmail.com  14-01-1943    869    30.7888    Sana'a        Nauru            VI
9       2624     Edee Fredi   Edee.Fredi@yopmail.com  31-01-1940    496    45.5318  N'Djamena        France        NG

Updated CSV file:
   Studentid  Full_Name           email Date of Exam  Marks  Percentage      City          Country  Country Code
0       2113     Ruthe Clara  Ruthe.Clara@yopmail.com  1966-04-10    271    77.06  Baghdad        Pitcairn        BE
1       2694   Hollie Irmine  Hollie.Irmine@yopmail.com  1926-10-15    995    37.40    Perm  British Indian Ocean Territory        BV
2       2954   Marjie Bonucci  Marjie.Bonucci@yopmail.com  1923-08-09    599    71.36  Jakarta        Portugal        TZ
3       2502     Corry Olin   Corry.Olin@yopmail.com  2011-05-02    900    62.71  Columbus        Thailand        GL
4       2951     Addia Redmond  Addia.Redmond@yopmail.com  2010-10-11    628    78.85  Nanning  Dominican Republic        DZ
(base) ubuntu@ip-172-31-10-174:~/week1 |
```

Step 3: Inserting data into student table which is created earlier and student data is stored earlier. And Viewing data suing select command.

```

mysql> show tables;
+-----+
| tables_in_database |
+-----+
| Student           |
| StudentTable      |
+-----+
2 rows in set (0.00 sec)

mysql> ALTER TABLE Student DROP PRIMARY KEY;
Query OK, 1000 rows affected (0.10 sec)
Records: 1000  Duplicates: 0  Warnings: 0

mysql> LOAD DATA INFILE '/var/lib/mysql-files/Insert-TableNew.csv' INTO TABLE Student FIELDS TERMINATED BY ',' ENCLOSED BY "" LINES TERMINATED BY '\n' IGNORE 1 ROWS;
Query OK, 1000 rows affected (0.01 sec)
Records: 1000  Deleted: 0  Skipped: 0  Warnings: 0

mysql> select * from Student
-> ;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| StudentId | Full_Name | email          | Date_of_Exam | Marks | Percentage | city        | Country    | Country_Code |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 100 | Ana.Garlinh | Ana.Garlinh@gmail.com | 1934-10-15 | 770 | 72.41 | Ahmedabad | Bulgaria   | CO          |
| 101 | Sabina.Skurnik | Sabina.Skurnik@gmail.com | 2015-09-25 | 820 | 75.71 | Alorifi   | China       | TR          |
| 102 | Adore.Merell | Adore.Merell@gmail.com | 1911-08-13 | 160 | 55.37 | Semarang   | Yemen       | ER          |
| 103 | Clary.Vanni | Clary.Vanni@gmail.com | 1939-08-16 | 386 | 66.82 | Ndeola    | Saint.Pierre & Miquelon | FK          |
| 104 | Tybie.Turne | Tybie.Turne@gmail.com | 1987-08-11 | 812 | 70.69 | Beloapao  | Iran, Islamic Republic Of | BM          |
| 105 | Karly.Cassius | Karly.Cassius@gmail.com | 1986-02-20 | 299 | 61.09 | Cincinnati | Palau       | IE          |
| 106 | Giustina.Bow | Giustina.Bow@gmail.com | 1975-04-21 | 609 | 43.59 | Ankara    | Guyana     | NC          |
| 107 | Babita.Federica | Babita.Federica@gmail.com | 1983-05-15 | 786 | 61.56 | Cayenne   | Armenia   | GH          |
| 108 | Jenilee.Rustice | Jenilee.Rustice@gmail.com | 1923-08-23 | 480 | 92.79 | Hanpur    | Macedonia, The Former Yugoslav Republic of | JO          |
| 109 | Aeriala.Fennessy | Aeriala.Fennessy@gmail.com | 2004-12-02 | 831 | 57.83 | Cleveland | Kazakhstan | NU          |
| 110 | Ann-Marie.Cyrie | Ann-Marie.Cyrie@gmail.com | 2011-02-18 | 804 | 60.48 | Geneva    | Finland   | CD          |
| 111 | Jessie.Zamora | Jessie.Zamora@gmail.com | 1962-02-20 | 732 | 62.24 | Quebec City | Iceland   | AR          |
| 112 | Gemmae.Robertson | Gemmae.Robertson@gmail.com | 1990-02-21 | 13 | 45.66 | Quebec City | American Samoa | TR          |
| 113 | Marisko.Joseph | Marisko.Joseph@gmail.com | 2015-11-19 | 16 | 53.22 | Tschang   | Guinea    | HM          |
| 114 | Pollyanna.Liehmann | Pollyanna.Liehmann@gmail.com | 1998-07-03 | 265 | 68.42 | Rio       | Kenya     | HH          |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1100 rows in set (0.00 sec)

