Python

1.How To COALESCE In Pandas

This function returns the first non-null value between 2 columns.

```
import pandas as pd
import numpy as np


df=pd.DataFrame({"A":[1,2,np.nan,4,np.nan],"B":['A',"B","C","D","E"]})

df
```

	A	B
0	1.0	A
1	2.0	B
2	NaN	C
3	4.0	D
4	NaN	E

In the following example, it will return the values of column A and if they are null, it will return the corresponding value of column B.

```
df['combined'] = df['A'].combine_first(df['B'])
df
```

	A	B	combined
0	1.0	A	1
1	2.0	B	2
2	NaN	C	C
3	4.0	D	4
4	NaN	E	E

2.How To Disable All Warnings In Python

You can disable all python warnings by running the following code block.

```
import sys
if not sys.warnoptions:
    import warnings
    warnings.simplefilter("ignore")
```

3.How to Convert A Pandas DataFrame To XML

There is no Pandas function to convert a dataframe to XML but we will show you how to do it with a simple custom function. This is very useful, especially when working with flask and you want your API to have as output an XML file.

```
#lets create a dataframe
df=pd.DataFrame({'A':[1,2,3,4,5],'B':['a','b','c','d','e']})
df
```

	A	B
0	1	a
1	2	b
2	3	c
3	4	d
4	5	e

Let's build the `to_xml` function:

```
def to_xml(df):
    def row_xml(row):
        xml = ['']
        for i, col_name in enumerate(row.index):
            xml.append('  <{0}>{1}'.format(col_name, row.iloc[i]))
        xml.append('')
        return '\n'.join(xml)
    res = '\n'.join(df.apply(row_xml, axis=1))
    return(res)

print(to_xml(df))
```

```
<item>
   <A>1</A>
   <B>a</B>
</item>
<item>
   <A>2</A>
   <B>b</B>
</item>
<item>
   <A>3</A>
   <B>c</B>
</item>
<item>
   <A>4</A>
   <B>d</B>
</item>
<item>
   <A>5</A>
   <B>e</B>
</item>
```

Now, if you want to save it as XML:

```
with open('df.XML', 'w') as f:
    f.write(to_xml(df))
```

4.Replace a List of Strings with another List of Strings

There isn't any common way to replace a list of strings with another list of strings within a text without applying a for loop or multiple regular expression calls. With this quick and easy hack, we can do it in one line of code using Pandas DataFrames.

```
import pandas as pd
df = pd.DataFrame({'text': ['Billy is going to visit Rome in November', 'I was
born in 10/10/2010', 'I will be there at 20:00']})
df
```

	text
0	Billy is going to visit Rome in November
1	I was born in 10/10/2010
2	I will be there at 20:00

```
to_replace=['Billy','Rome','January|February|March|April|May|June|July|August|
September|October|November|December', '\d{2}:\d{2}', '\d{2}/\d{2}/\d{4}']

replace_with=['name','city','month','time', 'date']

df['modified'] = df.text.replace(to_replace, replace_with, regex=True)

df
```

	text	modified
0	Billy is going to visit Rome in November	name is going to visit city in month
1	I was born in 10/10/2010	I was born in date
2	I will be there at 20:00	I will be there at time

Note that the replacements on the text are done in the order they appear in the lists.

R

5.Use of `select_if` | `rename_if` in Tidyverse

The `select_if` function belongs to `dplyr` and is very useful where we want to choose some columns based on some conditions. We can also add a function that applies to column names.

Example: Let's say that I want to choose only the numeric variables and to add the prefix "numeric_" to their column names.

```
library(tidyverse)

iris%>%select_if(is.numeric,  list(~ paste0("numeric_", .)))%>%head()
```

```
  numeric_Sepal.Length numeric_Sepal.Width numeric_Petal.Length numeric_Petal.Width
1                  5.1                 3.5                  1.4                 0.2
2                  4.9                 3.0                  1.4                 0.2
3                  4.7                 3.2                  1.3                 0.2
4                  4.6                 3.1                  1.5                 0.2
5                  5.0                 3.6                  1.4                 0.2
6                  5.4                 3.9                  1.7                 0.4
```

Note that we can also use the `rename_if` in the same way. An important note is that the rename_if(), rename_at(), and rename_all() have been superseded by rename_with(). The matching select statements have been superseded by the combination of a select() + rename_with().

