

# **COMSATS UNIVERSITY**



**WAH CAMPUS**

**Title: Formula 1 Case Study**

**Submitted By**

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**Registration No:**

Fa19bcs051	Fa19-BCS-056	Fa19-BCS-047	Fa19-BCS-194
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**Class/Section:**

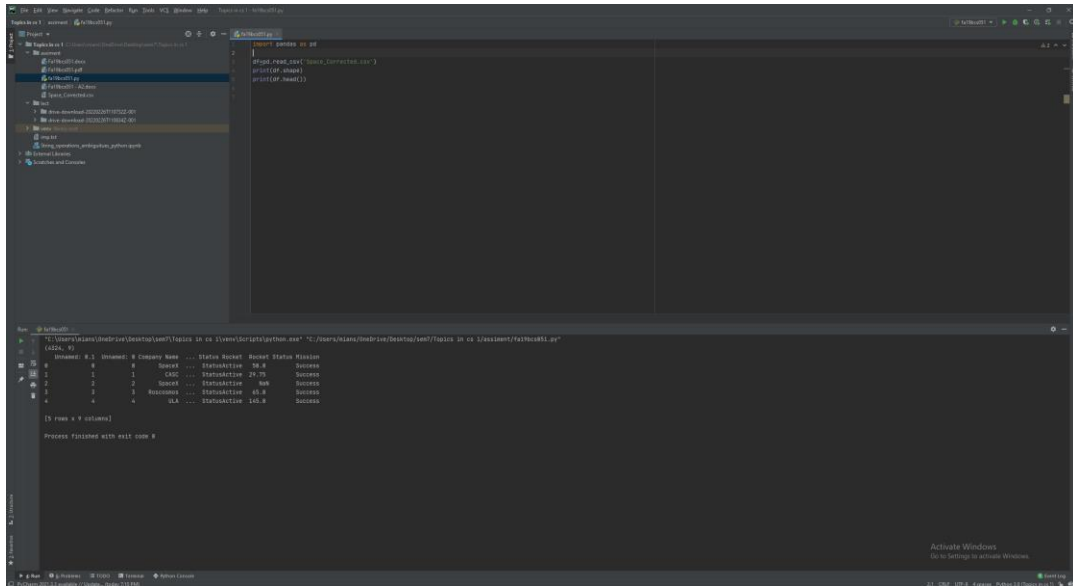
*BSCS/6d*

**Submitted To**

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**Date of Submission:** *27/03/2022*

## Read using Data Frame



The screenshot shows a Jupyter Notebook interface. The left sidebar displays a file explorer with a folder named 'Space\_Corrected'. The main area contains a code cell with the following Python code:

```
import pandas as pd
df=pd.read_csv('Space_Corrected.csv')
print(df.shape)
print(df.head())
```