mysql>

```

Task 10: Update the columns mentioned in Update-Table.csv in s3.

Step 1: Created a python script to read data from s3 and save it. Also make some changes like convert percentage column to upto 2 decimal point and combined first name and last name as a full name column.

Saved file will be used to update rows in the student table.

```

import boto3
import pandas as pd
import io

# create an S3 client
s3 = boto3.client('s3')

# read the contents of the file
obj = s3.get_object(Bucket='data-aiot-interns', Key='Week-1/Update-Table.csv')
contents = obj['Body'].read().decode('ISO-8859-1')

# create a pandas dataframe
df = pd.read_csv(io.StringIO(contents))
print("Initial Data :")
print(df.head(10))

# Added first name and last name into a Full name
df["Full_Name"] = df['firstname'] + " " + df['lastname']

f=df.pop('Full_Name')
df.insert(3,"Full_Name",f)

#dropping the first and last name columns
df.drop(columns=['firstname', 'lastname'], inplace=True)

# Chnaged the date format
df['Date of Exam'] = pd.to_datetime(df['Date of Exam'], format="%d-%m-%Y")

#Convert Percentage column from float to decimal and approximate to 2 significant figures after the decimal point.
df['Percentage']=round(df['Percentage'],2)
df.drop_duplicates(inplace=True)

df.dropna(inplace=True)
df['Studentid'] = df['Studentid'].astype("Int64")
print("\nUpdated CSV file:")
print(df.head())

# saving the updated csv file
df.to_csv("/var/lib/mysql-files/Update-TableNew.csv", index=False)
"update.py" 40L, 1155C
  
```

Step 2: Running the script to makes some changes according to requirement and save that csv file.

```

ubuntu@ip-172-31-3-107:~/week1$ sudo python3 update.py
Initial Data :
  Studentid firstname lastname email Date of Exam Marks Percentage City Country Country Code
0    100.0      Ana   Garlinda Ana.Garlinda@ymail.com 15-10-1934  381.0    78.9635 Ahmedabad Bulgaria CO
1    101.0     Sabina Skurnik Sabina.Skurnik@ymail.com 26-09-1950  134.0    58.8249   Alofi China TR
2    102.0     Adore Merell Adore.Merell@ymail.com 13-08-1911  718.0    84.2678 Semarang Yemen ER
3    301.0    Clarice Eckblad Clarice.Eckblad@ymail.com 24-04-1950  406.0    68.0952 Cork (city) Belarus BJ
4    302.0     Lauryn Swigart Lauryn.Swigart@ymail.com 19-01-2009  151.0    78.9902 Oranjestad Guyana TC
5    318.0   Georgetta Fadiman Georgetta.Fadiman@ymail.com 26-07-2006  647.0    52.9602 Frankfurt Somalia AE
6    321.0  Roseline Hutchison Roseline.Hutchison@ymail.com 18-07-1974  219.0    37.6464 Malmö United States MU
7    353.0   Madeleine Jethro Madeleine.Jethro@ymail.com 08-07-1944  314.0    69.8708 Nanning Ukraine ER
8    354.0     Heida Tippets Heida.Tippets@ymail.com 20-10-1904  670.0    40.9942 Antofagasta Slovenia UM
9    355.0     Pamella Pernick Pamella.Pernick@ymail.com 31-08-1993  169.0    39.6135 Sarajevo Venezuela AZ

Updated CSV file:
  Studentid Full_Name email Date of Exam Marks Percentage City Country Country Code
0    100      Ana Garlinda Ana.Garlinda@ymail.com 1934-10-15  381.0    78.96 Ahmedabad Bulgaria CO
1    101     Sabina Skurnik Sabina.Skurnik@ymail.com 2015-09-26  134.0    58.82   Alofi China TR
2    102     Adore Merell Adore.Merell@ymail.com 1911-08-13  718.0    84.27 Semarang Yemen ER
3    301    Clarice Eckblad Clarice.Eckblad@ymail.com 1956-04-24  406.0    68.10 Cork (city) Belarus BJ
4    302    Lauryn Swigart Lauryn.Swigart@ymail.com 2009-01-19  151.0    78.99 Oranjestad Guyana TC
  
```

Step 3: Updating table using update.csv file.