These functions were superseded because mutate_if() and friends were superseded by across(). select_if() and rename_if() already use tidy selection so they can't be replaced by across() and instead we need a new function.

6.Use of `where` in Tidyverse

We can `select` or `rename` columns using the `where` by selecting the variables for which a function returns TRUE. We will work with the same examples as above.

Example: Let's say that I want to choose only the numeric variables and to add the prefix "numeric_" to their column names.

```
library(tidyverse)

iris%>%rename_with(~ paste0("numeric_", .), where(is.numeric))%>%
       select(where(is.numeric))%>%head()
```

	numeric_Sepal.Length	numeric_Sepal.Width	numeric_Petal.Length	numeric_Petal.Width
1	5.1	3.5	1.4	0.2
2	4.9	3.0	1.4	0.2
3	4.7	3.2	1.3	0.2
4	4.6	3.1	1.5	0.2
5	5.0	3.6	1.4	0.2
6	5.4	3.9	1.7	0.4

7.Use of `everything` in Tidyverse

In many Data Science projects, we want one particular column (usually the dependent variable y) to appear first or last in the dataset. We can achieve this using the `everything()` from `dplyr` package.

Example: Let's say that I want the column Species to appear **first** in my dataset.

```
library(tidyverse)

mydataset<-iris%>%select(Species, everything())
mydataset%>%head()
```

	Species	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width
1	setosa	5.1	3.5	1.4	0.2
2	setosa	4.9	3.0	1.4	0.2
3	setosa	4.7	3.2	1.3	0.2
4	setosa	4.6	3.1	1.5	0.2
5	setosa	5.0	3.6	1.4	0.2
6	setosa	5.4	3.9	1.7	0.4

8.Use of `relocate` in Tidyverse

The `relocate()` is a new addition in dplyr 1.0.0. You can specify exactly where to put the columns with **.before** or **.after**

Example: Let's say that I want the Petal.Width column to appear next to Sepal.Width

```
library(tidyverse)

iris%>%relocate(Petal.Width, .after=Sepal.Width)%>%head()
```

	Sepal.Length	Sepal.Width	Petal.Width	Petal.Length	Species
1	5.1	3.5	0.2	1.4	setosa
2	4.9	3.0	0.2	1.4	setosa
3	4.7	3.2	0.2	1.3	setosa
4	4.6	3.1	0.2	1.5	setosa
5	5.0	3.6	0.2	1.4	setosa
6	5.4	3.9	0.4	1.7	setosa

Notice that we can also set to appear after the last column.

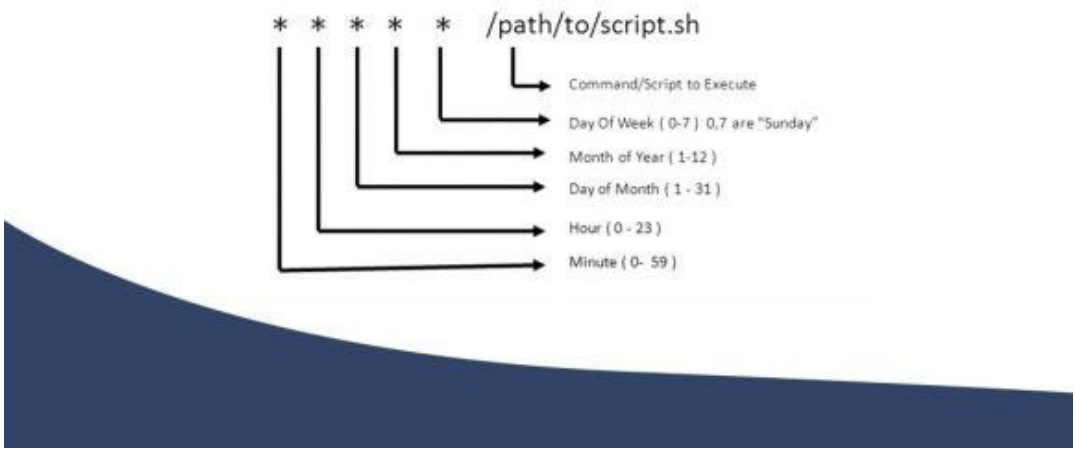
Example: Let's say that I want the Petal.Width to be the last column

```
iris%>%relocate(Petal.Width, .after=last_col())%>%head()
```

