Dataset:

To train algorithms using Transit passenger record dataset but this exact dataset not available on internet so we are using passenger dataset and in below screen we are showing dataset details

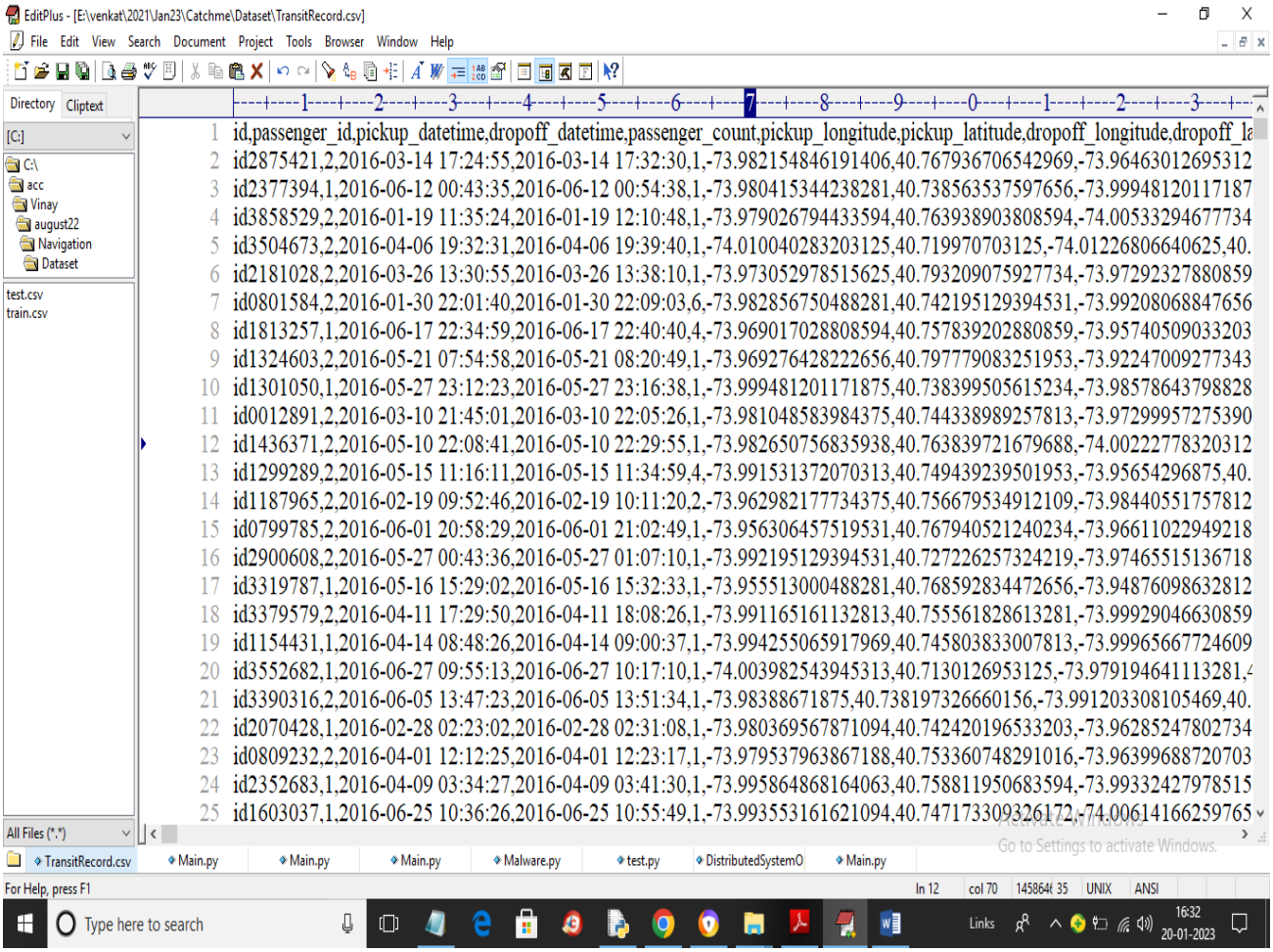

Fig.8.1: Large-Scale transit dataset for detecting pickpocket suspects.

In above dataset screen first row contains dataset column names and remaining rows contains dataset values and this values has passenger traveling latitude and longitude with trip duration.