The output of the code is displayed below the cell, showing the shape of the DataFrame and its first five rows:

```
Out[1]: (5, 8)

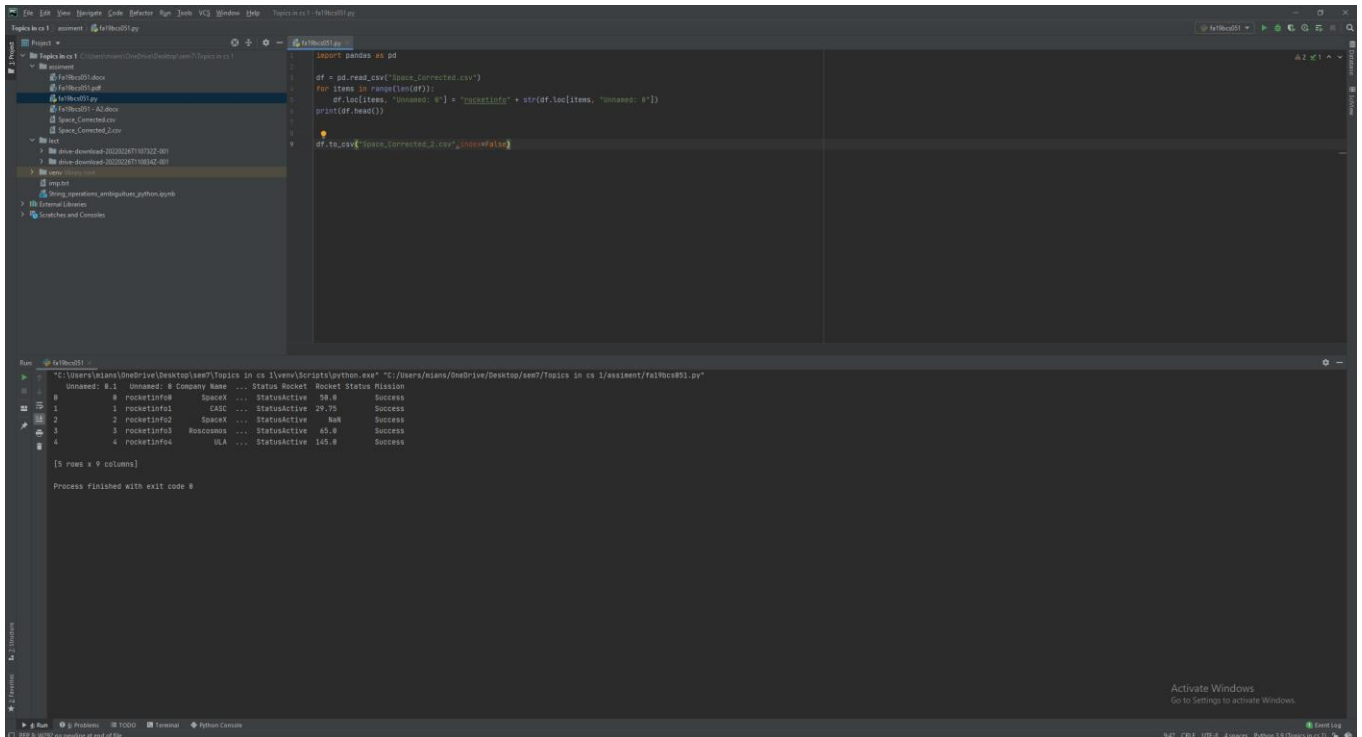
Out[2]:
```

	Unnamed: 0	Unnamed: 1	Company Name	Status	Result	Status	Reason
0	0	0	SpaceX	...	Successful	100%	Success
1	1	1	SpaceX	...	Successful	100%	Success
2	2	2	SpaceX	...	Successful	100%	Success
3	3	3	SpaceX	...	Successful	100%	Success
4	4	4	SpaceX	...	Successful	100%	Success

The output also includes a message: "Process finished with exit code 0".

```
import pandas as pd
df=pd.read_csv('Space_Corrected.csv')
print(df.shape)
print(df.head())
```

## Assign a particular value to a specific row or a column in a Data Frame.



```
import pandas as pd
df = pd.read_csv("Space_Corrected.csv")
for items in range(len(df)):
    df.loc[items, "Unnamed: 0"] = "rocketinfo" + str(df.loc[items, "Unnamed: 0"])
    print(df.head())

df.to_csv("Space_Corrected_2.csv", index=False)
```

Run: "C:\Users\mians\OneDrive\Desktop\learn\Topics in cs\l\view\scripts\python.exe" "C:\Users\mians\OneDrive\Desktop\learn\Topics in cs\l\assignment\failrocs01.py"

	Unnamed: 0	rocketinfo	SpaceX	Status	Success	Failure	Reason	Altitude
0	0	rocketinfo	SpaceX	StatusActive	59.0	Success		
1	1	rocketinfo	CASD	StatusActive	29.75	Success		
2	2	rocketinfo	SpaceX	StatusActive	80.0	Success		
3	3	rocketinfo	SpaceX	StatusActive	65.0	Success		
4	4	rocketinfo	ULA	StatusActive	140.0	Success		

[5 rows x 9 columns]

