hd9gem3li

March 6, 2025

```
import pandas as pd
[2]:
     import numpy as np
     import statistics as st
[3]: data_frame=pd.read_csv("/home/ubuntu/DSBDA/test_AV3.csv")
     print(data_frame)
           Loan_ID Gender Married Dependents
                                                    Education Self_Employed
    0
          LP001015
                      Male
                                Yes
                                                     Graduate
                                                                           No
    1
          LP001022
                      Male
                                Yes
                                              1
                                                     Graduate
                                                                           No
    2
          LP001031
                      Male
                                              2
                               Yes
                                                     Graduate
                                                                           No
    3
          LP001035
                      Male
                               Yes
                                              2
                                                     Graduate
                                                                           No
    4
          LP001051
                                              0
                                                 Not Graduate
                      Male
                                 No
                                                                           No
     . .
    362
          LP002971
                      Male
                               Yes
                                             3+
                                                 Not Graduate
                                                                          Yes
          LP002975
                      Male
                               Yes
                                                     Graduate
    363
                                              0
                                                                           No
    364
          LP002980
                      Male
                                 No
                                              0
                                                     Graduate
                                                                           No
    365
          LP002986
                      Male
                               Yes
                                              0
                                                     Graduate
                                                                           No
    366
          LP002989
                      Male
                                 No
                                                     Graduate
                                                                          Yes
                            CoapplicantIncome
                                                              Loan_Amount_Term
          ApplicantIncome
                                                 LoanAmount
    0
                      5720
                                                       110.0
                                                                          360.0
    1
                      3076
                                           1500
                                                       126.0
                                                                          360.0
    2
                                           1800
                      5000
                                                       208.0
                                                                          360.0
    3
                      2340
                                           2546
                                                       100.0
                                                                          360.0
    4
                      3276
                                              0
                                                        78.0
                                                                          360.0
                                           1777
                                                       113.0
                                                                          360.0
    362
                      4009
    363
                                                       115.0
                                                                          360.0
                      4158
                                           709
    364
                      3250
                                           1993
                                                       126.0
                                                                          360.0
                                           2393
                                                       158.0
    365
                      5000
                                                                          360.0
    366
                      9200
                                              0
                                                        98.0
                                                                          180.0
          Credit_History Property_Area Loan_Status
    0
                      1.0
                                   Urban
                                                    Y
                                                    Y
                      1.0
                                   Urban
    1
    2
                                                    Y
                      1.0
                                   Urban
```

Y

Urban

3

NaN

4	1.0	Urban		Y
	•••	•••	•••	
362	1.0	Urban		Y
363	1.0	Urban		Y
364	NaN	Semiurban		Y
365	1.0	Rural		Y
366	1.0	Rural		Y

[367 rows x 13 columns]

[4]: print(data_frame.info())

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 367 entries, 0 to 366
Data columns (total 13 columns):

#	Column	Non-Null Count	Dtype
0	Loan_ID	367 non-null	object
1	Gender	356 non-null	object
2	Married	367 non-null	object
3	Dependents	357 non-null	object
4	Education	367 non-null	object
5	Self_Employed	344 non-null	object
6	ApplicantIncome	367 non-null	int64
7	${\tt CoapplicantIncome}$	367 non-null	int64
8	LoanAmount	362 non-null	float64
9	Loan_Amount_Term	361 non-null	float64
10	Credit_History	338 non-null	float64
11	Property_Area	367 non-null	object
12	Loan_Status	367 non-null	object

dtypes: float64(3), int64(2), object(8)

memory usage: 37.4+ KB

None

[5]: print(data_frame.mean)

