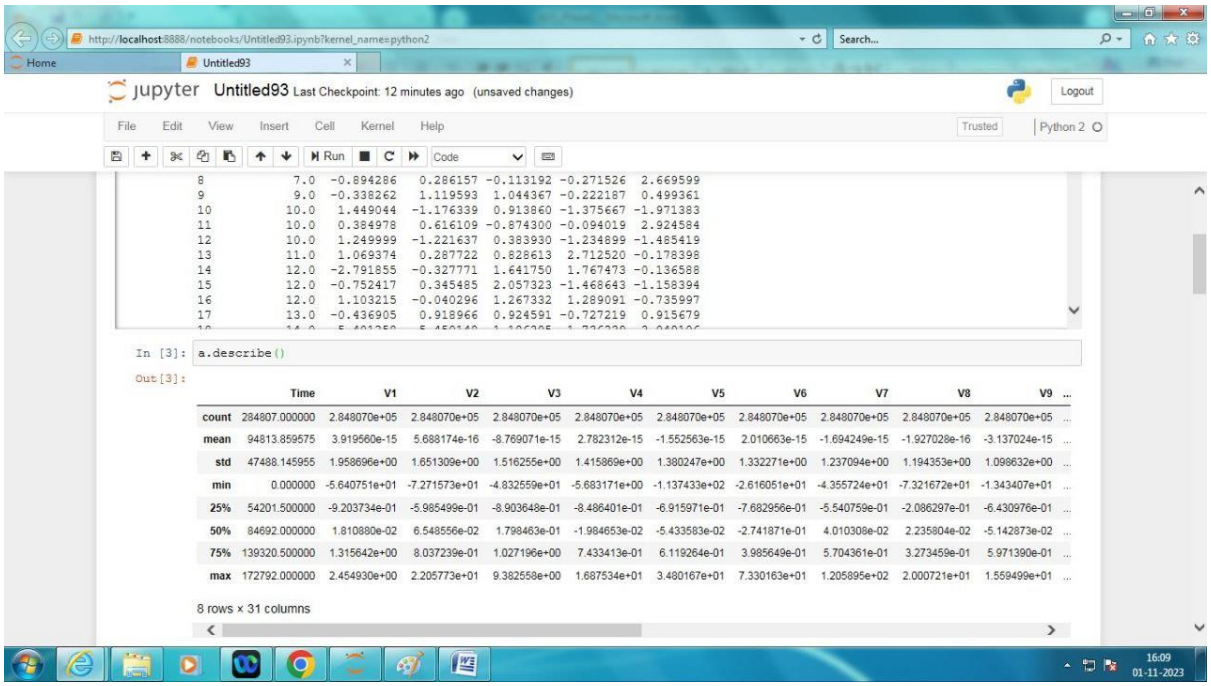
Phase3:Development part1

Importing CSV file :