Process finished with exit code 0

```
import pandas as pd

df = pd.read_csv("Space_Corrected.csv")
for items in range(len(df)):
    df.loc[items, "Unnamed: 0"] = "rocketinfo" + str(df.loc[items, "Unnamed: 0"])
    print(df.head())

df.to_csv("Space_Corrected_2.csv", index=False)
```



```
import pandas as pd

df = pd.read_csv("Space_Corrected.csv").fillna(0)
# adding an new row
df.loc[len(df)] = [
    4599,
    4599,
    "Pakistan",
    "Site 20000, Test dvalue, Kazakhstan",
    "Fri Oct 04, 1957 19:28 UTC",
    "just test data",
    "new column ",
    29,
    "failure",
]
# adding an new column
df.fillna(0)
df["points"] = 0
for items in range(len(df)):
    df.loc[items, "Points"] = int(df.loc[items, "Rocket"]) * 5

print(df.head())
print(df.tail())

df.to_csv("Space_Corrected_2.csv", index=False)
```

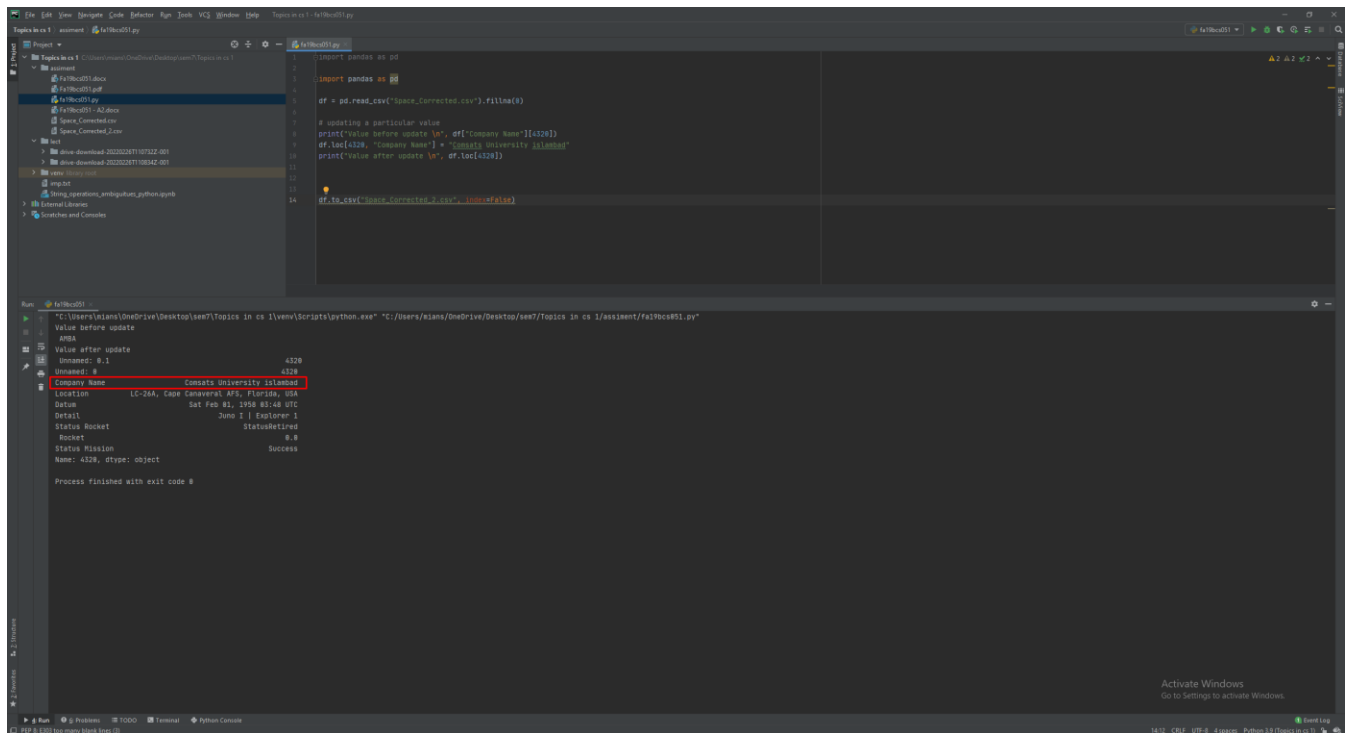
### New row added

4321	4319	4319 US Navy	LC-18A, Cc Wed Feb ( Vanguard StatusReti	0 Failure	0	0
4322	4320	4320 AMBA	LC-26A, Cc Sat Feb 01 Juno I   ExStatusReti	0 Success	0	0
4323	4321	4321 US Navy	LC-18A, Cc Fri Dec 06, Vanguard StatusReti	0 Failure	0	0
4324	4322	4322 RVSN USS	Site 1/5, B Sun Nov 0 Sputnik 8 StatusReti	0 Success	0	0
4325	4323	4323 RVSN USS	Site 1/5, B Fri Oct 04, Sputnik 8 StatusReti	0 Success	0	0
4326	4599	4599 Pakistan	Site 20000 Fri Oct 04, just test d new color	29 failure	0	145