<pre><bound method="" ndframeadd_numeric_operations.<locals="">.mean of Loan_ID</bound></pre>								
Gend	er Married	Depender	nts	Education	Self	Employed	\	
0	LP001015	Male	Yes	0		${\tt Graduate}$	No	
1	LP001022	Male	Yes	1		${\tt Graduate}$	No	
2	LP001031	Male	Yes	2		${\tt Graduate}$	No	
3	LP001035	Male	Yes	2		${\tt Graduate}$	No	
4	LP001051	Male	No	0	Not	${\tt Graduate}$	No	
	•••				•••			
362	LP002971	Male	Yes	3+	Not	${\tt Graduate}$	Yes	
363	LP002975	Male	Yes	0		${\tt Graduate}$	No	
364	LP002980	Male	No	0		${\tt Graduate}$	No	
365	LP002986	Male	Yes	0		${\tt Graduate}$	No	

	366	LP002989	Male	No	0	Graduat	e Yes	
		Applicantl	ncome	CoapplicantI	ncome	Loan Amount	Loan_Amount_Term	\
	0		5720	· · · · · · · · · · · · · · · · · · ·	0	110.0	360.0	,
	1		3076		1500	126.0	360.0	
	2		5000		1800	208.0	360.0	
	3		2340		2546	100.0	360.0	
	4		3276		0	78.0	360.0	
			•••			•••	•••	
	362		4009		1777	113.0	360.0	
	363		4158		709	115.0	360.0	
	364		3250		1993	126.0	360.0	
	365		5000		2393	158.0	360.0	
	366		9200		0	98.0	180.0	
		Credit_His	story Pi	roperty_Area	Loan_S	tatus		
	0		1.0	Urban		Y		
	1		1.0	Urban		Y		
	2		1.0	Urban		Y		
	3		NaN	Urban		Y		
	4		1.0	Urban		Y		
			•••	•••	•••			
	362		1.0	Urban		Y		
	363		1.0	Urban		Y		
	364		NaN	Semiurban		Y		
	365		1.0	Rural		Y		
	366		1.0	Rural		Y		
	[367 rows x 13 columns]>							
[6]:	prin	nt(data_fra	me.loc[:,'Applicant	Income	'].mean())		
	400E	E004EE0400	70					
	4005	.5994550408	012					
[7]:	prin	nt(data_fra	me.loc[:,'Applicant	Income	'].median())		
	3786	.0						
[8]:	prin	nt(data_fra	me.mode	;)				
	Channel method Data France mode of the Lory ID Conden Manusical Dependents							
	<pre><bound \<="" dataframe.mode="" dependents="" education="" gender="" loan_id="" married="" method="" of="" pre="" self_employed=""></bound></pre>							
	0	LP001015	Male	Yes	0	Graduat	e No	
	1	LP001010	Male	Yes	1	Graduat		
	2	LP001031	Male	Yes	2	Graduat		
	3	LP001035	Male	Yes	2	Graduat		
	4	LP001051	Male	No	0	Not Graduat		
					ŭ			

```
362 LP002971
                      Male
                                Yes
                                             3+
                                                 Not Graduate
                                                                          Yes
     363 LP002975
                      Male
                                Yes
                                              0
                                                      Graduate
                                                                           No
                                              0
     364
          LP002980
                      Male
                                 No
                                                      Graduate
                                                                           No
     365
          LP002986
                      Male
                                Yes
                                              0
                                                      Graduate
                                                                           No
         LP002989
                                 No
                                              0
     366
                      Male
                                                      Graduate
                                                                          Yes
           ApplicantIncome
                             CoapplicantIncome
                                                LoanAmount Loan_Amount_Term
     0
                      5720
                                                       110.0
                                                                          360.0
     1
                      3076
                                           1500
                                                       126.0
                                                                          360.0
     2
                      5000
                                           1800
                                                       208.0
                                                                          360.0
     3
                      2340
                                           2546
                                                       100.0
                                                                          360.0
     4
                                              0
                                                        78.0
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                      3276
                       •••
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                      4009
                                           1777
                                                       113.0
                                                                          360.0
     362
     363
                      4158
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                                                       115.0
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     364
                      3250
                                           1993
                                                       126.0
                                                                          360.0
     365
                      5000
                                           2393
                                                       158.0
                                                                          360.0
                      9200
                                                        98.0
     366
                                              0
                                                                          180.0
           Credit_History Property_Area Loan_Status
                      1.0
                                   Urban
     0
     1
                      1.0
                                   Urban
                                                     Y
                                   Urban
                                                    Y
     2
                      1.0
                                                    Y
     3
                      NaN
                                   Urban
     4
                      1.0
                                   Urban
                                                    Y
     . .
                                                     Y
     362
                      1.0
                                   Urban
                                                    Y
     363
                      1.0
                                   Urban
                                                     Y
     364
                      NaN
                               Semiurban
     365
                      1.0
                                   Rural
                                                     Y
                                   Rural
                                                     Y
     366
