Name:Gottimukkula Rajashekar Reddy Roll No:CH.EN.U4CSE20124

Discord Handle: RajashekarReddy#2168 TASK 6

QUESTION_1.py

```
PS C:\Users\rajashekarreddy\Downloads\cognizance> python -u "C:
1,Aaa,3.5,Maths
2,Bbb,4.2,Physics
3,Ccc,7.62,Chemistry
4,Ddd,9.55,Biology
5,Eee,4.0,Social
6,Fff,7.6,English
7,Ggg,3.111,Maths
8,Hhh,9.99,Physics
9,Iii,1.23,Civics
```

QUESTION_2.py

I	MSSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities	 MasVnrArea	ExterQual	ExterCond	Foundation	8smtQual	BsmtCond	BsmtExposure	BsmtFinType1	BsmtFinSF1	BsmtFinType2
0	60	RL	65.0	8450	Pave	NaN	Reg	Lvi	AllPub	196	Gd	TA	PConc	Gd	TA	No	GLQ	706	Unf
1 :	20	RL	80.0	9600	Pave	NaN	Reg	LvI	AllPub	0	TA	TA	CBlock	Gd	TA	Gd	ALQ	978	Unf
2	60	RL	68.0	11250	Pave	NaN	IR1	LvI	AllPub	162	Gd	TA	PConc	Gd	TA	Mn	GLQ	486	Unf
3	70	RL	60.0	9550	Pave	NaN	IR1	Lvi	AllPub	0	TA	TA	BrkTill	TA	Gd	No	ALQ	216	Unf
4	60	RL	84.0	14260	Pave	NaN	IR1	LvI	AllPub	350	Gd	TA	PConc	Gd	TA	Av	GLQ	655	Unf
94 95	60	RL	69.0	9337	Pave	NaN	IR1	Lvi	AllPub	0	TA	Gd	PConc	Gd	TA	No	GLQ	648	Unf
95 9	60	RL	NaN	9765	Pave	NaN	IR2	LvI	AllPub	68	Ex	Gd	PConc	Gd	Gd	No	ALQ	310	Unf
96 9	20	RL	78.0	10264	Pave	NaN	IR1	LvI	AllPub	183	Gd	TA	PConc	Gd	TA	Av	ALQ	1162	Unf
97 9	20	RL	73.0	10921	Pave	NaN	Reg	HLS	AllPub	48	TA	TA	CBlock	TA	TA	No	Rec	520	Unf
98 99	30	RL	85.0	10625	Pave	NaN	Reg	Lvl	AllPub	0	TA	TA	BrkTill	TA	TA	No	ALQ	108	Unf
99 rows	× 36 columns																		

print(df.isnull().sum())

Ιd MSSubClass MSZoning 0 LotFrontage LotArea Street Alley LotShape LandContour Utilities LotConfig LandSlope Neighborhood Condition1 Condition2 BldgType HouseStyle OverallQual 0 OverallCond 0 YearBuilt YearRemodAdd RoofStyle RoofMatl Exterior1st Exterior2nd MasVnrType MasVnrArea 0 ExterQual ExterCond Foundation BsmtQual BsmtCond BsmtExposure BsmtFinType1 BsmtFinSF1 BsmtFinType2 dtype: int64

```
df['LotFrontage'].fillna(1, inplace=True)
print(df['LotFrontage'])
0
      65.0
     80.0
1
2
      68.0
     60.0
3
4
     84.0
      . . .
94
     69.0
95
      1.0
96
     78.0
97
     73.0
98
      85.0
Name: LotFrontage, Length: 99, dtype: float64
print(df['Alley'].isnull())
0
     True
1
      True
2
      True
3
     True
     True
      . . .
94
      True
95
     True
96
     True
97
     True
98
      True
Name: Alley, Length: 99, dtype: bool
df['Alley'].fillna('no alley here', inplace=True)
print(df['Alley'])
     no alley here
0
1
    no alley here
2
    no alley here
3
    no alley here
4
     no alley here
          . . .
94
    no alley here
95 no alley here
    no alley here
96
    no alley here
97
    no alley here
98
Name: Alley, Length: 99, dtype: object
```