```

mysql> LOAD DATA INFILE '/var/lib/mysql-files/Update-TableNew.csv'
--> REPLACE INTO TABLE Student
--> FIELDS TERMINATED BY ','
--> ENCLOSED BY ''
--> LINES TERMINATED BY '\n'
--> IGNORE 1 ROWS;
Query OK, 88 rows affected (0.01 sec)
Records: 44 Deleted: 44 Skipped: 0 Warnings: 0

mysql> select * from Student;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Studentid | Full_Name | email | Date_of_Exam | Marks | Percentage | City | Country |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 100 | Ana Garlinda | Ana.Garlinda@ymail.com | 1934-10-15 | 381 | 78.96 | Ahmedabad | Bulgaria |
| 101 | Sabina Skurnik | Sabina.Skurnik@ymail.com | 2015-09-26 | 134 | 58.82 | Alofi | China |
| 102 | Adore Merell | Adore.Merell@ymail.com | 1911-08-13 | 718 | 84.27 | Semarang | Yemen |
| 301 | Clarice Eckblad | Clarice.Eckblad@ymail.com | 1956-04-24 | 406 | 68.1 | Cork (city) | Belarus |
| 302 | Lauryn Swigart | Lauryn.Swigart@ymail.com | 2009-01-19 | 151 | 78.99 | Oranjestad | Guyana |
+-----+-----+-----+-----+-----+-----+-----+-----+
  
```

Task 11: Create a new table and copy contents from students-table.

Created a new table and copy contents from student table.

1095 rows in set (0.00 sec)

```
mysql> CREATE TABLE new_table AS SELECT * FROM Student;
Query OK, 1095 rows affected (0.14 sec)
Records: 1095  Duplicates: 0  Warnings: 0
```

Viewing the new table.

```
mysql> show tables;
+-----+
| Tables_in_aditya |
+-----+
| Student          |
| new_table        |
+-----+
2 rows in set (0.00 sec)

mysql>
```

Task 12: Alter table schema and add a new column.

Alter table and adding new column name as PassFail. And describi

mysql> ALTER TABLE new_table ADD COLUMN PassFail BOOLEAN;

Query OK, 0 rows affected (0.11 sec)
 Records: 0 Duplicates: 0 Warnings: 0

```
mysql> desc new_table;
+-----+-----+-----+-----+-----+-----+
| Field    | Type     | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Studentid | int      | NO   |     | NULL    |       |
| Full_Name | varchar(21) | NO   |     | NULL    |       |
| email     | varchar(33)  | NO   |     | NULL    |       |
| Date_of_Exam | date    | NO   |     | NULL    |       |
| Marks     | int      | NO   |     | NULL    |       |
| Percentage | decimal(6,2) | NO   |     | NULL    |       |
| City       | varchar(26)  | NO   |     | NULL    |       |
| Country    | varchar(44)  | NO   |     | NULL    |       |
| Country_Code | varchar(2)  | YES  |     | NULL    |       |
| PassFail   | tinyint(1) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.01 sec)
```

Task 13: The column name should be Pass/Fail with Boolean data type. Percentage > 40 True else False.

Updating according to requirement.

```
mysql> UPDATE new_table SET PassFail = CASE WHEN Percentage > 40 THEN TRUE ELSE FALSE END;
```

Query OK, 1095 rows affected (0.03 sec)

Rows matched: 1095 Changed: 1095 Warnings: 0

```
mysql> |
```

Task 14: Show contents of new table.

Viewing the content form new table.