To run project double click on ‘run.bat’ file to get below screen

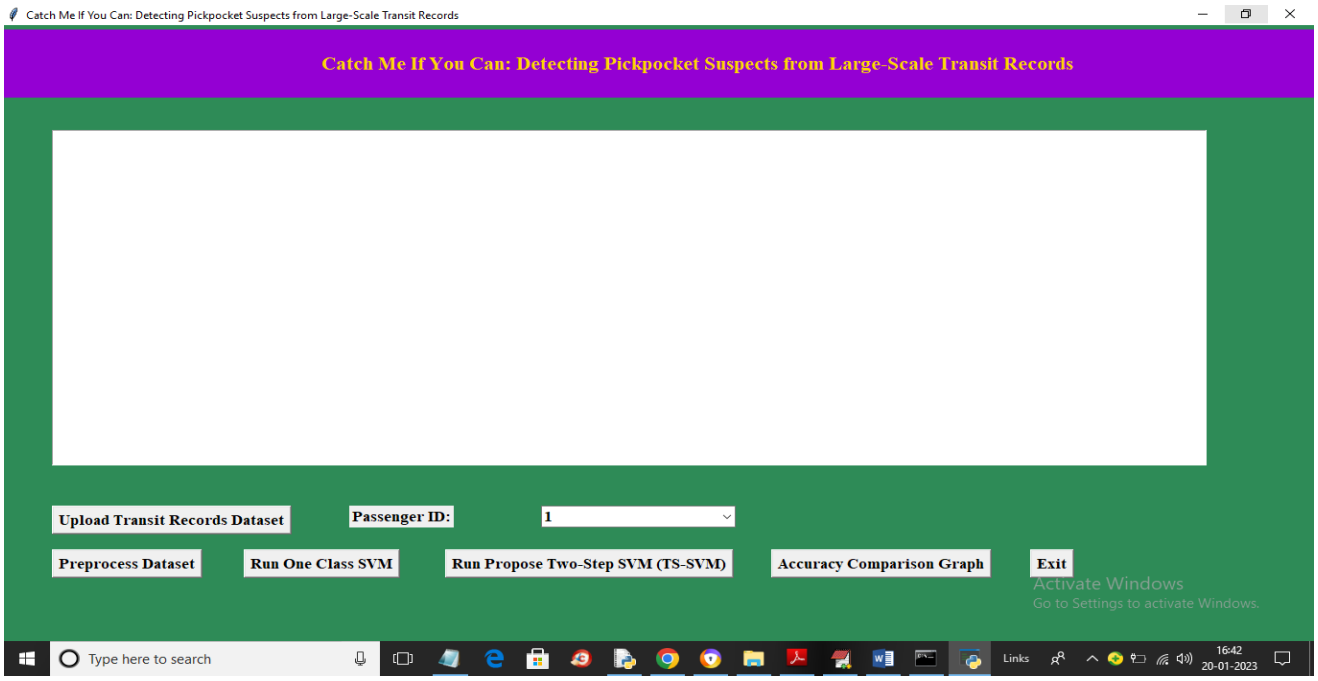

Fig.8.2: Application interface of detecting pickpocket suspects.

In above screen click on ‘Upload Transit Records Dataset’ button to upload dataset and get below screen

