

Data Collection and Preprocessing Phase

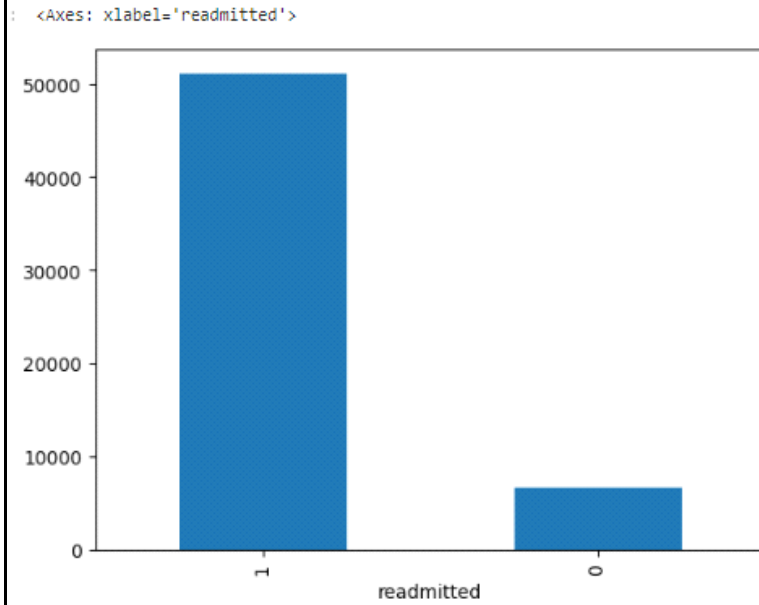
Date	20 JUNE 2024
Team ID	team-740066
Project Title	HOSPITAL READMISSION PREDICTOR
Maximum Marks	6 Marks

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.

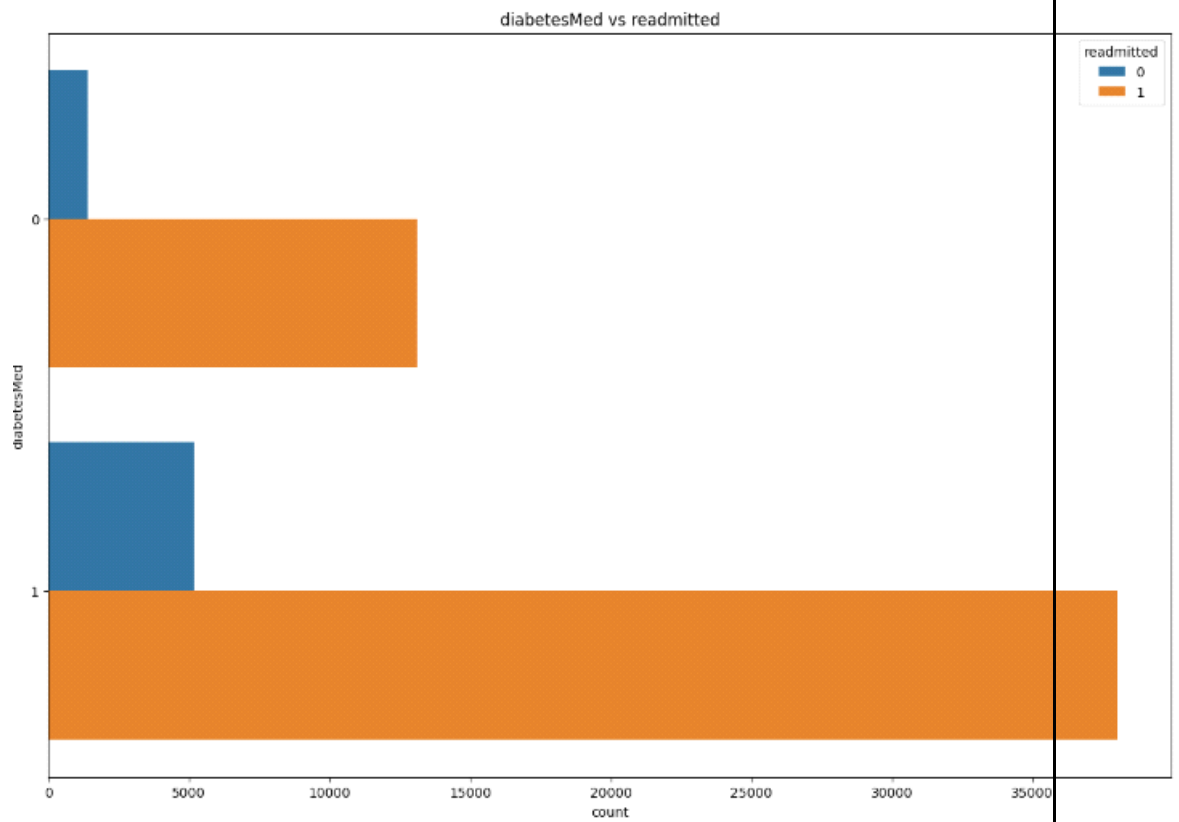
Section	Description
Data Overview	<u>Dimension:</u> 5 rows × 29columns <u>Descriptive</u> <u>statistics:</u>
	race gender age admission_type_id discharge_disposition_id admission_source_id time_in_hospital num_lab_procedure
	0 Caucasian Female [0-30) Others Others Referral -1.632460 -0.10847
	1 Caucasian Female [0-30) Emergency Discharged to home Emergency Room -0.271144 0.80852
	2 AfricanAmerican Female [0-30) Emergency Discharged to home Emergency Room -0.825587 -1.62961
	3 Caucasian Male [30-40) Emergency Discharged to home Emergency Room -0.825587 0.04415
	4 Caucasian Male [40-50) Emergency Discharged to home Emergency Room -1.632460 0.40065
	5 rows × 29 columns

