Student Alcohol Consumption

Introduction:

This time you will download a dataset from the UCI.

Step 1. Import the necessary libraries

```
import pandas as pd
```

Step 2. Import the dataset from this address.

Step 3. Assign it to a variable called df.

```
df = pd.read_csv('https://raw.githubusercontent.com/thieu1995/csv-files/main/data/pandas/student-mat.csv')
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	...	famrel	freetime	goout	Dalc	Walc	health	absences	G1	G2	G3
0	GP	F	18	U	GT3	A	4	4	at_home	teacher	...	4	3	4	1	1	3	6	5	6	6
1	GP	F	17	U	GT3	T	1	1	at_home	other	...	5	3	3	1	1	3	4	5	5	6
2	GP	F	15	U	LE3	T	1	1	at_home	other	...	4	3	2	2	3	3	10	7	8	10
3	GP	F	15	U	GT3	T	4	2	health	services	...	3	2	2	1	1	5	2	15	14	15
4	GP	F	16	U	GT3	T	3	3	other	other	...	4	3	2	1	2	5	4	6	10	10

5 rows × 33 columns

Step 4. For the purpose of this exercise slice the dataframe from 'school' until the 'guardian' column

```
df = df.loc[:,'school':'guardian']
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	reason	guardian
0	GP	F	18	U	GT3	A	4	4	at_home	teacher	course	mother
1	GP	F	17	U	GT3	T	1	1	at_home	other	course	father
2	GP	F	15	U	LE3	T	1	1	at_home	other	other	mother
3	GP	F	15	U	GT3	T	4	2	health	services	home	mother

Step 5. Create a lambda function that will capitalize strings.

```
capitalizer = lambda x: x.capitalize()
```

Step 6. Capitalize both Mjob and Fjob

```
df['Mjob'] = df['Mjob'].apply(capitalizer)
df['Fjob'] = df['Fjob'].apply(capitalizer)
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	reason	guardian
0	GP	F	18	U	GT3	A	4	4	At_home	Teacher	course	mother
1	GP	F	17	U	GT3	T	1	1	At_home	Other	course	father
2	GP	F	15	U	LE3	T	1	1	At_home	Other	other	mother
3	GP	F	15	U	GT3	T	4	2	Health	Services	home	mother

Step 7. Print the last elements of the data set.

```
df.loc[df.index[-1],:]
```

	394
school	MS
sex	M
age	19
address	U
famsize	LE3
Pstatus	T
Medu	1
Fedu	1
Mjob	Other
Fjob	At_home
reason	course
guardian	father

Step 8. Did you notice the original dataframe is still lowercase? Why is that? Fix it and capitalize Mjob and Fjob.

```
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	reason	guardian
0	GP	F	18	U	GT3	A	4	4	At_home	Teacher	course	mother
1	GP	F	17	U	GT3	T	1	1	At_home	Other	course	father
2	GP	F	15	U	LE3	T	1	1	At_home	Other	other	mother
3	GP	F	15	U	GT3	T	4	2	Health	Services	home	mother

```
df = df.map(lambda x: x.upper() if isinstance(x, str) else x)
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	reason	guardian
0	GP	F	18	U	GT3	A	4	4	AT_HOME	TEACHER	COURSE	MOTHER
1	GP	F	17	U	GT3	T	1	1	AT_HOME	OTHER	COURSE	FATHER
2	GP	F	15	U	LE3	T	1	1	AT_HOME	OTHER	OTHER	MOTHER
3	GP	F	15	U	GT3	T	4	2	HEALTH	SERVICES	HOME	MOTHER

```
df['Mjob'] = df['Mjob'].apply(capitalizer)
df['Fjob'] = df['Fjob'].apply(capitalizer)
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	reason	guardian
0	GP	F	18	U	GT3	A	4	4	At_home	Teacher	COURSE	MOTHER
1	GP	F	17	U	GT3	T	1	1	At_home	Other	COURSE	FATHER
2	GP	F	15	U	LE3	T	1	1	At_home	Other	OTHER	MOTHER
3	GP	F	15	U	GT3	T	4	2	Health	Services	HOME	MOTHER

Step 9. Create a function called majority that returns a boolean value to a new column called legal_drinker (Consider majority as older than 17 years old)

```
def majority(x):
    if x > 17:
        return True
    else:
        return False
df['legal_drinker'] = df['age'].apply(majority)
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	reason	guardian	legal_drinker
0	GP	F	18	U	GT3	A	4	4	At_home	Teacher	COURSE	MOTHER	True
1	GP	F	17	U	GT3	T	1	1	At_home	Other	COURSE	FATHER	False
2	GP	F	15	U	LE3	T	1	1	At_home	Other	OTHER	MOTHER	False
3	GP	F	15	U	GT3	T	4	2	Health	Services	HOME	MOTHER	False

Step 10. Multiply every number of the dataset by 10.

I know this makes no sense, don't forget it is just an exercise

```
def multiply_by_10(x):
    if isinstance(x, (int, float)):
        return x * 10
    return x
df = df.map(multiply_by_10)
df.head()
```

	school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob	reason	guardian	legal_drinker
0	GP	F	1800	U	GT3	A	400	400	At_home	Teacher	COURSE	MOTHER	100
1	GP	F	1700	U	GT3	T	100	100	At_home	Other	COURSE	FATHER	0
2	GP	F	1500	U	LE3	T	100	100	At_home	Other	OTHER	MOTHER	0
3	GP	F	1500	U	GT3	T	400	200	Health	Services	HOME	MOTHER	0
4	GP	F	1600	U	GT3	T	300	300	Other	Other	HOME	FATHER	0