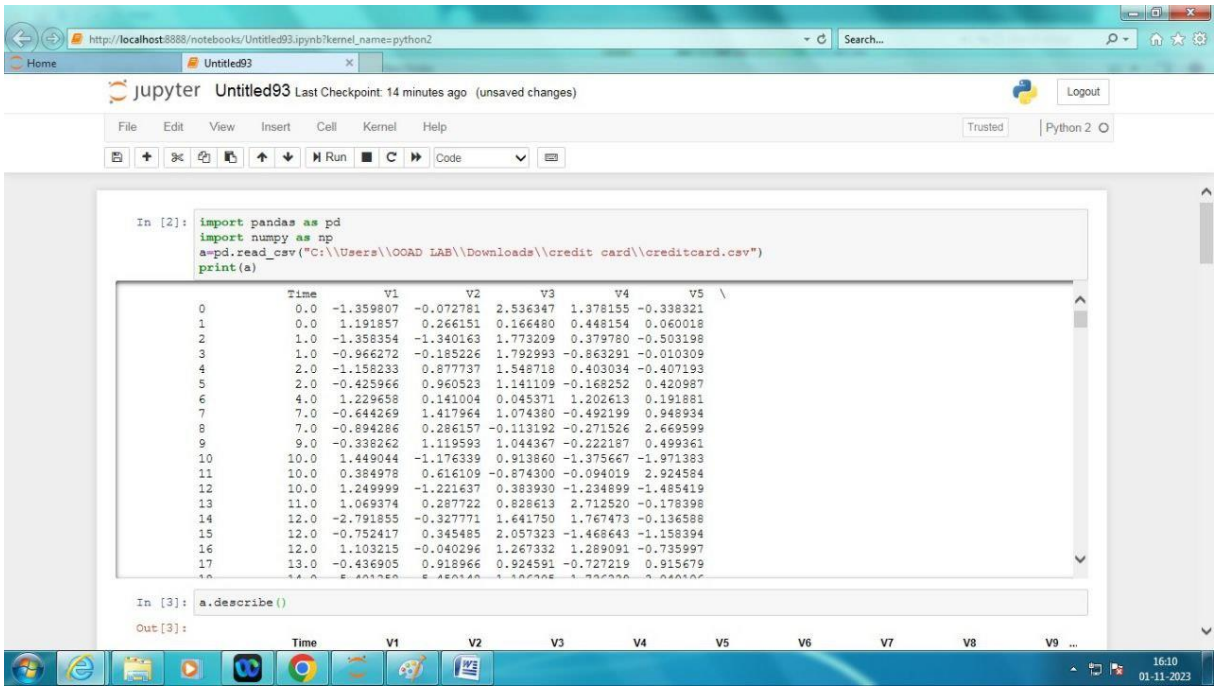
```
In [3]: a.describe()
```

Out[3]:

	Time	V1	V2	V3	V4	V5	V6	V7	V8	V9	...
count	284807.000000	2.848070e+05	2.848070e+05	2.848070e+05	2.848070e+05	2.848070e+05	2.848070e+05	2.848070e+05	2.848070e+05	2.848070e+05	...
mean	94813.859575	3.919560e-15	5.688174e-16	-8.769071e-15	2.782312e-15	-1.552563e-15	2.010663e-15	-1.694249e-15	-1.927028e-16	-3.137024e-15	...
std	47488.145955	1.958696e+00	1.651309e+00	1.516255e+00	1.415869e+00	1.380247e+00	1.332271e+00	1.237094e+00	1.194353e+00	1.098632e+00	...
min	0.000000	-5.640751e+01	-7.271573e+01	-4.832559e+01	-5.683171e+00	-1.137433e+02	-2.616051e+01	-4.355724e+01	-7.321672e+01	-1.343407e+01	...
25%	54201.500000	-9.203734e-01	-5.985499e-01	-8.903648e-01	-8.486401e-01	-6.915971e-01	-7.682956e-01	-5.540759e-01	-2.086297e-01	-6.430976e-01	...
50%	84692.000000	1.810880e-02	6.548556e-02	1.798463e-01	-1.984653e-02	-5.433583e-02	-2.741871e-01	4.010308e-02	2.235804e-02	-5.142873e-02	...
75%	139320.500000	1.315642e+00	8.037239e-01	1.027196e+00	7.433413e-01	6.119264e-01	3.985649e-01	5.704361e-01	3.273459e-01	5.971390e-01	...
max	172792.000000	2.454930e+00	2.205773e+01	9.382558e+00	1.687534e+01	3.480167e+01	7.330163e+01	1.205895e+02	2.000721e+01	1.559499e+01	...

8 rows × 31 columns

Preprocessing:



```
In [2]: import pandas as pd
        import numpy as np
        a=pd.read_csv("C:\\Users\\OOAD LAB\\Downloads\\credit card\\creditcard.csv")
        print(a)
```