```
mysql> select * from new_table;
```

StudentId	Full_Name	email	Date_of_Exam	Marks	Percentage	City	Country	Country_Code	PassFail
100	Alice Gertude	Alice.Gertude@ymail.com	1934-10-15	381	78.96	Ahmedabad	Bulgaria	CO	1
101	Sabina Skurnik	Sabina.Skurnik@ymail.com	2015-09-26	134	58.82	Alofi	China	TR	1
102	Adore Morell	Adore.Morell@ymail.com	1911-08-15	718	84.27	Semarang	Yemen	ER	1
103	Clary Vanni	Clary.Vanni@ymail.com	1939-08-16	386	66.82	Ndoli	Saint Pierre and Miquelon	FK	1
104	Yvonne Yvonne	Yvonne.Yvonne@ymail.com	1959-07-15	811	77.11	Seppan	Islamic Republic Of	FR	1
105	Karly Cassius	Karly.Cassius@ymail.com	1986-02-20	199	61.09	Cincinnati	Palau	IE	1
106	Giustina Bow	Giustina.Bow@ymail.com	1975-04-21	609	43.59	Ankara	Guyana	NC	1
107	Babita Federica	Babita.Federica@ymail.com	1903-05-15	786	61.56	Cayenne	Armenia	GH	1
108	Jenilee Justice	Jenilee.Justice@ymail.com	1980-02-23	405	92.70	Hannover	Macau, The Former Yugoslav Republic of	JO	1
109	Leahla Foleyssy	Leahla.Foleyssy@ymail.com	1986-12-22	831	53.63	Overland	Kazakhstan	ML	1
110	Ann-Marie Cyrie	Ann-Marie.Cyrie@ymail.com	2011-02-18	804	60.48	Geneva	Finland	CD	1
111	Jenie Zamora	Jenie.Zamora@ymail.com	1902-06-21	732	62.24	Quebec City	Ireland	AR	1
112	Demetris Robertson	Demetris.Robertson@ymail.com	1948-02-21	13	45.66	Montevideo	American Samoa	TR	1
113	Antonio Josefa	Antonio.Josefa@ymail.com	1950-07-19	161	35.10	Taichung	Guinea	HH	0
114	Pollyanna Liebermann	Pollyanna.Liebermann@ymail.com	1999-07-03	265	40.42	Rio de Janeiro	Kenya	GF	1
115	Lizzie Breed	Lizzie.Breed@ymail.com	1954-10-01	213	68.57	Bangladesh	SI	1	
116	Benita Iaverne	Benita.Iaverne@ymail.com	1980-02-20	970	70.11	Mandurah	Malawi	MW	1
117	Ileana Dison	Ileana.Dison@ymail.com	1977-06-17	650	48.85	Quito	Colombia	SC	1
118	Carly Cahk	Carly.Cahk@ymail.com	1959-07-22	984	53.98	Tempo	Maldives	DV	0
119	Nollie Ailyn	Nollie.Ailyn@ymail.com	1973-01-17	998	92.18	Dodona	Cote D'Ivoire	AL	1
120	Stevana Vualte	Stevana.Vualte@ymail.com	1961-06-12	41	31.39	Guadalajara	Congo, The Democratic Republic of the	TF	0
121	Lucy Kalinda	Lucy.Kalinda@ymail.com	1974-02-23	533	85.70	Alamy	Russian Federation	IR	1
