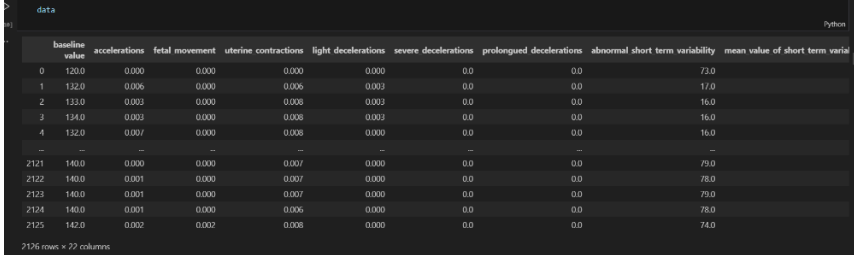
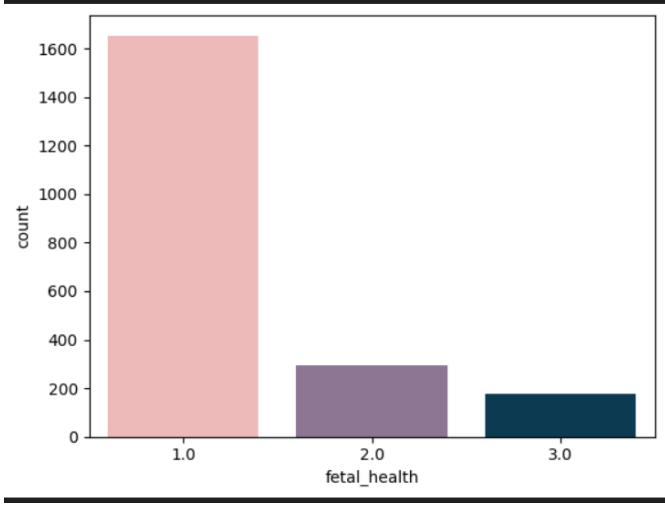


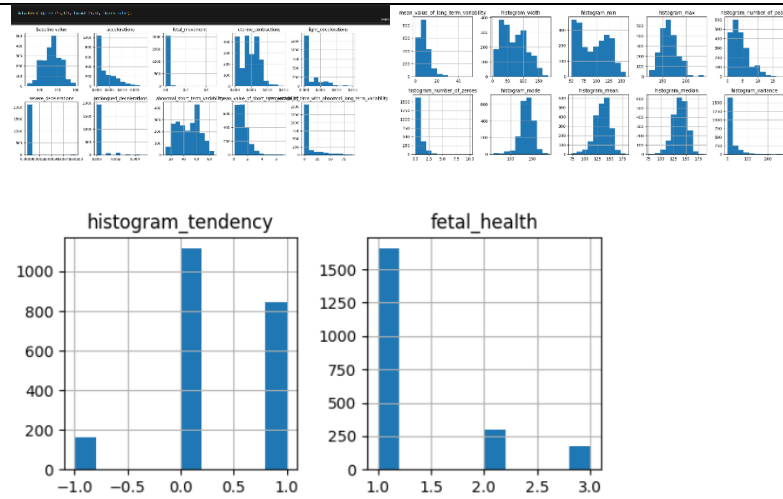
Data Collection and Preprocessing Phase

Date	27 th July 2024
Team ID	739919
Project Title	FETAL AI: USING MACHINE LEARNING TO PREDICT AND MONITOR FETAL HEALTH
Maximum Marks	6 Marks

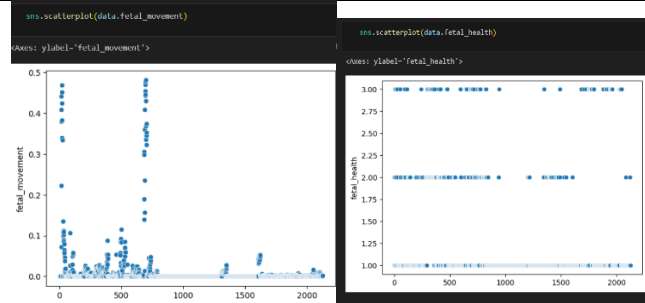
Data Exploration and Preprocessing Template

In fetal AI, data exploration involves analyzing ultrasound images and maternal health records to identify key patterns and potential anomalies. Data preprocessing includes cleaning the dataset by handling missing values and normalizing features to ensure consistency and accuracy. Feature engineering is performed to extract relevant information, such as gestational age and fetal measurements, enhancing the model's predictive capabilities.

Section	Description
Data Overview	
Univariate Analysis	<div> <pre>data</pre>  </div> <div>  </div>



Bivariate Analysis



```
In [129]: #correlation matrix
corrmate = data.corr()
plt.figure(figsize=(20,20))

cmap = sns.light_palette("seagreen", as_cmap=True)
sns.heatmap(corrmate,annot=True, cmap=cmap, center=0)
```



Data Preprocessing Code Screenshots

Loading Data

```
data=pd.read_csv("/content/fetal_health.csv")
```

Handling
Missing Data

```
data.isnull().sum()
```

Data
Transformation

```
#scaling Data
X = data.drop(columns=['fetal_health'])
y = data["fetal_health"]
from sklearn.preprocessing import MinMaxScaler
scale = MinMaxScaler()
X_scaled = pd.DataFrame(scale.fit_transform(X), columns=X.columns)
X_scaled.head()
```

	baseline value	accelerations	fetal_movement	uterine_contractions	light_decelerations	severe_decelerations	prolongued_decelerations	abnormal_short_term_variability	mean_value_of_short_term_variability
0	0.259259	0.000000	0.0	0.000000	0.0	0.0	0.0	0.813333	0.0441
1	0.481481	0.315789	0.0	0.400000	0.2	0.0	0.0	0.066667	0.2794
2	0.500000	0.157895	0.0	0.533333	0.2	0.0	0.0	0.053333	0.2794
3	0.518519	0.157895	0.0	0.533333	0.2	0.0	0.0	0.053333	0.3235
4	0.481481	0.368421	0.0	0.533333	0.0	0.0	0.0	0.053333	0.3235

Save
Processed
Data

```
# saving the model
import pickle
pickle.dump(RF_model, open('fetal_health1.pkl', 'wb'))
```