## Univariate Analysis

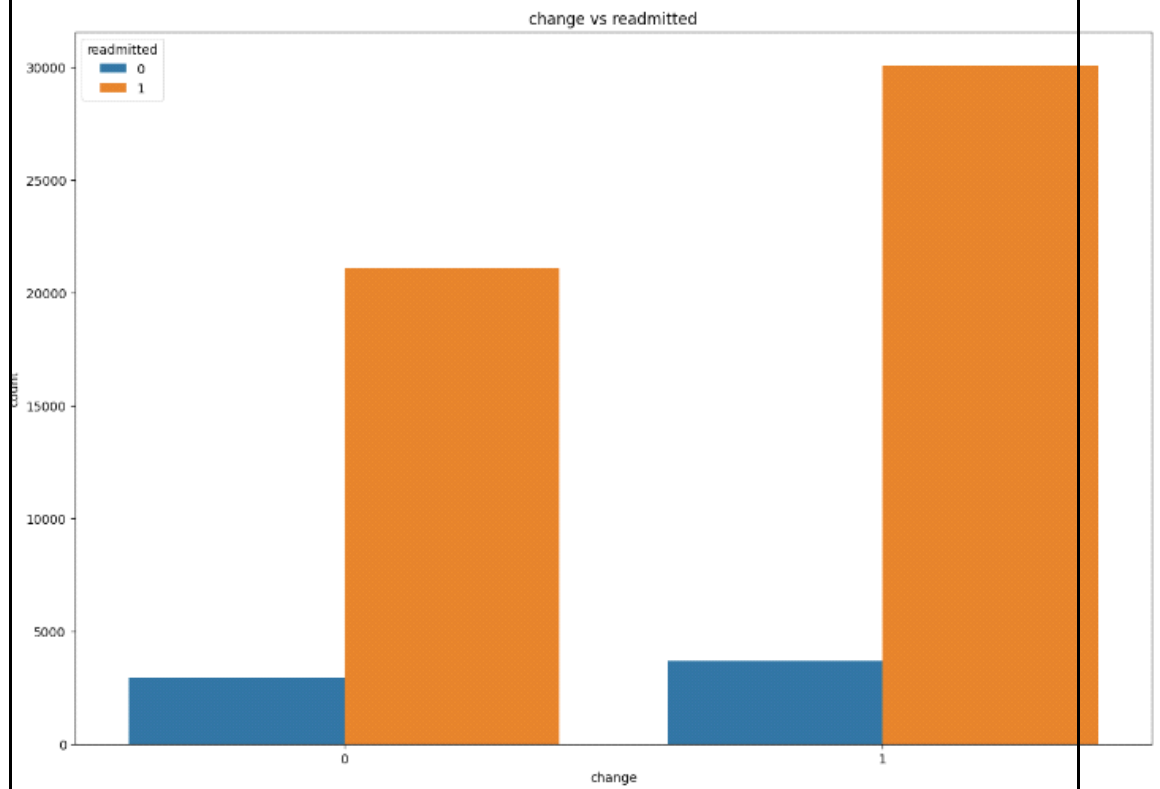


## Bivariate Analysis

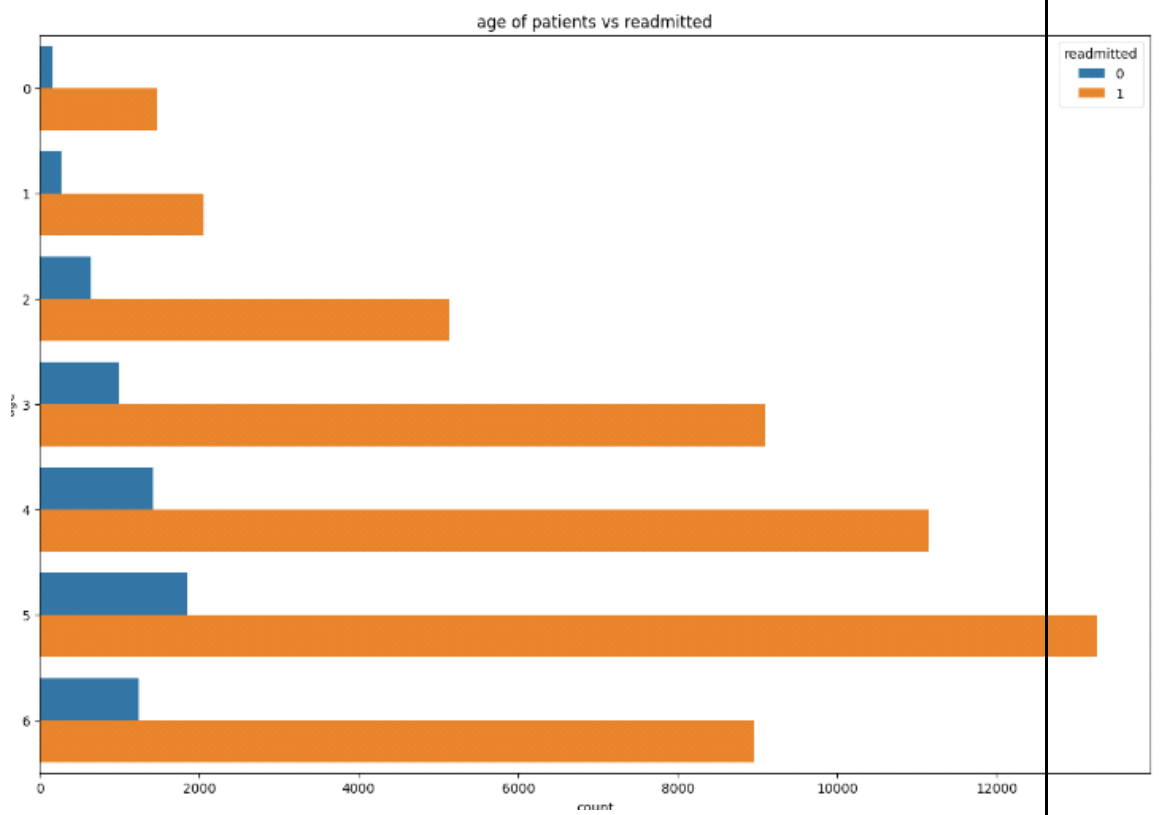
Text(0.5, 1.0, 'diabetesMed vs readmitted')



Text(0.5, 1.0, 'change vs readmitted')



Text(0.5, 1.0, 'age of patients vs readmitted')



Multi variate Analysis	-
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Outliers and Anomalies	-
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**Data Preprocessing Code Screenshots**

Loading Data	race	gender	age	admission_type_id	discharge_disposition_id	admission_source_id	time_in_hospital	num_lab_proced	
	0	Caucasian	Female	[0-30)	Others	Others	Referral	-1.632460	-0.1084
	1	Caucasian	Female	[0-30)	Emergency	Discharged to home	Emergency Room	-0.271144	0.8081
	2	AfricanAmerican	Female	[0-30)	Emergency	Discharged to home	Emergency Room	-0.825587	-1.6291
	3	Caucasian	Male	[30-40)	Emergency	Discharged to home	Emergency Room	-0.825587	0.0441
	4	Caucasian	Male	[40-50)	Emergency	Discharged to home	Emergency Room	-1.632460	0.4001

Handling Missing Data	<pre>data['num_medications'].fillna(data['num_medications'].mean(),inplace=True)</pre>
	<pre>data['number_outpatient'].fillna(data['number_outpatient'].mean(),inplace=True)</pre>
	<pre>data['number_emergency'].fillna(data['number_emergency'].mean(),inplace=True)</pre>
	<pre>data['number_diagnoses'].fillna(data['number_diagnoses'].mean(),inplace=True)</pre>