122	Leanne Kaid	Leanne.Kaid@ymail.com	1957-07-10	500	50.00	Almaty	Iran	SH	1
123	Tatiania Heber	Tatiania.Heber@ymail.com	1967-04-11	264	51.88	Colombo	Jersey	VC	1
124	Zsa Zsa Kauppi	Zsa.Zsa.Kauppi@ymail.com	1979-05-05	60	63.48	Daegu	Norfolk Island	IQ	1
125	Leontine Margarete	Leontine.Margarete@ymail.com	1964-12-27	345	89.48	Kolkata	Christmas Island	MA	1
126	Nicole Goss	Nicole.Goss@ymail.com	1980-03-31	375	53.00	Austin	Solomon Islands	AQ	1
127	Leahla Latets	Leahla.Latets@ymail.com	1916-03-21	110	41.00	Amman	Argentina	ME	1
128	Blake Constancy	Blake.Constancy@ymail.com	1946-01-16	638	80.10	Santiago de Cuba	Turks and Caicos Islands	ZA	1
129	Alia Peonir	Alia.Peonir@ymail.com	1975-09-03	488	46.91	Thessaloniki	Portugal	SY	1
130	Barbi Leler	Barbi.Leler@ymail.com	1960-01-17	658	40.49	Longyearbyen	Northern Mariana Islands	TZ	1
131	Cherelle Madell	Cherelle.Madell@ymail.com	1949-07-05	585	52.00	City of Halifax	Comoros	PE	1
132	Leanne Dicky	Leanne.Dicky@ymail.com	1965-10-07	145	75.07	Montevideo	Zimbabwe	GR	1
133	Gwyneth Ephren	Gwyneth.Ephren@ymail.com	1961-07-15	145	52.54	Jacksonville	Liberia	HM	1
134	Karolina Celestine	Karolina.Celestine@ymail.com	1989-09-26	717	79.90	Dakar	Latvia	RE	1
135	Orsola Gracye	Orsola.Gracye@ymail.com	1935-06-18	39	77.01	New York City	Western Sahara	TL	1
136	Leanne Leibert	Leanne.Leibert@ymail.com	1959-07-06	401	65.00	Chitwan	Cuba	BG	1
137	Levine Cosenza	Levine.Cosenza@ymail.com	1937-10-11	791	68.74	Shillong	Malaysia	FR	1
138	Teddi Raimondo	Teddi.Raimondo@ymail.com	2002-05-26	989	93.41	Chongqing	Mexico	ET	1
139	Ricky Sikorski	Ricky.Sikorski@ymail.com	1948-10-30	145	82.28	Kuala Lumpur	Maldives	US	1
140	Naomi Rebecka	Naomi.Rebecka@ymail.com	1960-07-29	800	60.00	Pyongyang	North Korean People's Republic of	CV	1
141	Leanne Dythe	Leanne.Dythe@ymail.com	1967-12-10	216	63.93	Jaimeon	Pitcairn	GP	1
142	Evita Pattiin	Evita.Pattiin@ymail.com	2018-08-19	772	84.16	Incheon	Ethiopia	PF	1
143	Andree Virgin	Andree.Virgin@ymail.com	1905-02-07	616	74.16	Johor Bahru	Czech Republic	DK	1

Task 15: Delete records who failed.