[] df[df['BsmtQual'].isnull()]

	Id	MSSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities	 MasVnrArea	ExterQual	ExterCond	Foundation	BsmtQual	BsmtCond	BsmtExposure	BsmtFinType1	OsmtFinSF1	BsmtFinType2
17	18	90	RL	72.0	10791	Pave	no alley name mentioned	Reg	Lvl	AllPub	0	TA	TA	Slab	NaN	NaN	NaN	NaN	0	NaN
35	40	90	RL	65.0	6040	Pave	no alley name mentioned	Reg	Lvl	AllPub	 0	TA	TA	PConc	NaN	NaN	NaN	NaN	0	NaN
90	91	20	RL	60.0	7200	Pave	no alley name mentioned	Reg	Lvl	AllPub	0	TA	TA	Slab	NaN	NaN	NaN	NaN	0	NaN
3 m	ws × 3	88 columns																		

[] df['BsmtQual'].fillna('no value', inplace=True) df.tail(10)

1	Id	MSSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities	 MasVnrArea	ExterQual	ExterCond	Foundation	DsmtQual	BsmtCond	BsmtExposure	BsmtFinType1	BsmtFinSF1	BsmtFinType2
89 (90	20	RL	60.0	8070	Pave	no alley here	Reg	Lvl	AllPub	0	TA	TA	PConc	Gd	TA	No	GLQ	588	Unf
90 (91	20	RL	60.0	7200	Pave	no alley here	Reg	Lvl	AllPub	 0	TA	TA	Slab	no value	NaN	NaN	NaN	0	NaN
91 (92	20	RL	85.0	8500	Pave	no alley here	Reg	Lvl	AllPub	203	TA	TA	CBlock	TA	TA	No	Rec	600	Unf
92 (93	30	RL	80.0	13380	Pave	Gryl	IR1	HLS	AllPub	0	TA	Od	BrkTil	Gd	TA	No	ALQ	713	Unf
93 (94	190	C (all)	60.0	7200	Pave	no alley here	Reg	Lvl	AllPub	0	TA	TA	BrkTil	TA	Fa	Mn	Rec	1048	Unf
94 (95	60	RL	69.0	9337	Pave	no alley here	IR1	Lvl	AIPub	0	TA	Gd	PCono	Gd	TA	No	GLQ	648	Unf
95 (98	60	RL	1.0	9765	Pave	no alley here	IR2	Lvl	AIPub	68	Ex	Gd	PCono	Gd	Gd	No	ALQ	310	Unf
96 (97	20	RL	78.0	10264	Pave	no alley here	IR1	Lvl	AIPub	183	Gd	TA	PCono	Gd	TA	Au	ALQ	1162	Unf
97 (98	20	RL	73.0	10921	Pave	no alley here	Reg	HLS	AllPub	48	TA	TA	CBlock	TA	TA	No	Rec	520	Unf
98 (99	30	RL	85.0	10825	Pave	no alley here	Reg	Lvl	AllPub	 0	TA	TA	BrkTil	TA	TA	No	ALQ	108	Unf
10 row	vs X	36 columns																		

[] df[df['BsmtQual'].ismull()]

Id MSSubClass MSZoning Lotfrontage LotArea Street Alley LotShape LandContour Utilities ... MasVnArea ExterQual ExterCond Foundation ExetQual ExsetCond ExetExposure ExsetFinSfs ExstfinSpea 0 rows × 38 columns

Of[of["BustCond"].isrwl1()]

0	E	MSSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities	 MasVnrAnea	ExterQual	ExterCond	Foundation	BsmtQual	BuntCond	BuntExposure	BustFinTypei	BumtFinSF1	BsmtFinType2
	17 10	90	RL	72.0	10791	Pave	no alley name mentioned	Reg	Lvi	AlPub	0	TA	TA	Slab	no value given here	NaN	NaN	NaN	0	NaN
	39 40	90	RL	65.0	6040	Pave	no alley name mentioned	Reg	Lvi	AIPub	0	TA	TA	PCono	no value given here	NaN	NaN	NaN	0	NaN
	90 91	20	RL	60.0	7200	Pave	no alley name mentioned	Reg	Lvi	AIPub	0	TA	TA	Slab	no value given here	NaN	NaN	NaN	0	NaN
	anne i	15 columns																		