	<pre>data['age_derived'].fillna(data['age_derived'].mean(),inplace=True)</pre>
	<pre>data['count_Steady'].fillna(data['count_Steady'].mean(),inplace=True)</pre>
	<pre>data['count_Down'].fillna(data['count_Down'].mean(),inplace=True)</pre>
	<pre>data['count_Up'].fillna(data['count_Up'].mean(),inplace=True)</pre>
	<pre>data['number_inpatient'].fillna(data['number_inpatient'].mean(),inplace=True)</pre>

Data Transformation	<pre> le=LabelEncoder()  data['gender']=le.fit_transform(data['gender'])  data['age']=le.fit_transform(data['age'])  data['admission_type_id']=le.fit_transform(data['admission_type_id'])  data['discharge_disposition_id']=le.fit_transform(data['discharge_disposition_id'])  data['admission_source_id']=le.fit_transform(data['admission_source_id'])  data['diag_1']=le.fit_transform(data['diag_1'])  data['diag_2']=le.fit_transform(data['diag_2'])  data['diag_3']=le.fit_transform(data['diag_3'])  data['metformin']=le.fit_transform(data['metformin'])  data['repaglinide']=le.fit_transform(data['repaglinide'])  data['glipizide']=le.fit_transform(data['glipizide'])  data['insulin']=le.fit_transform(data['insulin'])  data['change']=le.fit_transform(data['change'])  data['diabetesMed']=le.fit_transform(data['diabetesMed'])  data['readmitted']=le.fit_transform(data['readmitted']) </pre>
Feature Engineering	Attached the codes in final submission