```
mysql> DELETE FROM new_table WHERE PassFail = 0;
```

Query OK, 171 rows affected (0.01 sec)

```
mysql> |
```

Task 16: Show contents of new table.

```
mysql> select * from new_table;
```

StudentId	Full_Name	email	Date_of_Exam	Marks	Percentage	City	Country	Country_Code	PassFail
100	Ana Garlinda	Ana.Garlinda@ymail.com	1934-10-15	381	78.96	Ahmedabad	Bulgaria	CO	1
101	Sabina Skurnik	Sabina.Skurnik@ymail.com	2015-09-26	134	58.82	Alefvi	China	TR	1
102	Adore Merrell	Adore.Merrell@ymail.com	1911-08-13	718	84.27	Sesarang	Vesey	ER	1
103	Clary Vanni	Clary.Vanni@ymail.com	1959-08-16	386	66.82	Volta	Saint Pierre and Miquelon	FK	1
104	Elaine Pigne	Elaine.Pigne@ymail.com	1936-08-11	702	70.92	Bobo-Dioulasso	Iraq Islamic Republic Of	MP	1
105	Warily Cassius	Warily.Cassius@ymail.com	1986-07-20	299	61.99	Cincinnati	Palau	IE	1
106	Giustina Bow	Giustina.Bow@ymail.com	1975-04-21	689	43.59	Ankara	Guyana	NC	1
107	Babita Federica	Babita.Federica@ymail.com	1903-05-15	786	61.56	Cayenne	Armenia	GH	1
108	Jenilee Rustice	Jenilee.Rustice@ymail.com	1923-08-23	486	92.79	Kanpur	Macedonia, The Former Yugoslav Republic of	JO	1
109	Veronica Cyrius	Veronica.Cyrius@ymail.com	2002-07-25	873	57.83	Cleveland	Kazakhstan	MU	1
110	Audrey Cyrie	Audrey.Cyrie@ymail.com	2011-07-18	884	60.03	Dzherzhinsk	Finland	CD	1
111	Jemie Zamora	Jemie.Zamora@ymail.com	1902-06-26	732	62.24	Quebec City	Ireland	AR	1
112	Demetris Robertson	Demetris.Robertson@ymail.com	1948-02-21	13	45.66	Montevideo	American Samoa	TR	1
114	Pollyanna Liebermann	Pollyanna.Liebermann@ymail.com	1990-07-03	265	40.42	Riga	Kenya	GF	1
115	Lizzine Freed	Lizzine.Freed@ymail.com	1944-06-01	213	58.02	Salvador de Janeiro	Bangladesh	MA	1
116	Bella Isomme	Bella.Isomme@ymail.com	1949-07-20	170	70.11	Manaus	Maldives	SL	1
117	Ileana Lipson	Ileana.Lipson@ymail.com	1977-06-17	651	53.95	Quito	Colombia	Mu	1
119	Nollie Ailyn	Nollie.Ailyn@ymail.com	1973-01-17	898	92.10	Dodoma	Cote D'Ivoire	SC	1
121	Lucy Kalinda	Lucy.Kalinda@ymail.com	1924-02-23	533	85.70	Almaty	Russian Federation	AL	1
122	Zaria Grashig	Zaria.Grashig@ymail.com	1978-04-01	300	91.99	Jalapar	Finland	IR	1
123	Leontine Athenee	Leontine.Athenee@ymail.com	1950-01-11	260	75.00	Lebanon	Iraq	SK	1
124	Zsa Zsa Kauppi	Zsa.Zsa.Kauppi@ymail.com	1979-05-05	60	63.40	Daegeu	Norfolk Island	VC	1
125	Leontine Margarete	Leontine.Margarete@ymail.com	1964-12-27	315	69.48	Kolkata	Christmas Island	IQ	1
126	Nikki Graig	Nikki.Graig@ymail.com	1908-05-31	375	53.00	Austin	Solomon Islands	MA	1
127	Leanne Lotta	Leanne.Lotta@ymail.com	1916-06-19	310	45.00	Cavite	American Samoa	AQ	1
128	Bilbie Costancy	Bilbie.Costancy@ymail.com	1930-01-16	638	88.10	Lagartijo do Cuba	Turks and Caicos Islands	RS	1
129	Alia Peinir	Alia.Peinir@ymail.com	1975-09-03	688	46.91	Thessaloniki	Portugal	ZA	1
130	Barbi Leler	Barbi.Leler@ymail.com	1960-01-17	658	48.00	Longyearbyen	Northern Mariana Islands	SY	1
131	Cheritta Wadell	Cheritta.Wadell@ymail.com	1922-12-05	559	59.66	City of Halifax	Russian Federation	TZ	1
132	Aurelia Dicky	Aurelia.Dicky@ymail.com	1910-07-07	597	75.00	Hamilton	Congo	PE	1
133	Leanne Raynes	Leanne.Raynes@ymail.com	1961-05-15	115	52.50	Longueville	Zimbabwe	GR	1
