Mine Automation and Data Analytics Lab Assignments

LAB-5

1. What is the difference between MCAR (Missing Completely at Random), MAR (Missing at Random), and MNAR (Missing Not at Random) in the context of missing data analysis?

2. Why is imputation necessary in data analysis, and what happens if imputation is used in machine learning models?

3. How can KNN imputation be implemented in Python for handling missing data, and comparison with other imputation methods? Write a Python code to demonstrate KNN imputation using a suitable example.

4. Write a Python code example to demonstrate mode imputation using the data provided below.

	Category	Subcategory	Value	Score
0	A	X	10.0	NaN
1	B	None	NaN	88.0
2	None	Y	30.0	77.0
3	A	Z	40.0	NaN
4	B	X	50.0	95.0
5	C	None	NaN	85.0
6	None	Y	70.0	NaN
7	C	X	80.0	92.0
8	A	None	90.0	100.0
9	B	Z	NaN	78.0