4327						
4328						
4329						

### New Column added

[illegible]

## Update or modify a particular value



The screenshot shows a Jupyter Notebook in VS Code with the following code:

```
1 import pandas as pd
2
3 import pandas as pd
4
5 df = pd.read_csv("Space_Corrected.csv").fillna(0)
6
7 # updating a particular value
8 print("Value before update \n", df["Company Name"][4320])
9 df.loc[4320, "Company Name"] = "Comsats University islambad"
10 print("Value after update \n", df.loc[4320])
11
12
13
14 df.to_csv("Space_Corrected_2.csv", index=False)
```

The output of the notebook shows the value before and after the update:

```
Value before update
4320
Company Name    Comsats University islambad
Location      LC-26A, Cape Canaveral AFS, Florida, USA
Date          sat Feb 01, 1958 03:14:0 UTC
Detail        Juno I | Explorer 1
Status Rocket  StatusRelined
Rocket        6.8
Status Mission Success
Name: 4320, dtype: object
```

Process finished with exit code 0

```
import pandas as pd

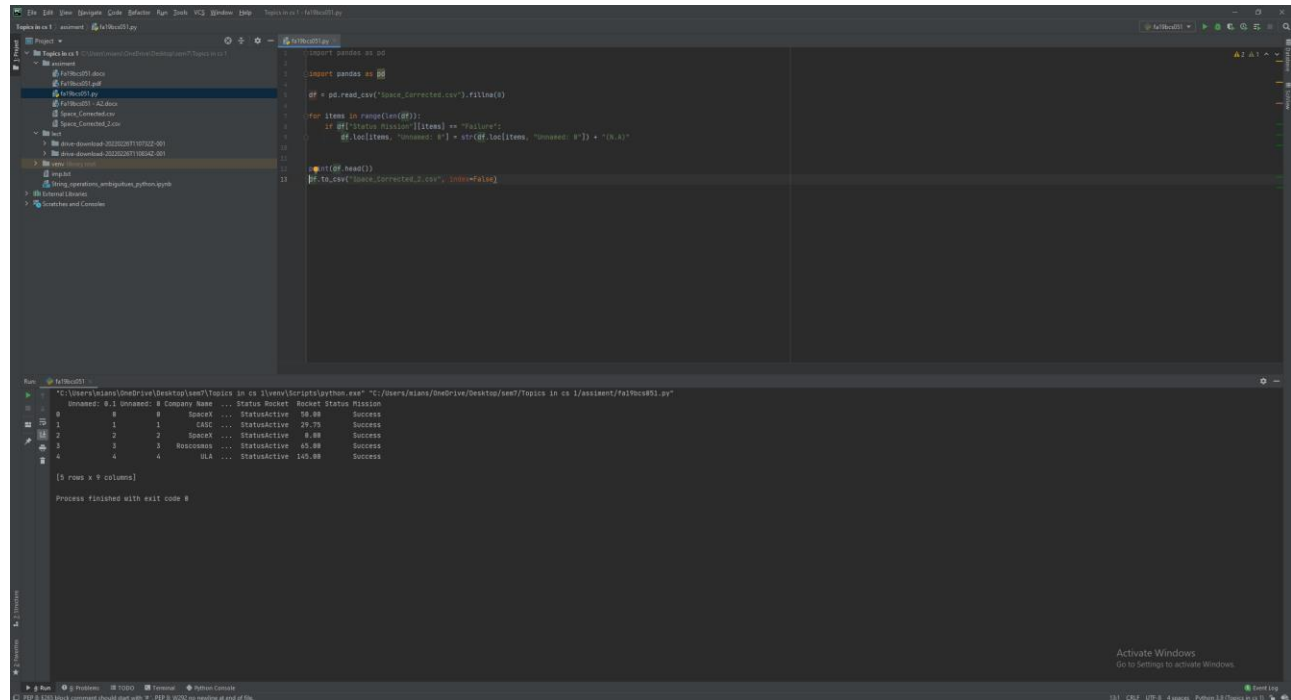
import pandas as pd

df = pd.read_csv("Space_Corrected.csv").fillna(0)

# updating a particular value
print("Value before update \n", df["Company Name"][4320])
df.loc[4320, "Company Name"] = "Comsats University islambad"
print("Value after update \n", df.loc[4320])
```