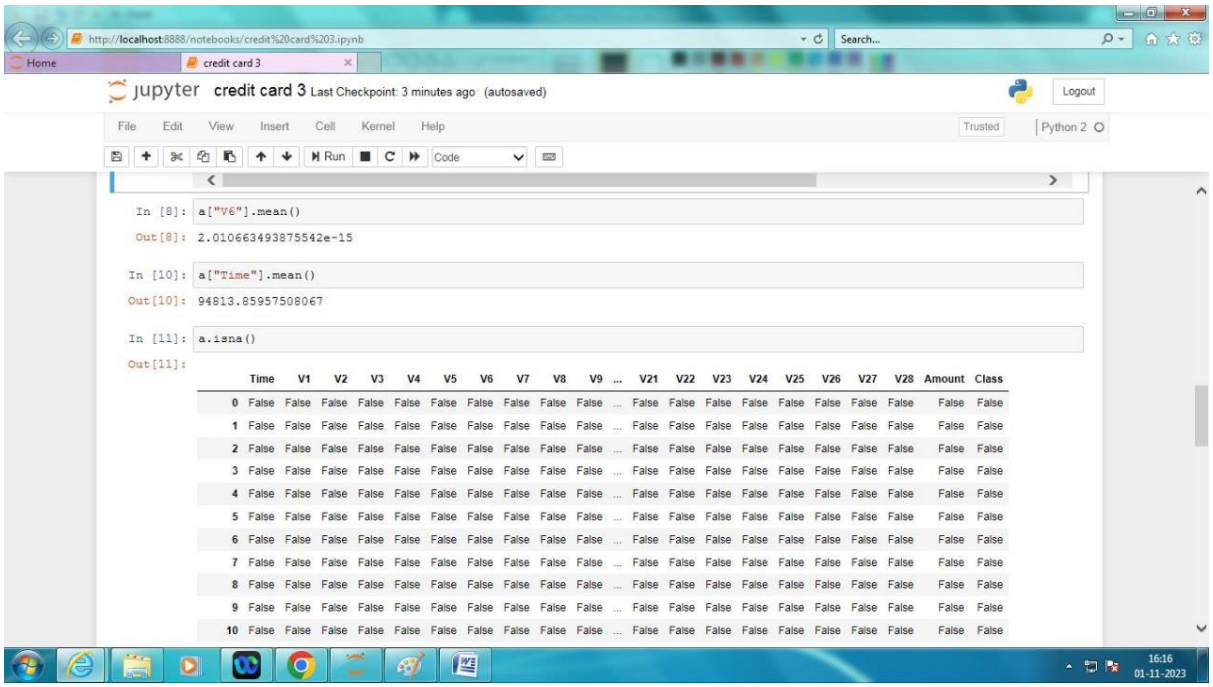
```
        Time         V1        V2        V3        V4        V5  \
0        0.0  -1.359807 -0.072781  2.536347  1.378155 -0.338321
1        0.0   1.191857  0.266151  0.166480  0.448154  0.060018
2        1.0  -1.358354 -1.340163  1.773209  0.379780 -0.503198
3        1.0  -0.966272 -0.185226  1.792993 -0.863291 -0.010309
4        2.0  -1.158233  0.877737  1.548718  0.403034 -0.407193
5        2.0  -0.425966  0.960523  1.141109 -0.168252  0.420987
6        4.0   1.229658  0.141004  0.045371  1.202613  0.191881
7        7.0  -0.644269  1.417964  1.074380 -0.492199  0.948934
8        7.0  -0.894286  0.286157 -0.113192 -0.271526  2.669599
9        9.0  -0.338262  1.119593  1.044367 -0.222187  0.499361
10      10.0   1.449044 -1.176339  0.913860 -1.375667 -1.971383
11      10.0   0.384978  0.616109 -0.874300 -0.094019  2.924584
12      10.0   1.249999 -1.221637  0.383930 -1.234899 -1.485419
13      11.0   1.069374  0.287722  0.828613  2.712520 -0.178398
14      12.0  -2.791855 -0.327771  1.641750  1.767473 -0.136588
15      12.0  -0.752417  0.345485  2.057323 -1.468643 -1.158394
16      12.0   1.103215 -0.040296  1.267332  1.289091 -0.735997
17      13.0  -0.436905  0.918966  0.924591 -0.727219  0.915679
```

