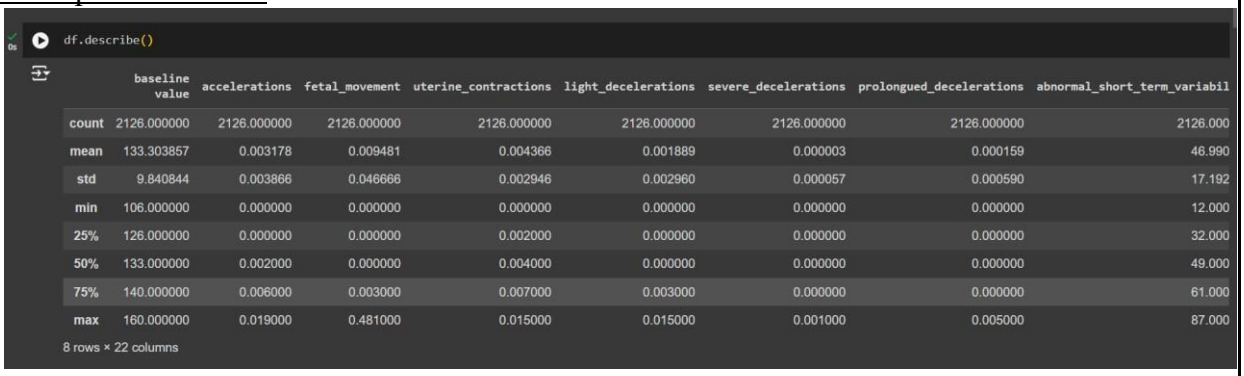
Data Collection and Preprocessing Phase

Date	05-07-2024
Team ID	740070
Project Title	FetalAI: Using Machine Learning To Predict And Monitor Fetal Health
Maximum Marks	6 Marks

Data Exploration and Preprocessing Report

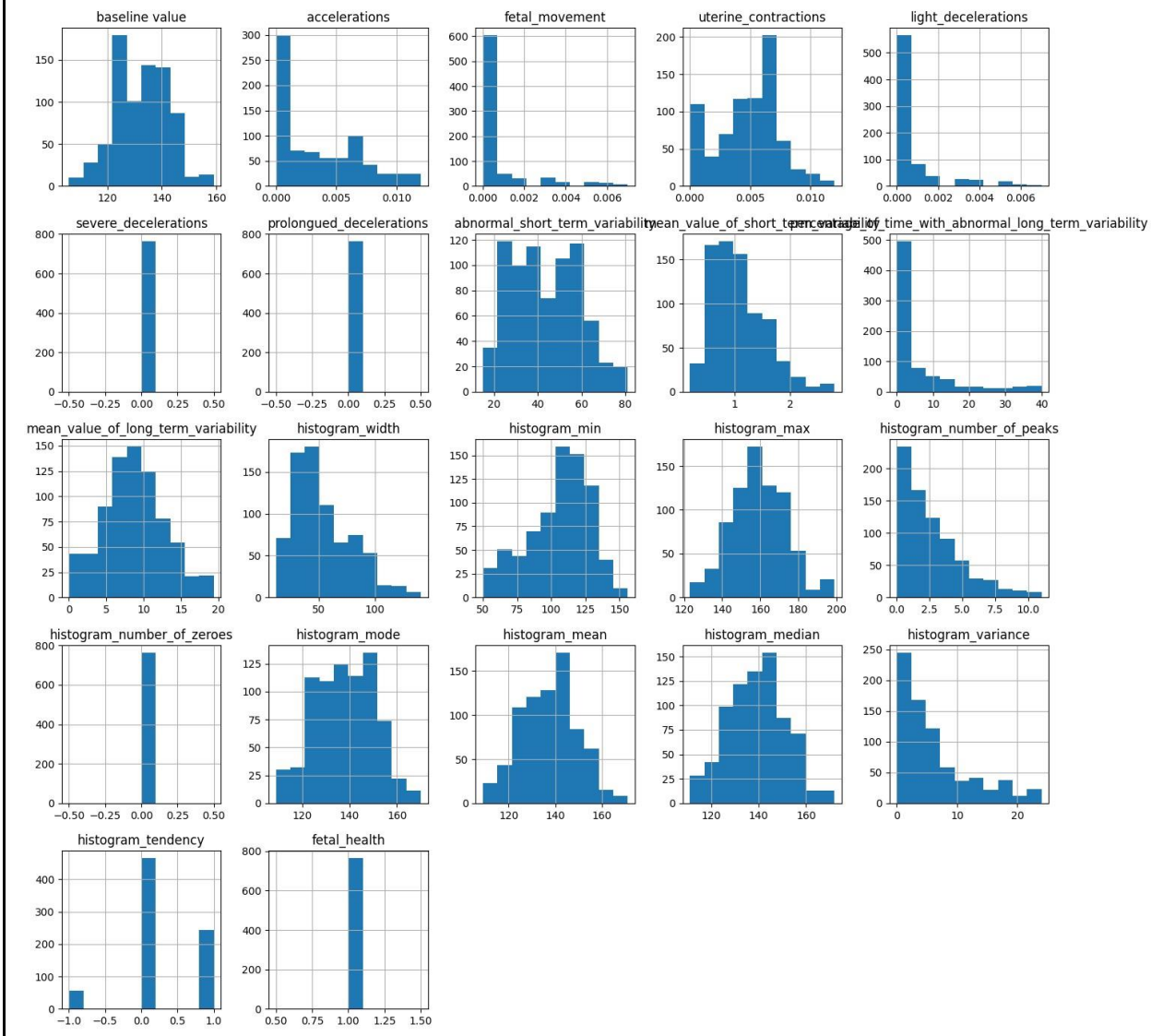
Dataset variables will be statistically analyzed to identify patterns and outliers, with Python employed for preprocessing tasks like normalization and feature engineering. Data cleaning will address missing values and outliers, ensuring quality for subsequent analysis and modeling, and forming a strong foundation for insights and predictions.