update or modify a particular row or a column.

## Updating column nu#2



The screenshot shows a Jupyter Notebook interface with a file explorer on the left, a code editor in the center, and a console output at the bottom. The code in the notebook is as follows:

```
import pandas as pd
df = pd.read_csv("Space_Corrected.csv").fillna(0)
for items in range(len(df)):
    if df["Status Mission"][items] == "Failure":
        df.loc[items, "Unnamed: 0"] = str(df.loc[items, "Unnamed: 0"]) + "(N.A)"
print(df.head())
df.to_csv("Space_Corrected_2.csv", index=False)
```

The console output shows the execution of the script, displaying the first five rows of the DataFrame:

```
Unnamed: 0: 0 Company Name ... Status Rocket Rocket Status Mission
0      0      SpaceX ... StatusActive 58.88      Success
1      1      CSST ... StatusActive 29.75      Success
2      2      SpaceX ... StatusActive 8.88      Success
3      3      Roscosmos ... StatusActive 45.88      Success
4      4      ILSA ... StatusActive 145.88      Success
```

The output is a 5 rows x 9 columns DataFrame. The process finished with exit code 0.

```
import pandas as pd

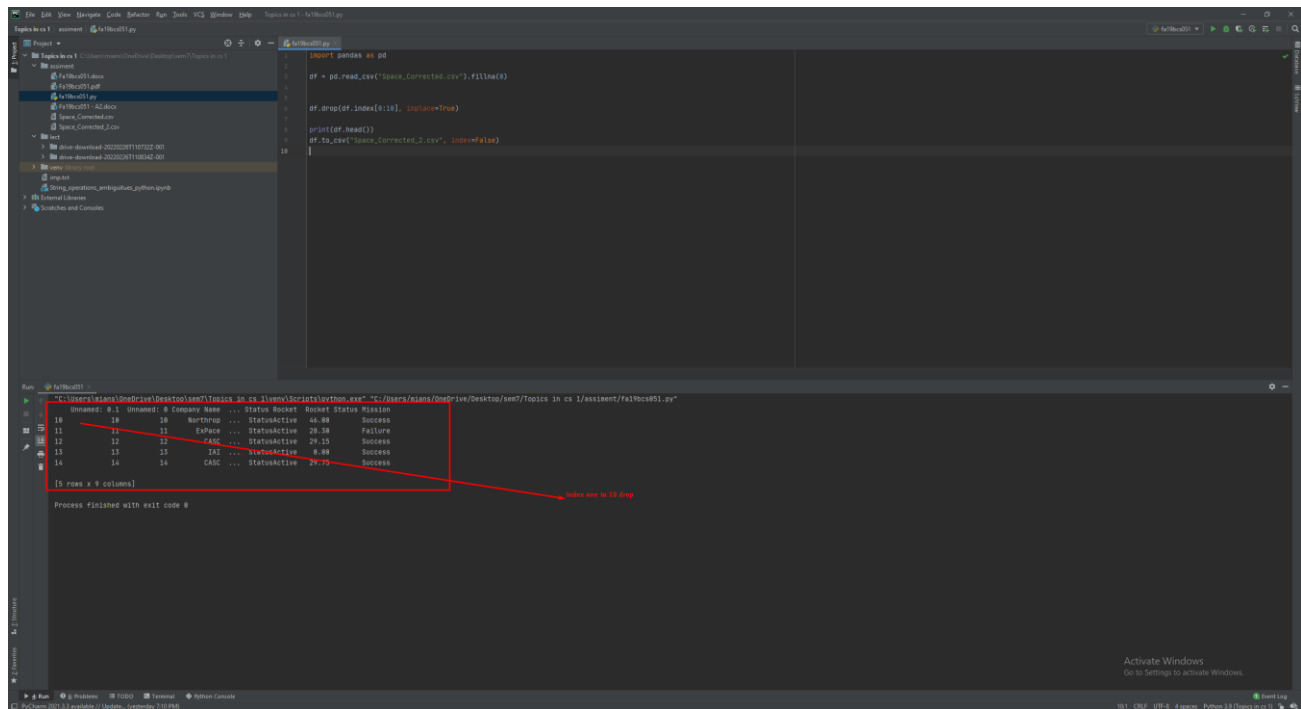
df = pd.read_csv("Space_Corrected.csv").fillna(0)

for items in range(len(df)):
    if df["Status Mission"][items] == "Failure":
        df.loc[items, "Unnamed: 0"] = str(df.loc[items, "Unnamed: 0"]) + "(N.A)"

print(df.head())
df.to_csv("Space_Corrected_2.csv", index=False)
```