[] df['BostCond'].filina('No condition', implaced of.tail(10)

2	d 75	SSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities	 MaskinArea	ExterQual	ExterCond	Foundation	BsetQual	BswtCond	BsetExposure	BsetFinType1	Bswtfin5fi	BustFinType2
89 9	0	20	RL.	0.00	8070	Pave	no alley here	Reg	Lwi	AlPub	0	TA	TA	PCono	Gd	TA.	No	GLQ	500	Unf
90 9	5	20	RL.	0.00	7200	Pave	no alley here	Reg	Lwi	AIPub	0	TA	TA	Sub	no value	No condition	NaN	NaN	0	NaN
91 8	2	20	RL	85.0	8500	Pave	no alley here	Reg	Lwi	AIPub	203	TA	TA	CBlock	TA.	TA	No	Rec	600	Unf
92 9	3	30	RL	80.0	13380	Pave	GrvI	IR1	HLS	AlPub	0	TA	Gd	BrkTill	Gd	TA.	No	ALQ	713	Unf
93 0	4	190	C (all)	60.0	7200	Pave	no alley here	Reg	Lwi	AIPub	0	TA	TA	BrkTil	TA	Fa	Mn	Rec	1048	Unf
94 9	5	60	RL.	69.0	9337	Pave	no alley here	IR1	Lwi	AlPub	0	TA.	Od	PConc	Gd	TA.	No	OLO	648	Unf
95 9	8	60	RL.	1.0	9765	Pave	no alley here	IR2	Lwi	AlPub	68	Ex	Od	PConc	Qd.	Od	No	ALQ	310	Unf
96 9	7	20	RL.	78.0	10264	Pave	no alley here	IR1	Lui	AlPub	183	Od	TA.	PCono	Od	TA.	Au	ALQ	1182	Unf
97 9	8	20	RL.	73.0	10921	Pave	no alley here	Reg	HLS	AIPub	48	TA	TA	CBlock	TA	TA	No	Rec	520	Unf
98 9	9	30	RL.	85.0	10825	Pave	no alley here	Reg	Lwi	AIPub	0	TA	TA	BrkTill	TA	TA.	No	ALQ	108	Unf

[] of[of['BustCone'].ismull()]

Id MSSubClass MSIoning LotFrontage LotFrontage LotFrontage LotFrontage LandContour Utilities ... MasVirdFrom Extendant Extended Foundation BaseQual BaseTond BaseQual BaseTond BaseQual BaseTond BaseQual BaseTond BaseQual 0 rows × 36 columns

[] df[df['BsmtExposure'].isnull()]

1	d MSSub	bClass /	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities	 MasVnrArea	ExterQual	ExterCond	Foundation	BsmtQual	BsmtCond	BsmtExposure	OsmtFinType1	OsmtFinSF1	BsmtFinTy	ype2
17	8	90	RL	72.0	10791	Pave	no alley name mentioned	Reg	Lvi	AlPub	0	TA	TA	Slab	no value given here	None	NaN	NaN	0	1	NaN
39 4	0	90	RL	65.0	6040	Pave	no alley name mentioned	Reg	Lvi	AlPub	0	TA	TA	PConc	no value given here	None	NaN	NaN	0		NaN
90 (1	20	RL	60.0	7200	Pave	no alley name mentioned	Reg	Lvi	AlPub	0	TA	TA	Slab	no value given here	None	NaN	NaN	0	1	NaN
3 rous	× 35 colu	umns																			

df['BsmtExposure'].fillna('No exposure', inplace=True) df.tail(10)