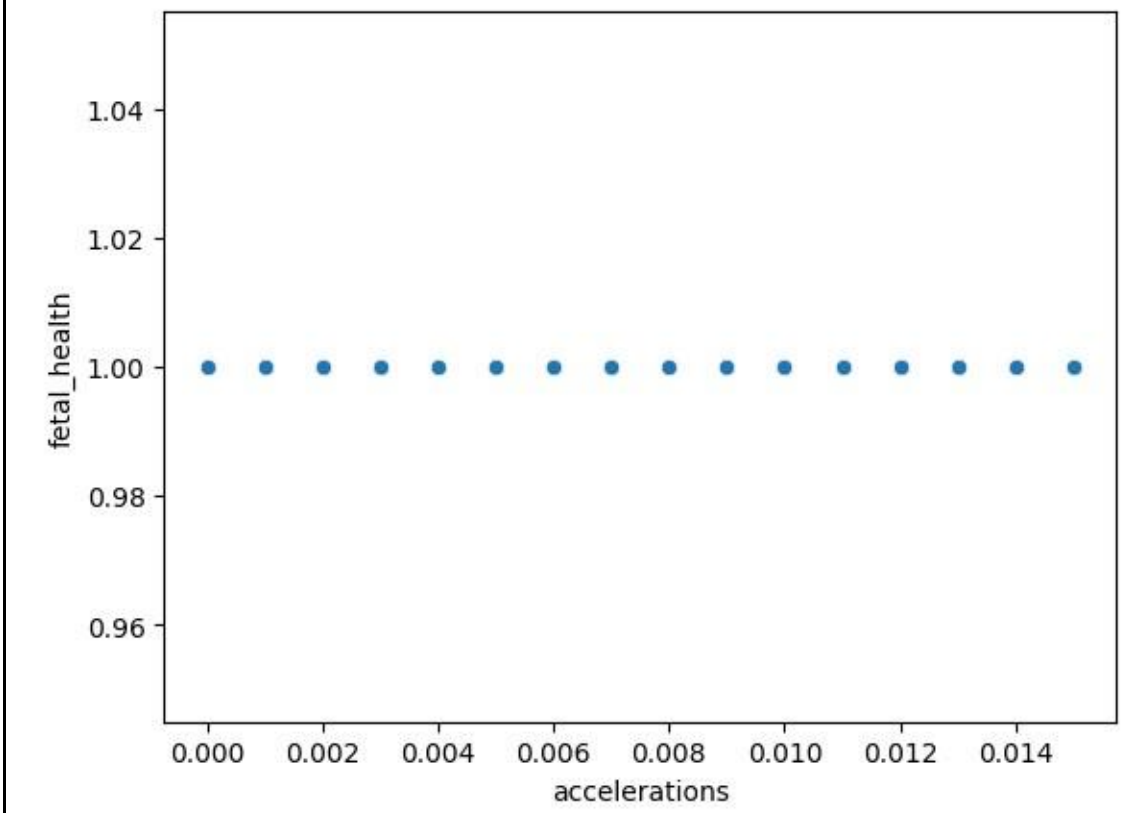
Section	Description

Data Overview	Dimension: 8 rows × 22 columns Descriptive statistics: `df.describe()` 
Univariate Analysis	

	baseline value	accelerations	fetal_movement	uterine_contractions	light_decelerations	severe_decelerations	prolongued_decelerations	abnormal_short_term_variabil
count	2126.000000	2126.000000	2126.000000	2126.000000	2126.000000	2126.000000	2126.000000	2126.000
mean	133.303857	0.003178	0.009481	0.004366	0.001889	0.000003	0.000159	46.990
std	9.840844	0.003866	0.046666	0.002946	0.002960	0.000057	0.000590	17.192
min	106.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.000
25%	126.000000	0.000000	0.000000	0.002000	0.000000	0.000000	0.000000	32.000
50%	133.000000	0.002000	0.000000	0.004000	0.000000	0.000000	0.000000	49.000
75%	140.000000	0.006000	0.003000	0.007000	0.003000	0.000000	0.000000	61.000
max	160.000000	0.019000	0.481000	0.015000	0.015000	0.001000	0.005000	87.000

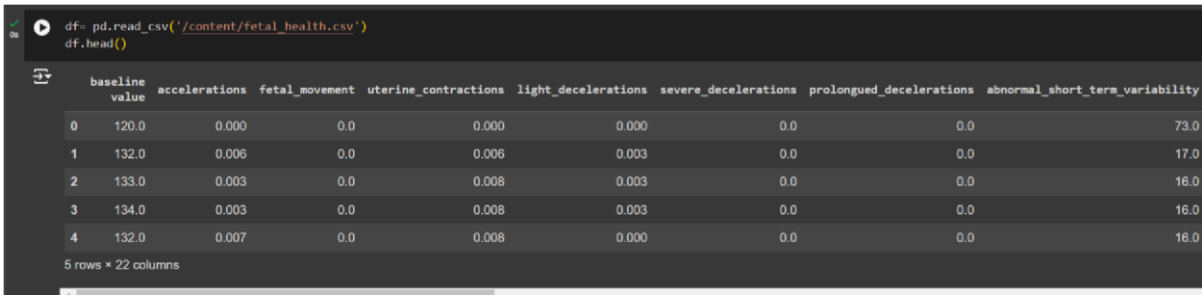
8 rows × 22 columns


baseline value
accelerations
fetal_movement
uterine_contractions