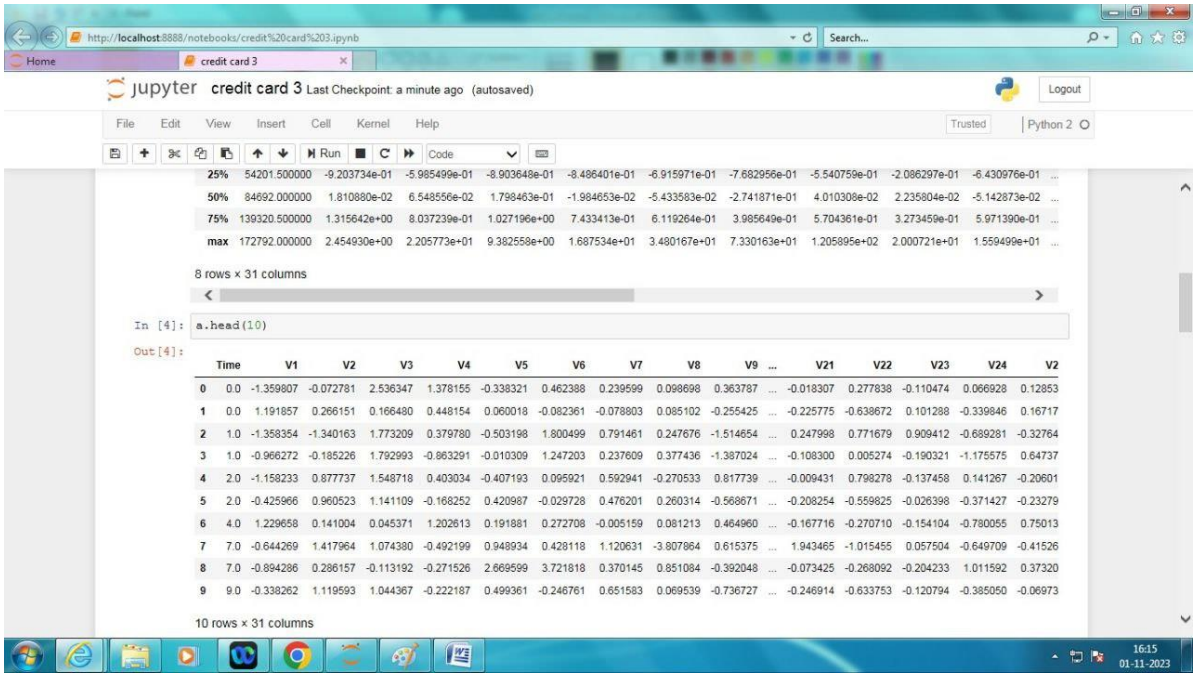
```
In [3]: a.describe()
```

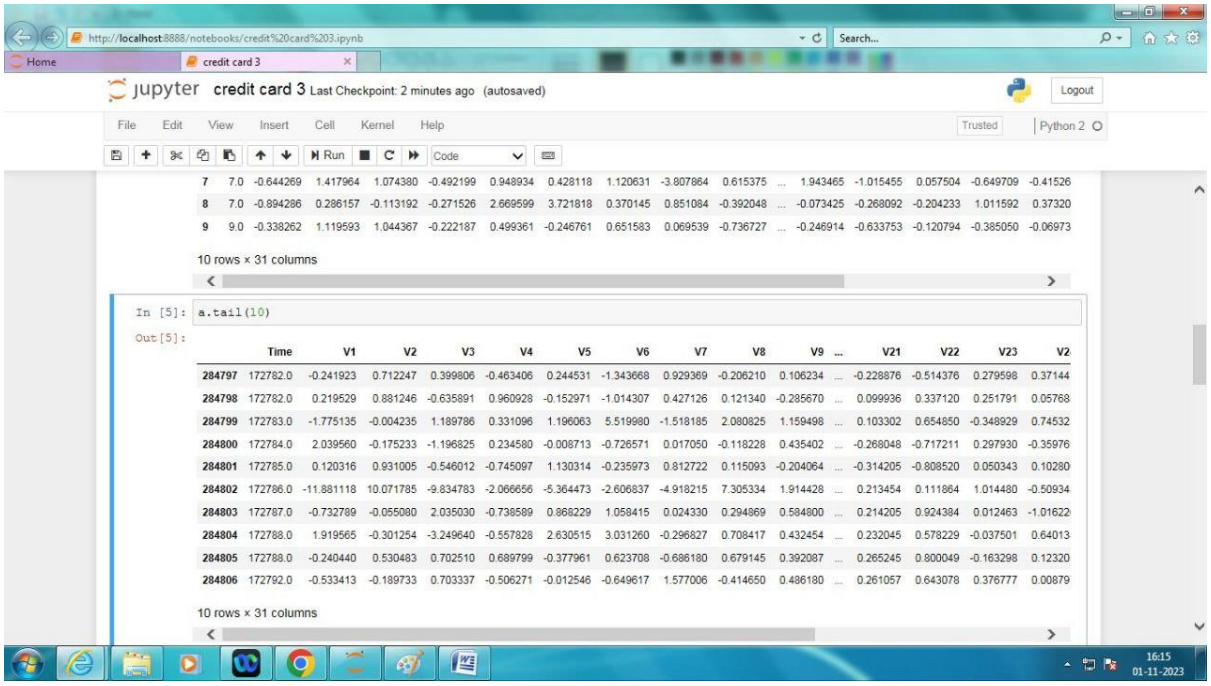
Out[3]:

	Time	V1	V2	V3	V4	V5	V6	V7	V8	V9	...