	Id MSSubC	ass MSZon	ing LotFronta	ge LotAr	rea Street	Alley	LotShape	LandContour	Utilities	 MasVnrArea	ExterQual	ExterCond	Foundation	BsmtQual	BsmtCond	BsmtExposure	BsmtFinType1	BsetFinSF1	BsetFinType2
89	90	20	RL 60	0.0 80	070 Paw	no alley here	Reg	LvI	AlPub	0	TA	TA	PCono	Gd	TA	No	GLQ	588	Unf
90	91	20	RL 60	0.0 72	200 Paw	no alley here	Reg	LvI	AlPub	0	TA	TA	Slab	no value	No condition	No exposure	NaN	0	NaN
91	92	20	RL 85	5.0 85	500 Paw	no alley here	Reg	LvI	AlPub	203	TA	TA	CBlock	TA	TA	No	Rec	600	Unf
92	93	30	RL 80	0.0 133	360 Pav	GrvI	IR1	HLS	AllPub	0	TA	Gd	BrkTill	Gd	TA	No	ALQ	713	Unf
93	94	190 C	(all) 60	0.0 72	200 Paw	no alley here	Reg	LvI	AllPub	0	TA	TA	BrkTil	TA	Fa	Mn	Rec	1048	Unf
4	95	60	RL 60	0.0 90	337 Pav	no alley here	IR1	LvI	AllPub	 0	TA	Gd	PConc	Od	TA	No	GFÖ	648	Unf
15	98	60	RL 1	.0 97	765 Pavi	no alley here	IR2	Lvl	AllPub	68	Ex	Gd	PConc	Od	0d	No	ALQ	310	Unf
16	97	20	RL 71	100	284 Pavi	no alley here	IR1	LvI	AllPub	 183	Gd	TA	PConc	Od	TA	Av	ALQ	1162	Unif
97	98	20	RL 73	100	921 Pav	no alley here	Reg	HLS	AlPub	48	TA	TA	CBlock	TA	TA	No	Rec	520	Unf
98	99	30	RL 85	0.0 106	525 Paw	no alley here	Reg	LvI	AlPub	0	TA	TA	BrkTill	TA.	TA	No	ALQ	108	Unf
10 rov	vs × 38 colur	ns																	

[] df[df['BsmtExposure'].isnull()]

Id MSSubClass MSZoning LotFrontage LotArea Street Alley LotShape LandContour Utilities ... MasVirnArea ExterQual ExterCond Foundation BasetQual BasetCond BasetExposure BasetFinSy1 BasetFinSy2 0 rows × 36 columns