134	Karolina Celestine	Karolina.Celestine@ymail.com	1989-09-26	717	79.90	Dakar	Liberia	NW	1
135	Orsola Grayce	Orsola.Grayce@ymail.com	1935-06-18	39	77.01	New York City	Western Sahara	RE	1
136	Brianna Filibert	Brianna.Filibert@ymail.com	1989-06-06	432	61.71	Surabaya	Chad	TL	1
137	Leanne Cosenza	Leanne.Cosenza@ymail.com	1957-10-11	701	60.70	Shillong	Maldives	BG	1
138	Leanne Madeline	Leanne.Madeline@ymail.com	1926-05-25	889	39.41	Longyang	Maldives	PR	1
139	Ricky Sikorski	Ricky.Sikorski@ymail.com	1980-10-30	195	82.28	Kuala Lumpur	Maldives	LT	1
140	Darleen Rebecca	Darleen.Rebecca@ymail.com	1939-08-27	861	60.07	Iqaluit	Korea, Democratic People's Republic of	CV	1
141	Lorenza Dycne	Lorenza.Dycne@ymail.com	1967-12-18	916	83.93	Incheon	Pitcairn	GP	1
142	Evita Patti	Evita.Patti@ymail.com	2018-08-19	772	84.16	Incheon	Ethiopia	PF	1
143	Leanne Kaitlyn	Leanne.Kaitlyn@ymail.com	1929-07-07	161	70.00	Johor Bahru	Czech Republic	OK	1
144	Aigneis Kirree	Aigneis.Kirree@ymail.com	1969-05-24	874	95.82	Seirpus	Romania	MD	1
147	Winifred Terencio	Winifred.Terencio@ymail.com	1914-11-24	687	78.56	Hilo	United Arab Emirates	ER	1
148	Veda Mendez	Veda.Mendez@ymail.com	1984-10-15	218	95.18	Miami	Ecuador	LT	1
149	Brena Maisye	Brena.Maisye@ymail.com	1905-02-12	683	93.00	Pattaya	British Indian Ocean Territory	VN	1
150	Leanne Alwin	Leanne.Alwin@ymail.com	1994-01-11	241	52.00	Port Moresby	British Indian Ocean Territory	MM	1
2386	Roz Ball	Roz.Ball@ymail.com	1900-01-09	811	49.44	Monrovia	Afghanistan	AQ	1
2394	Addia Dearborn	Addia.Dearborn@ymail.com	1905-10-05	83	51.97	Marseille	Turkey	EE	1
2416	Ricky August	Ricky.August@ymail.com	1968-09-13	735	88.00	Virraspol	Bosnia and Herzegovina	RW	1
2417	Beth Medrud	Beth.Medrud@ymail.com	1997-04-12	955	85.13	Kharkiv	Kiribati	TT	1
2418	Leanne Esmel	Leanne.Esmel@ymail.com	1950-01-01	250	72.00	Livingston	Kazakhstan	GW	1
2433	Catrina Love	Catrina.Love@ymail.com	2009-02-23	618	62.93	Willemstad	Liberia	HM	1
2439	Philis Kalinda	Philis.Kalinda@ymail.com	1918-03-05	673	61.03	Bucharest	Mayotte	DE	1
2440	Aubrie Zola	Aubrie.Zola@ymail.com	1958-03-15	277	65.07	Sydney	Sudan	EC	1
2441	Audreis Loleta	Audreis.Loleta@ymail.com	1960-05-02	486	81.00	Caracas	Venezuela	HR	1
2446	Millie Hewitt	Millie.Hewitt@ymail.com	1968-10-25	693	73.37	Oila	Argentina	CL	1
2464	Rori Kars	Rori.Kars@ymail.com	1959-11-27	893	63.42	Riverside	Cameroon	MP	1
2471	Bryanna Bergman	Bryanna.Bergman@ymail.com	1920-12-03	963	81.25	Edinburgh	Uzbekistan	IS	1
2502	Corry Olin	Corry.Olin@ymail.com	2011-05-02	900	62.71	Columbus	Thailand	GL	1
2510	Audrey Kornel	Audrey.Kornel@ymail.com	1949-08-25	371	62.00	Edinburgh	Hong Kong	CL	1
2530	Bill Payson	Bill.Payson@ymail.com	1901-07-25	752	65.30	I Edinburgh	Russian Federation	TZ	1
2531	Isla Gladstone	Isla.Gladstone@ymail.com	1938-09-28	67	51.63	Townsville	Niue	BN	1
2532	Juliette Linehan	Juliette.Linehan@ymail.com	1913-02-18	426	43.08	Krakow	Folkstone	MT	1
2531	Berget Imelida	Berget.Imelida@ymail.com	1903-07-24	422	79.55	Admaston	Hearld Island and McDonald Islands	HK	1
2532	Leanne Kristin	Leanne.Kristin@ymail.com	1969-10-25	690	90.00	Edinburgh	Anguilla	TV	1
2567	Meg Afton	Meg.Afton@ymail.com	1988-08-13	128	57.36	Obulbaran	Saint Helena	SR	1