light_decelerations
severe_decelerations
prolongued_decelerations
abnormal_short_term_variability
mean_value_of_short_term_variability
percentage_of_time_with_abnormal_long_term_variability
mean_value_of_long_term_variability
histogram_width
histogram_min
histogram_max
histogram_number_of_peaks
histogram_number_of_zeroes
histogram_mode
histogram_mean
histogram_median
histogram_variance
histogram_tendency
fetal_health

Bivariate Analysis	

Multivariate Analysis	
Outliers and Anomalies	-

Data Preprocessing Code Screenshots

Loading Data	 baseline value accelerations fetal_movement uterine_contractions light_decelerations severe_decelerations prolongued_decelerations abnormal_short_term_variability 0 120.0 0.000 0.0 0.000 0.000 0.0 0.0 73.0 1 132.0 0.006 0.0 0.006 0.003 0.0 0.0 17.0 2 133.0 0.003 0.0 0.008 0.003 0.0 0.0 16.0 3 134.0 0.003 0.0 0.008 0.003 0.0 0.0 16.0 4 132.0 0.007 0.0 0.008 0.000 0.0 0.0 16.0 5 rows × 22 columns
Handling Missing Data	-
Data Transformation	-
Feature Engineering	Attached the codes in final submission.
Save Processed Data	-