## Delete rows and any column as per your understanding.

### Deleting row 1-10



The screenshot shows a Jupyter Notebook interface with a file explorer on the left, a code editor in the center, and a console output at the bottom. The code in the editor reads a CSV file, drops the first 10 rows, and saves the result. The console output shows the resulting DataFrame with 5 rows and 9 columns.

```
import pandas as pd

df = pd.read_csv("Space_Corrected.csv").fillna(0)

df.drop(df.index[0:10], inplace=True)

print(df.head())

df.to_csv("Space_Corrected_2.csv", index=False)
```

Console Output:

```
Unmanned: 0.1 Unmanned: 0 Company Name ... Status Rocket Rocket Status Mission
10 10 10 10 Northrop ... StatusActive 40.88 Success
11 11 11 11 SpaceX ... StatusActive 28.38 Failure
12 12 12 12 SpaceX ... StatusActive 29.15 Success
13 13 13 13 IAI ... StatusActive 0.88 Success
14 14 14 14 CASD ... StatusActive 29.77 Success

[5 rows x 9 columns]
```

Process finished with exit code 0

```
import pandas as pd

df = pd.read_csv("Space_Corrected.csv").fillna(0)

df.drop(df.index[0:10], inplace=True)

print(df.head())
df.to_csv("Space_Corrected_2.csv", index=False)
```



```

import pandas as pd

df = pd.read_csv('Space_Corrected.csv').fillna(0)
print(df.shape)
print(df.head())
print('Assigning a Particular value to column at index2')
for items in range(len(df)):
    df.loc[items, 'Unnamed: 0'] = 'rocketinfo' + str(df.loc[items,
        'Unnamed: 0'])
print(df.head())

# adding an new row

print('Adding a new row')
df.loc[len(df)] = [
    4599,
    4599,
    'Pakistan',
    'Site 20000, Test dvalue, Kazakhstan',
    'Fri Oct 04, 1957 19:28 UTC',
    'just test data',
    'new column ',
    29,
    'failure',
    ]

# adding an new column

print('adding a new column')
df['points'] = 0
for items in range(len(df)):
    df.loc[items, 'Points'] = int(df.loc[items, 'Rocket']) * 5

print(df.head())
print(df.tail())

# updating a particular value

print('Updating company name for index 4320\n')
print('Value before update \n', df['Company Name'][4320])
df.loc[4320, 'Company Name'] = 'Comsats University islambad'
print('Value after update \n', df.loc[4320])

# updating row 2

print('Updating row2')
for items in range(len(df)):
    if df['Status Mission'][items] == 'Failure':
        df.loc[items, 'Unnamed: 0'] = str(df.loc[items, 'Unnamed: 0']) \
            + '(N.A)'
print('Dropping rows 0 to 10')
df.drop(df.index[0:10], inplace=True)

print(df.head())
df.to_csv('Space_Corrected_2.csv', index=False)

```

## References:

[All Space Missions from 1957 | Kaggle](#)