                      1.0
      [367 rows x 13 columns]>
 [9]: print(data_frame.loc[:,'ApplicantIncome'].mode())
     0
           3500
     1
           5000
     Name: ApplicantIncome, dtype: int64
[10]: print(data_frame.median)
     <bound method NDFrame._add_numeric_operations.<locals>.median of
                                                                                 Loan_ID
     Gender Married Dependents
                                     Education Self_Employed \
     0
          LP001015
                      Male
                                Yes
                                                      Graduate
                                                                           No
     1
          LP001022
                      Male
                                Yes
                                                      Graduate
                                                                           Nο
                                              1
     2
          LP001031
                      Male
                                Yes
                                              2
                                                      Graduate
                                                                           No
     3
          LP001035
                      Male
                                Yes
                                              2
                                                      Graduate
                                                                           No
```

```
4
           LP001051
                      Male
                                 No
                                              0 Not Graduate
                                                                          No
          LP002971
                                Yes
                                                 Not Graduate
     362
                      Male
                                             3+
                                                                         Yes
     363
          LP002975
                      Male
                                Yes
                                              0
                                                     Graduate
                                                                          No
     364
          LP002980
                      Male
                                 No
                                                     Graduate
                                                                          No
                                              0
     365
          LP002986
                      Male
                                Yes
                                              0
                                                     Graduate
                                                                          No
     366
          LP002989
                      Male
                                 No
                                              0
                                                     Graduate
                                                                         Yes
           ApplicantIncome
                            CoapplicantIncome LoanAmount Loan_Amount_Term \
                      5720
                                                      110.0
                                                                          360.0
     0
                      3076
                                          1500
                                                      126.0
                                                                         360.0
     1
     2
                      5000
                                           1800
                                                      208.0
                                                                         360.0
     3
                      2340
                                           2546
                                                      100.0
                                                                         360.0
     4
                      3276
                                              0
                                                       78.0
                                                                         360.0
     . .
     362
                      4009
                                           1777
                                                      113.0
                                                                         360.0
     363
                      4158
                                           709
                                                      115.0
                                                                         360.0
     364
                                           1993
                                                      126.0
                                                                         360.0
                      3250
     365
                      5000
                                           2393
                                                      158.0
                                                                         360.0
                      9200
     366
                                              0
                                                       98.0
                                                                         180.0
           Credit_History Property_Area Loan_Status
                      1.0
                                   Urban
     0
                      1.0
                                   Urban
                                                    Y
     1
     2
                      1.0
                                   Urban
                                                    γ
     3
                      NaN
                                   Urban
                                                    Y
     4
                                                    Y
                      1.0
                                   Urban
     . .
                      •••
                                                    Y
                      1.0
     362
                                   Urban
     363
                      1.0
                                   Urban
                                                    Y
                               Semiurban
                                                    Y
     364
                      NaN
     365
                      1.0
                                   Rural
                                                    Y
                                                    Y
     366
                      1.0
                                   Rural
     [367 rows x 13 columns]>
[11]: print(data_frame.loc[:,'ApplicantIncome'].std())
     4910.685398980397
[12]: print(data_frame.loc[:,'LoanAmount'].std())
     61.36665239301822
[13]: print(data_frame.loc[:,'LoanAmount'].var())
```

3765.866025925529

[]:[