	04[.6	SsntFinType1].isnull()]																				
	Id	MSSubClass	MSZoning	LotFrontage	LotArea	Street		Alley	LotShape I	andContour	Utilities	MasVn	nrArea (ExterQual	ExterCond	Foundation	BsmtQual	SmtCond	BsmtExp	osure BsmtF	inType1	DsmtFinSF1	DsmtFinT	ype:
17	18	90	RL	72.0	10791	Pave	no alley name	mentioned	Reg	Lvi	AllPub	-	0	TA	TA	Slab	NaN	NaN	No given exp	oosure	NaN	0)	NaN
39	40	90	RL	65.0	6040	Pave	no alley name	mentioned	Reg	Lvi	AllPub		0	TA	TA	PCond	NaN	NaN	No given exp	posure	NaN	0)	NaN
90	91	20	RL	60.0	7200	Pave	no alley name	mentioned	Reg	Lvi	AllPub		0	TA	TA	Slab	NaN	NaN	No given exp	posure	NaN	0)	NaN
3 ro	WS X	38 columns																						
	Bsmt tail(fillna('va	lue not assig	med ', in	place=T	rue)																	
	Id	MSSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContou	Utilities	MasV	nrArea Ext	terQual	ExterCond	Foundation	BsmtQual	BswtCond	BantExp	osure	BsmtFinType:	BsmtFin	nSF1 Bsmti	FinType2	
89	90	20	RL	60.0	8070	Pave	no alley here	Reg	L	AIPub		0	TA	TA	PCono	Gd	TA	i.	No	GLO	1	588	Unf	
	90	20 20	RL RL	60.0	8070 7200		no alley here no alley here	Reg	Li Li			0	TA TA	TA TA			TA No condition			GLC es not assigne		588	Unf NaN	
90						Pave				AIPub		-			Slab	no value		No ex			1			
90	91	20	RL	60.0	7200	Pave	no alley here	Reg	L	AIPub AIPub	_	0	TA	TA	Slab CBlock	no value TA	No condition	No ex	posure value	es not assigne		0	NaN	
90 91 92	91 92	20 20	RL RL	60.0 85.0	7200 8500	Pave Pave Pave	no alley here no alley here	Reg Reg	Ls Ls	AIPub AIPub AIPub		0 203	TA TA	TA TA	Slab CBlock BrkTil	no value TA Gd	No condition TA	No ex	posure value No	es not assigned Re		0	NaN Unf	
90 91 92 93	91 92 93	20 20 30	RL RL	60.0 85.0 80.0	7200 8500 13360	Pave Pave Pave	no alley here no alley here Grvl	Reg Reg IR1	ts HLS	AIPub AIPub AIPub AIPub	-	0 203 0	TA TA TA	TA TA Gd	Slab CBlock BrkTi BrkTi	no value TA Gd	No condition TA	No ex	No No	es not assigned Rei ALC	1	0 600 713	NaN Unf Unf	
90 91 92 93 94	91 92 93 94	20 20 30 190	RL RL RL C (all)	60.0 85.0 80.0 60.0	7200 8500 13360 7200 9337	Pave Pave Pave Pave	no alley here no alley here Grvi no alley here	Reg Reg IR1 Reg	Li Li HLi Li	AIPub AIPub AIPub AIPub AIPub AIPub	-	0 203 0	TA TA TA	TA TA Gd TA	Slab CBlock BrkTil BrkTil PConc	no value TA Gd TA Gd	No condition TA TA	No ex	No No Mn	es not assigner Rei ALC Rei		0 600 713 1048	NaN Unf Unf Unf	
90 91 92 93 94 95	91 92 93 94 95	20 20 30 190 60	RL RL RL C (all)	60.0 85.0 80.0 60.0	7200 8500 13360 7200 9337 9785	Pave Pave Pave Pave Pave	no alley here no alley here Gn/I no alley here no alley here	Reg Reg IR1 Reg IR1	Li Li HLi Li Li	AIPub AIPub AIPub AIPub AIPub AIPub	-	0 203 0 0	TA TA TA TA	TA TA Gd TA Gd	Slab CBlock BrkTi BrkTi PConc	no value TA Gd TA Od Od	No condition TA TA Fa	No ex	No No No Mn No	es not assigned Red ALC Red GLC		0 600 713 1048 648	NaN Unf Unf Unf Unf	
90 91 92 93 94 95	91 92 93 94 95 98	20 20 30 190 60	RL RL C (all) RL RL	60.0 85.0 80.0 60.0 1.0	7200 8500 13360 7200 9337 9765	Pave Pave Pave Pave Pave Pave	no alley here no alley here Grvi no alley here no alley here no alley here	Reg Reg IR1 Reg IR1	LA HAS LA LA LA LA LA LA LA LA LA LA LA LA LA	AIPub		0 203 0 0 0	TA TA TA TA TA TA Ex	TA TA Gd TA Gd	Slab CBlock BrkTil BrkTil PConc PConc	no value TA Gd TA Gd Od Od	No condition TA TA Fa TA Ge	No ex	No No Mn No No No	es not assigned Rei ALC Rei GLC ALC		0 600 713 1045 648 310	NaN Unf Unf Unf Unf	

[] df[df[*matlntypet]*].ismuli()]

Id MSSubClass MSZoning LotFrontage LotArea Street Alley LotShape LandContour Utilities ... MasVhrArea ExterQual ExterCond Foundation BostQual BostCond BostExposure BostFinType2 BostFinType2 Trows X 30 columns