	Sepal.Length	Sepal.Width	Petal.Length	Species	Petal.Width
1	5.1	3.5	1.4	setosa	0.2
2	4.9	3.0	1.4	setosa	0.2
3	4.7	3.2	1.3	setosa	0.2
4	4.6	3.1	1.5	setosa	0.2
5	5.0	3.6	1.4	setosa	0.2
6	5.4	3.9	1.7	setosa	0.4

Linux

9.How To Schedule A Cron Job In Linux



Many times there is a need to run a script in our server periodically. We can schedule our work using cron. The first thing that we need to do is to go to the **terminal** and to open the crontab by typing the command:

```
crontab -e
```

The first time it will ask you to choose your editor, which can be then **nano**, **vim** etc. Personally, I prefer the `nano` which is the simplest one. Once we open the editor we are ready to schedule our cron job.

There are 5 placeholders which are referred to **minute** (0-59), **hour** (0-23), **day of month** (1-31), **month** (1-12) and **day of week** (0-6) starting from Sunday=0.

Let's say that I have a python script called **mytest.py** and I want to run it **every minute**. Then we have to write within crontab:

```
* * * * * python /path/to/mytest.py
```

Let's say that I want to run it **every ten minutes**. Notice that we can use the "/" to define steps:

```
# it runs the script every 10 minutes
*/10 * * * * python /path/to/mytest.py
```

Let's give some other examples. Look at the comments.

```
# it runs the script every Friday at 3am
0 3 * * 5 python /path/to/mytest.py

# it runs the script every week
0 0 */7 * * python /path/to/mytest.py

# it runs the script every 1st and 15th of the month
0 0 1,15 * * python /path/to/mytest.py
```

You can see which cron jobs have been scheduled with the command:

```
crontab -l
```

```
You can open the text editor and erase the particular line of the
corresponding cron job or you can remove all the cron jobs without opening the
editor by running:
```

```
crontab -r
```

If you get confused and you are not sure about what you have scheduled, there is a nice **crontab-generator** which can write the command of crontab for you! Then you just need to copy-paste it at the crontab after typing `crontab -e`.

10.How to Select Columns

Assume that we are dealing with the following CSV file called **eg1.csv**.

```
ID,Name,Dept,Gender
1,George,DS,M
2,Billy,DS,M
3,Nick,IT,M
4,George,IT,M
5,Nikki,HR,F
6,Claudia,HR,F
7,Maria,Sales,F
8,Jimmy,Sales,M
9,Jane,Marketing,F
10,George,DS,M
```

If you want to select columns, you can use the command **cut**. It has several options (use **man cut** to explore them), but the most common is something like:

```
cut -f 1-2,4 -d , eg1.csv
```

This means “select columns 1 through 2 and columns 4, using comma as the separator”. **cut** uses **-f** (meaning “fields”) to specify columns and **-d** (meaning “delimiter”) to specify the separator. The above command returns:

```
ID,Name,Gender
1,George,M
2,Billy,M
3,Nick,M
4,George,M
5,Nikki,F
6,Claudia,F
7,Maria,F
8,Jimmy,M
9,Jane,F
10,George,M
```

In order to **exclude** a column or columns we do the opposite of selecting columns by adding the **–complement**. For instance let’s say that we want to exclude the second column.

```
cut --complement -f 2 -d , eg1.csv …
```