2569	Gilligan Marsden	Gilligan.Marsden@ymail.com	1932-01-02	975	87.02	Santa Cruz de la Sierra	Costa Rica	YE	1
2661	Fidelia Tufts	Fidelia.Tufts@ymail.com	1981-07-18	717	99.39	Johor Bahru	French Southern Territories	TM	1
2666	Deloria Rocha	Deloria.Rocha@ymail.com	1907-01-06	399	82.03	Gaborone	Iceland	TG	1
2671	Leanne Franklin	Leanne.Franklin@ymail.com	2002-07-01	120	70.00	Port Moresby	Green (Geeling) Islands	JP	1
2674	Edee Fredi	Edee.Fredi@ymail.com	1948-01-31	496	45.53	N'Djamena	France	NG	1
2675	Korrine Lamoree	Korrine.Lamoree@ymail.com	1972-04-16	869	40.54	Faisalabad	Sierra Leone	SY	1
2673	Justina Garlinda	Justina.Garlinda@ymail.com	1913-08-25	909	68.59	Burundi	Burundi	BF	1
2680	Odessa Roxana	Odessa.Roxana@ymail.com	2008-04-11	413	99.98	Porto Alegre	Germany	GU	1
2684	Malina Gregory	Malina.Gregory@ymail.com	1945-09-07	909	68.00	Portobelo	Ethiopia	PH	1
2688	Leanne Carissa	Leanne.Carissa@ymail.com	1935-07-23	371	93.00	Portobelo	Chile	AE	1
2674	Wimber Bartlett	Wimber.Bartlett@ymail.com	1933-02-24	139	84.76	Ashkhabat	Peru	SI	1
2678	Catrina Dex	Catrina.Dex@ymail.com	1907-02-28	192	91.17	Zagreb	Christmas Island	WP	1
2683	Demetris Lane	Demetris.Lane@ymail.com	1992-08-08	381	98.29	Tehran	Martinique	GS	1
2779	Suzette Gamaliel	Suzette.Gamaliel@ymail.com	1969-01-13	717	91.35	Phuket (city)	Estonia	HN	1
2780	Leanne Pauline	Leanne.Pauline@ymail.com	1973-05-02	580	70.00	Davao	Antarctica	LE	1
2786	Leanne Barret	Leanne.Barret@ymail.com	2008-07-20	441	96.45	Detroit	Ireland	AM	1
2795	Sophia Raut	Sophia.Raut@ymail.com	1908-10-15	980	92.38	Rockhampton	Kazakhstan	AN	1
2800	Leanne Sandee	Sandee.Sandee@ymail.com	1918-01-28	515	80.52	Salzburg	Malta	AQ	1
2804	Andree Carril	Andree.Carril@ymail.com	1988-10-20	576	93.09	Singapore	Porto Alegre	GU	1
2846	Cherilyn Roumell	Cherilyn.Roumell@ymail.com	2005-06-23	68	100.40	Helsinki	Italy	MT	1
2951	Leanne Adored	Leanne.Adored@ymail.com	2018-10-11	607	96.00	Nanning	Dominican Republic	DZ	1
2953	Leili Raychel	Leili.Raychel@ymail.com	1930-07-23	153	53.58	Lima	Anguilla	WV	1
2954	Marlie Bouncu	Marlie.Bouncu@ymail.com	1923-08-09	599	71.36	Jakarta	Portugal	TZ	1
2992	Edith Alwin	Edith.Alwin@ymail.com	2006-05-14	749	52.96	Bilbao	Kazakhstan	BW	1

924 rows in set (0.00 sec)

Task 17: Truncate the students-table.

```
mysql> TRUNCATE TABLE Student;
```

```
mysql> TRUNCATE TABLE Student;
Query OK, 0 rows affected (0.03 sec)
```

Task 18: Display its contents.

```
mysql> select * from Student;
```

```
mysql> select * from Student;  
Empty set (0.00 sec)
```

```
mysql> |
```

Task 19: Drop Students-table.

```
mysql> drop table Student;
```

```
mysql> drop table Student;  
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> |
```

Task 20: Display its contents.

```
mysql> select * from Student;  
mysql> select * from Student;  
ERROR 1146 (42S02): Table 'aditya.Student' doesn't exist  
mysql> |
```

Table does not exit because it was dropped in previous stage. Verifying the “student-table” via listing all the available table.

```
mysql> show tables;  
+-----+  
| Tables_in_aditya |  
+-----+  
| new_table       |  
+-----+  
1 row in set (0.00 sec)  
  
mysql> |
```