Preforming various operation:


http://localhost:8888/notebooks/credit%20card%203.ipynb
Search...
Home
credit card 3
jupyter credit card 3 Last Checkpoint: 3 minutes ago (autosaved)
Logout
File Edit View Insert Cell Kernel Help
Trusted
Python 2
Run
Code
In [8]: a["V6"].mean()
Out[8]: 2.0106634938755 42e-15
In [10]: a["Time"].mean()
Out[10]: 94813.85957508067
In [11]: a.isna()
Out[11]:
Time V1 V2 V3 V4 V5 V6 V7 V8 V9 ... V21 V22 V23 V24 V25 V26 V27 V28 Amount Class
0 False False False False False False False False False False ... False False False False False False False False False False
1 False False False False False False False False False False ... False False False False False False False False False False
2 False False False False False False False False False False ... False False False False False False False False False False
3 False False False False False False False False False False ... False False False False False False False False False False
4 False False False False False False False False False False ... False False False False False False False False False False
5 False False False False False False False False False False ... False False False False False False False False False False
6 False False False False False False False False False False ... False False False False False False False False False False
7 False False False False False False False False False False ... False False False False False False False False False False
8 False False False False False False False False False False ... False False False False False False False False False False
9 False False False False False False False False False False ... False False False False False False False False False False
10 False False False False False False False False False False ... False False False False False False False False False False
16:16
01-11-2023


http://localhost:8888/notebooks/credit%20card%203.ipynb
Search...
Home
credit card 3
jupyter credit card 3 Last Checkpoint: a minute ago (autosaved)
Logout
File Edit View Insert Cell Kernel Help
Trusted
Python 2
Run
Code
25% 54201.500000 -9.203734e-01 -5.985499e-01 -8.903648e-01 -8.486401e-01 -6.915971e-01 -7.682956e-01 -5.540759e-01 -2.086297e-01 -6.430976e-01 ...
50% 84692.000000 1.810880e-02 6.548556e-02 1.798463e-01 -1.984653e-02 -5.433583e-02 -2.741871e-01 4.010308e-02 2.235804e-02 -5.142873e-02 ...
75% 139320.500000 1.315642e+00 8.037239e-01 1.027196e+00 7.433413e-01 6.119264e-01 3.985649e-01 5.704361e-01 3.273459e-01 5.971390e-01 ...
max 172792.000000 2.454930e+00 2.205773e+01 9.382558e+00 1.687534e+01 3.480167e+01 7.330163e+01 1.205895e+02 2.000721e+01 1.559499e+01 ...
8 rows × 31 columns
In [4]: a.head(10)
Out[4]:
Time V1 V2 V3 V4 V5 V6 V7 V8 V9 ... V21 V22 V23 V24 V2
0 0.0 -1.359807 -0.072781 2.536347 1.378155 -0.338321 0.462388 0.239599 0.098698 0.363787 ... -0.018307 0.277838 -0.110474 0.066928 0.12853
1 0.0 1.191857 0.266151 0.166480 0.448154 0.060018 -0.082361 -0.078803 0.085102 -0.255425 ... -0.225775 -0.638672 0.101288 -0.339846 0.16717
2 1.0 -1.358354 -1.340163 1.773209 0.379780 -0.503198 1.800499 0.791461 0.247676 -1.514654 ... 0.247998 0.771679 0.909412 -0.689281 -0.32764
3 1.0 -0.966272 -0.185226 1.792993 -0.863291 -0.010309 1.247203 0.237609 0.377436 -1.387024 ... -0.108300 0.005274 -0.190321 -1.175575 0.64737
4 2.0 -1.158233 0.877737 1.548718 0.403034 -0.407193 0.095921 0.592941 -0.270533 0.817739 ... -0.009431 0.798278 -0.137458 0.141267 -0.20601
5 2.0 -0.425966 0.960523 1.141109 -0.168252 0.420987 -0.029728 0.476201 0.260314 -0.568671 ... -0.208254 -0.559825 -0.026398 -0.371427 -0.23279
6 4.0 1.229658 0.141004 0.045371 1.202613 0.191881 0.272708 -0.005159 0.081213 0.464960 ... -0.167716 -0.270710 -0.154104 -0.780055 0.75013
7 7.0 -0.644269 1.417964 1.074380 -0.492199 0.948934 0.428118 1.120631 -3.807864 0.615375 ... 1.943465 -1.015455 0.057504 -0.649709 -0.41526
8 7.0 -0.894286 0.286157 -0.113192 -0.271526 2.669599 3.721818 0.370145 0.851084 -0.392048 ... -0.073425 -0.268092 -0.204233 1.011592 0.37320
9 9.0 -0.338262 1.119593 1.044367 -0.222187 0.499361 -0.246761 0.651583 0.069539 -0.736727 ... -0.246914 -0.633753 -0.120794 -0.385050 -0.06973
10 rows × 31 columns
16:15
01-11-2023


