Data Collection and Preprocessing Phase

Date	15 March 2024
Team ID	LTVIP2024TMID24997
Project Title	Cereal Analysis Based on Ratings by using Machine Learning Techniques
Maximum Marks	6 Marks

Data Exploration and Preprocessing Template

Identifies data sources, assesses quality issues like missing values and duplicates, and implements resolution plans to ensure accurate and reliable analysis.

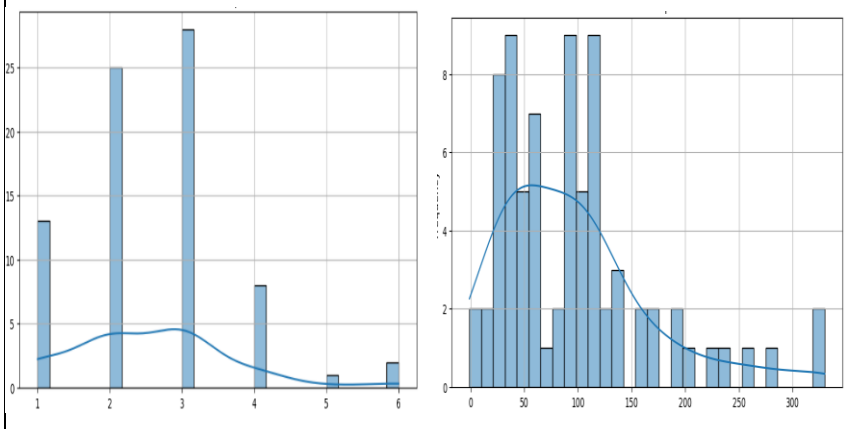
Section

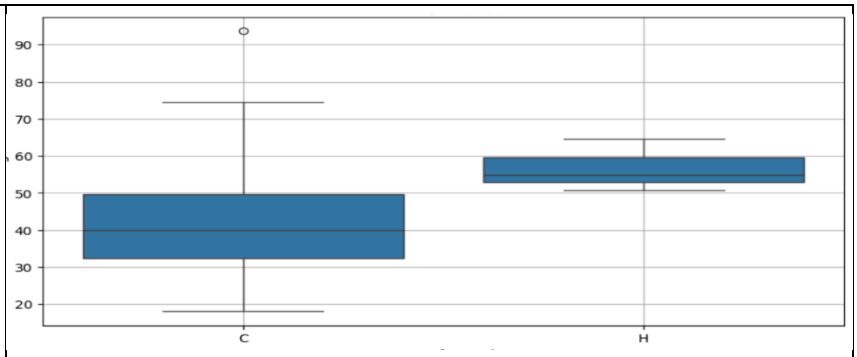
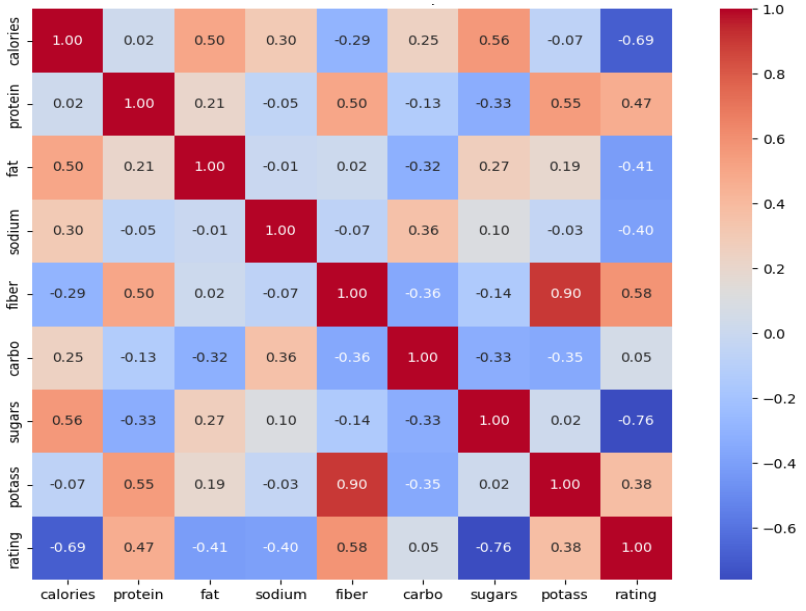
Data Overview

Description

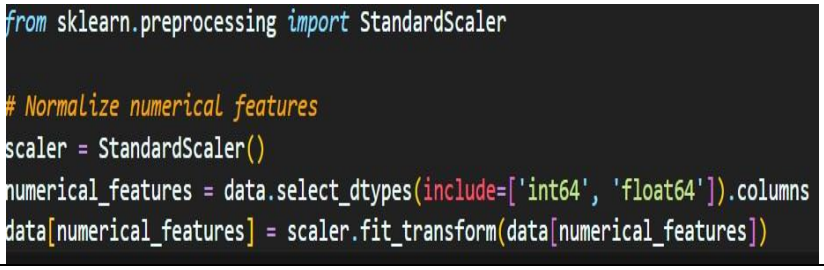
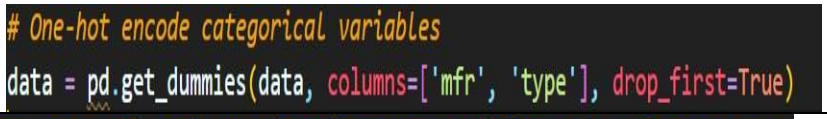
	calories	protein	fat	sodium	fiber	carbo	sugars	potass	vitamins	shelf	weight	cups	rating
count	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000	77.000000
mean	106.883117	2.545455	1.012987	159.675325	2.151948	14.597403	6.922078	96.077922	28.246753	2.207792	1.029610	0.821039	42.665705
std	19.484119	1.094790	1.006473	83.832295	2.383364	4.278956	4.444885	71.286813	22.342523	0.832524	0.150477	0.232716	14.047289
min	50.000000	1.000000	0.000000	0.000000	0.000000	-1.000000	-1.000000	-1.000000	0.000000	1.000000	0.500000	0.250000	18.042851
25%	100.000000	2.000000	0.000000	130.000000	1.000000	12.000000	3.000000	40.000000	25.000000	1.000000	1.000000	0.670000	33.174094
50%	110.000000	3.000000	1.000000	180.000000	2.000000	14.000000	7.000000	90.000000	25.000000	2.000000	1.000000	0.750000	40.400208
75%	110.000000	3.000000	2.000000	210.000000	3.000000	17.000000	11.000000	120.000000	25.000000	3.000000	1.000000	1.000000	50.828392
max	160.000000	6.000000	5.000000	320.000000	14.000000	23.000000	15.000000	330.000000	100.000000	3.000000	1.500000	1.500000	93.704912

Univariate Analysis



Bivariate Analysis	
Multivariate Analysis	
Outliers and Anomalies	—
Data Preprocessing Code Screenshots	
Loading Data	`# Load the dataset into the preferred environment` `data = pd.read_csv('cereal.csv')`

Handling Missing Data	`# Check for missing values`
	`print(data.isnull().sum())`
	
	`# Handle missing values (example: fill with mean)`
	`data.fillna(data.mean(), inplace=True)`

Data Transformation	
Feature Engineering	
Save Processed Data