].ismull(

	Id	MSSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities		MasVnrArea	ExterQual	ExterCond	Foundation	BsmtQual	BsmtCond	BsmtExposure	BsmtFinType1	OsmtFinSF1	BsmtFinType2
	17 18	90	RL	72.0	10791	Pave	no alley name mentioned	Reg	Lvi	AllPub		0	TA	TA	Slab	no value given here	None	No given exposure	Values yet to be updated	0	NaN
	9 40	90	RL	65.0	6040	Pave	no alley name mentioned	Reg	Lvi	AllPub	-	0	TA	TA	PConc	no value given here	None	No given exposure	Values yet to be updated	0	NaN
	90 91	20	RL	60.0	7200	Pave	no alley name mentioned	Reg	Lvi	AllPub		0	TA	TA	Slab	no value given here	None	No given exposure	Values yet to be updated	0	NaN
3	rows X	36 columns																			

df['BsetfinType2'].fillna('values not found', implace=True) df.tail(10)

-	Id	MSSubClass	MSZoning	LotFrontage	LotArea	Street	Alley	LotShape	LandContour	Utilities	 MasVnrArea	ExterQual	ExterCond	Foundation	BsmtQual	BsmtCond	BsmtExposure	BsmtFinType1	BsmtFin5F1	BsmtFinType2
	9 90	20	RL	60.0	8070	Pave	no alley here	Reg	Lvl	AIPub	0	TA	TA	PCono	Gd	TA	No	GLQ	588	Unf
	90 91	20	RL	60.0	7200	Pave	no alley here	Reg	Lvl	AIPub	 0	TA.	TA	Slab	no value	No condition	No exposure	values not assigned	0	values not found
	91 92	20	RL	85.0	8500	Pave	no alley here	Reg	Lvl	AIPub	203	TA	TA	CBlock	TA	TA	No	Rec	600	Unf
	92 93	30	RL	80.0	13380	Pave	GrvI	IR1	HLS	AlPub	 0	TA.	Gd	BrkTil	Gd	TA	No	ALQ	713	Unf
	93 94	190	C (all)	60.0	7200	Pave	no alley here	Reg	Lvl	AlPub	0	TA	TA	BrkTil	TA	Fa	Mn	Rec	1045	Unf
	95	60	RL	69.0	9337	Pave	no alley here	IR1	Lvl	AlPub	0	TA	Gd	PConc	Gd	TA	No	GLQ	648	Unf
	95 98	60	RL	1.0	9765	Pave	no alley here	IR2	Lvi	AlPub	68	Ex	Gd	PConc	Gd	Gd	No	ALQ	310	Unf
	96 97	20	RL	78.0	10264	Pave	no alley here	IR1	Lvl	AIPub	 183	Gd	TA	PConc	Gd	TA	Av	ALQ	1162	Unf
	97 98	20	RL	73.0	10921	Pave	no alley here	Reg	HLS	AIPub	48	TA	TA	CBlock	TA	TA	No	Rec	520	Unf
	98 99	30	RL	85.0	10825	Pave	no alley here	Reg	Lvl	AIPub	0	TA.	TA	BrkTil	TA	TA	No	ALQ	108	Unf
1	0 rows	× 38 columns																		
																	+ Code	+ Text		

[] df[df['BsstfinType2'].isnul1()]

Id MSSubClass MSZoning LotFrontage LotArea Street Alley LotShape LandContour Utilities ... MasVMrArea ExterQual ExterCond Foundation BostQual BostCond BostCuposure BostFinType2 BostFinType2 Orons x 30 columns

print(df.isnull().sum())

Id8 MSSubClass 8 MSZoning 8 LotFrontage LotAnea 8 Street Alley 8 LotShape LandContour ø. Utilities | LotConfig 0 LandSlope 0 Neighborhood Condition1 ø. Condition2 0 BldgType 8 HouseStyle OverallQual 0 OverallCond YearBuilt YearRemodAdd RoofStyle 0 RoofMat1 Exterior1st 0 Exterior2nd 0 MasVnrType MasVnrArea 8 ExterQual 8 ExterCond 0 Foundation BsmtQual ø. BsmtCond 8 BsmtExposure 8 BsmtFinType1 BsmtFinSF1 8 BsmtFinType2

dtype: int64

QUESTION_3.py

```
PS C:\Users\rajashekarreddy\Downloads\cognizance> python -I
the words with atleast 6 letters :
Python
almost
analysis
Python
Pandas
Matplotlib
Most frequently used word is : Python
frequency : 4
```