http://localhost:8888/notebooks/credit%20card%203.ipynb
Search...
Home
credit card 3
jupyter credit card 3 Last Checkpoint: 2 minutes ago (autosaved)
Logout
File Edit View Insert Cell Kernel Help
Trusted
Python 2
Run
Code
7 7.0 -0.644269 1.417964 1.074380 -0.492199 0.948934 0.428118 1.120631 -3.807864 0.615375 ... 1.943465 -1.015455 0.057504 -0.649709 -0.41526
8 7.0 -0.894286 0.286157 -0.113192 -0.271526 2.669599 3.721818 0.370145 0.851084 -0.392048 ... -0.073425 -0.268092 -0.204233 1.011592 0.37320
9 9.0 -0.338262 1.119593 1.044367 -0.222187 0.499361 -0.246761 0.651583 0.069539 -0.736727 ... -0.246914 -0.633753 -0.120794 -0.385050 -0.06973
10 rows × 31 columns
In [5]: a.tail(10)
Out[5]:
Time V1 V2 V3 V4 V5 V6 V7 V8 V9 ... V21 V22 V23 V2
284797 172782.0 -0.241923 0.712247 0.399806 -0.463406 0.244531 -1.343668 0.929369 -0.206210 0.106234 ... -0.228876 -0.514376 0.279598 0.37144
284798 172782.0 0.219529 0.881246 -0.635891 0.960928 -0.152971 -1.014307 0.427126 0.121340 -0.285670 ... 0.099936 0.337120 0.251791 0.05768
284799 172783.0 -1.775135 -0.004235 1.189786 0.331096 1.196063 5.519980 -1.518185 2.080825 1.159498 ... 0.103302 0.654850 -0.348929 0.74532
284800 172784.0 2.039560 -0.175233 -1.196825 0.234580 -0.008713 -0.726571 0.017050 -0.118228 0.435402 ... -0.268048 -0.717211 0.297930 -0.35976
284801 172785.0 0.120316 0.931005 -0.546012 -0.745097 1.130314 -0.235973 0.812722 0.115093 -0.204064 ... -0.314205 -0.808520 0.050343 0.10280
284802 172786.0 -11.881118 10.071785 -9.834783 -2.066656 -5.364473 -2.606837 -4.918215 7.305334 1.914428 ... 0.213454 0.111864 1.014480 -0.50934
284803 172787.0 -0.732789 -0.055080 2.035030 -0.738589 0.868229 1.058415 0.024330 0.294869 0.584800 ... 0.214205 0.924384 0.012463 -1.01622
284804 172788.0 1.919565 -0.301254 -3.249640 -0.557828 2.630515 3.031260 -0.296827 0.708417 0.432454 ... 0.232045 0.578229 -0.037501 0.64013
284805 172788.0 -0.240440 0.530483 0.702510 0.689799 -0.377961 0.623708 -0.686180 0.679145 0.392087 ... 0.265245 0.800049 -0.163298 0.12320
284806 172792.0 -0.533413 -0.189733 0.703337 -0.506271 -0.012546 -0.649617 1.577006 -0.414650 0.486180 ... 0.261057 0.643078 0.376777 0.00879
10 rows × 31 columns
16:15
01-11-2023