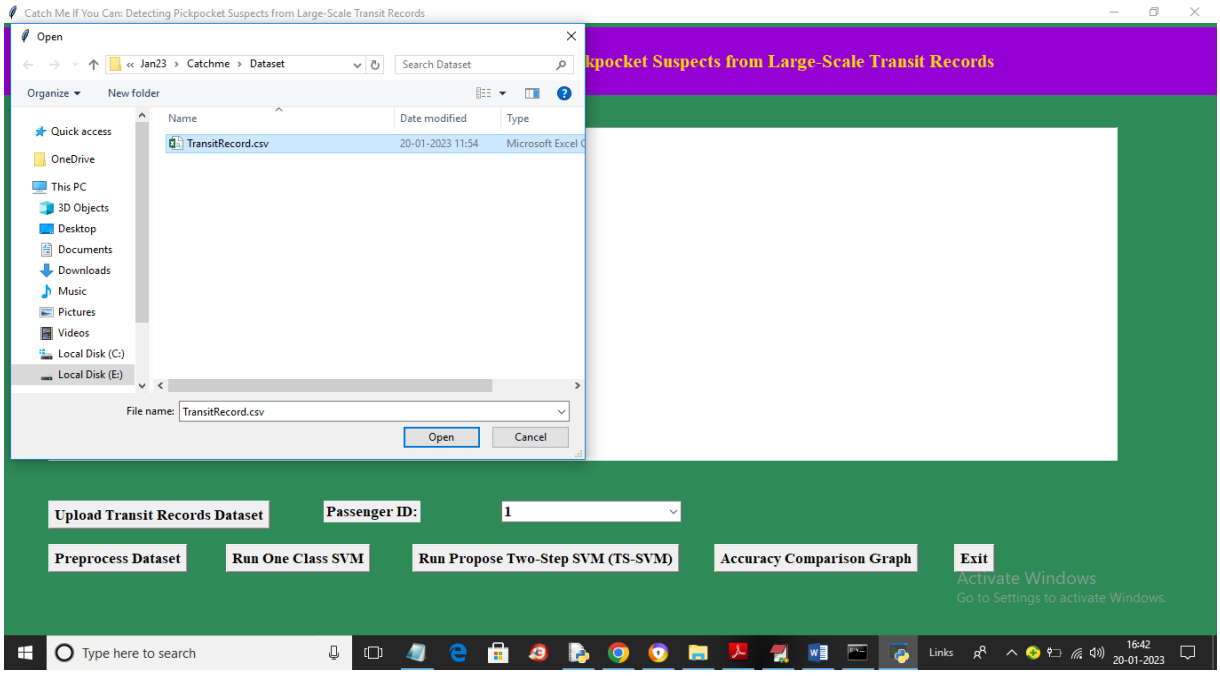

Fig.8.3: Uploading transit records dataset.

In above screen selecting and uploading dataset file and then click on ‘Open’ button to load dataset and

get below output

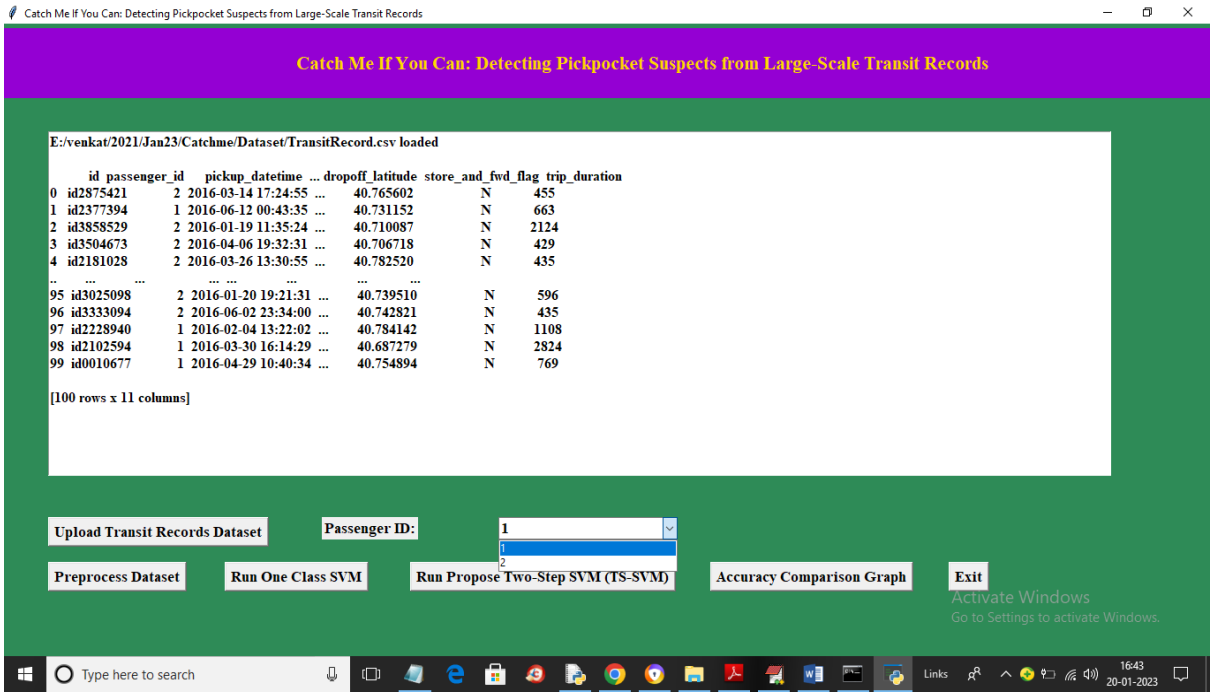

Fig.8.4: Selecting the passenger ID.

In above screen dataset loaded and now from drop down box select any passenger ID and then click on 'Preprocess Dataset' button to read all records from selected passenger and then normalize values to get below output

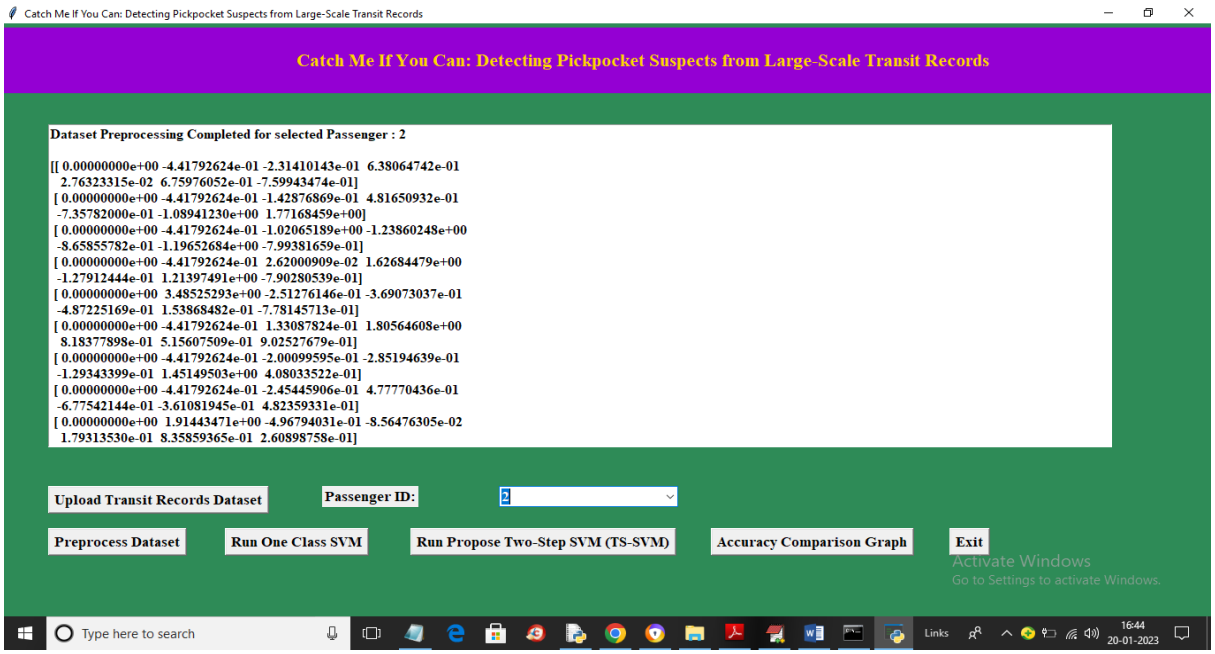

Fig.8.5: Preprocessing the dataset.

In above screen I selected passenger ID as 2 and then we got all normalize values for passenger 2 and now click on ‘Run One Class SVM’ button to get below output

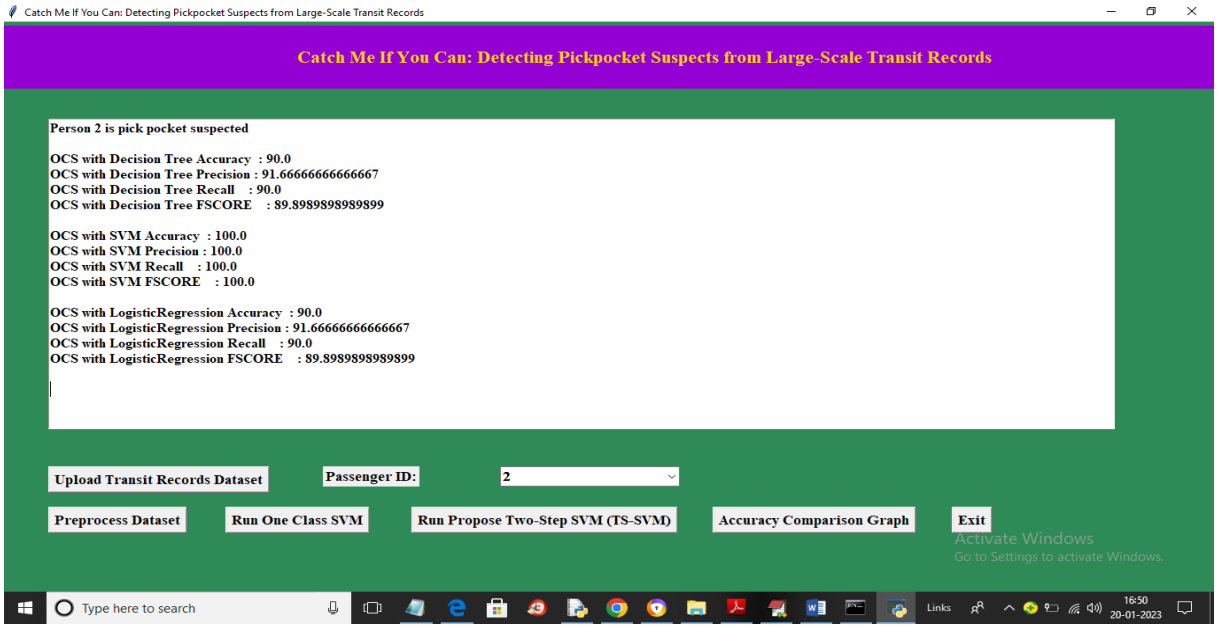

Fig.8.6: Running One Class SVM.

In above screen in first line we can see passenger 2 is pick pocket suspected and we can see OCS accuracy of decision tree as 90% and other metrics using Decision Tree, SVM and Logistic Regression and now click on ‘Run Propose Two-Step SVM (TS-SVM)’ button to calculate passenger behaviour and get below accuracy values

Fig.8.7: Running Two-Step SVM.

In above screen for TS-SVM accuracy of decision tree is 100% and we can see metric for all other algorithm and in below browser screen we can see passenger travel details

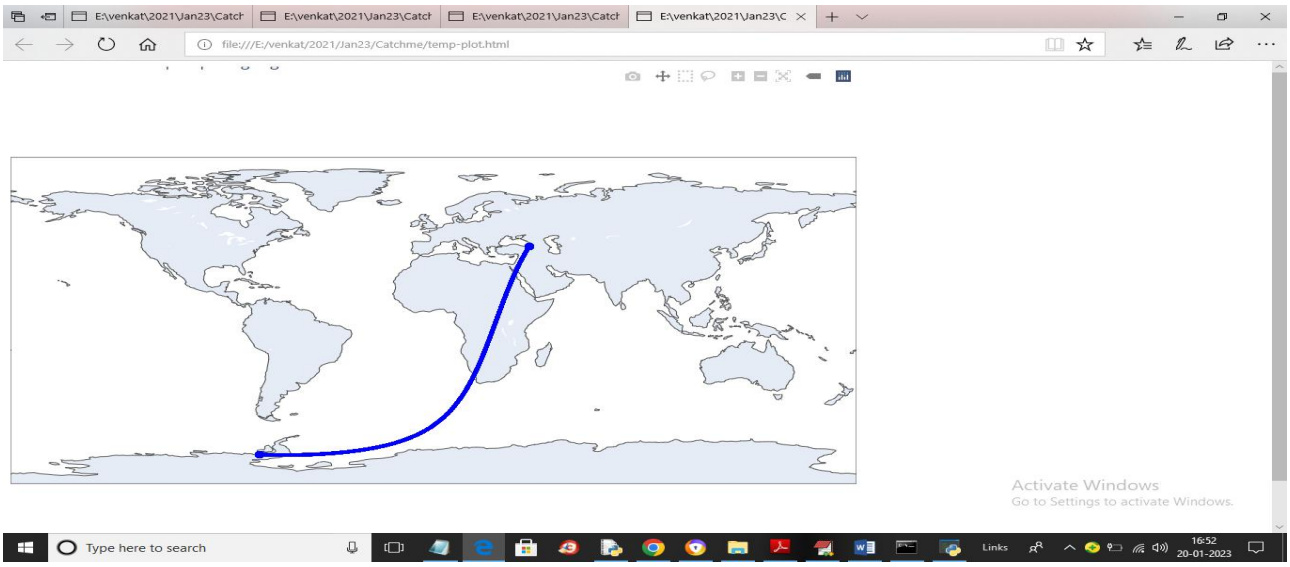

Fig.8.8: Graph of a pickpocketing suspect they travel to same route again and again.

In above graph passenger travel to same route again and again so we can suspect him as Pick Pocket and now click on 'Accuracy Comparison Graph' button to get below output

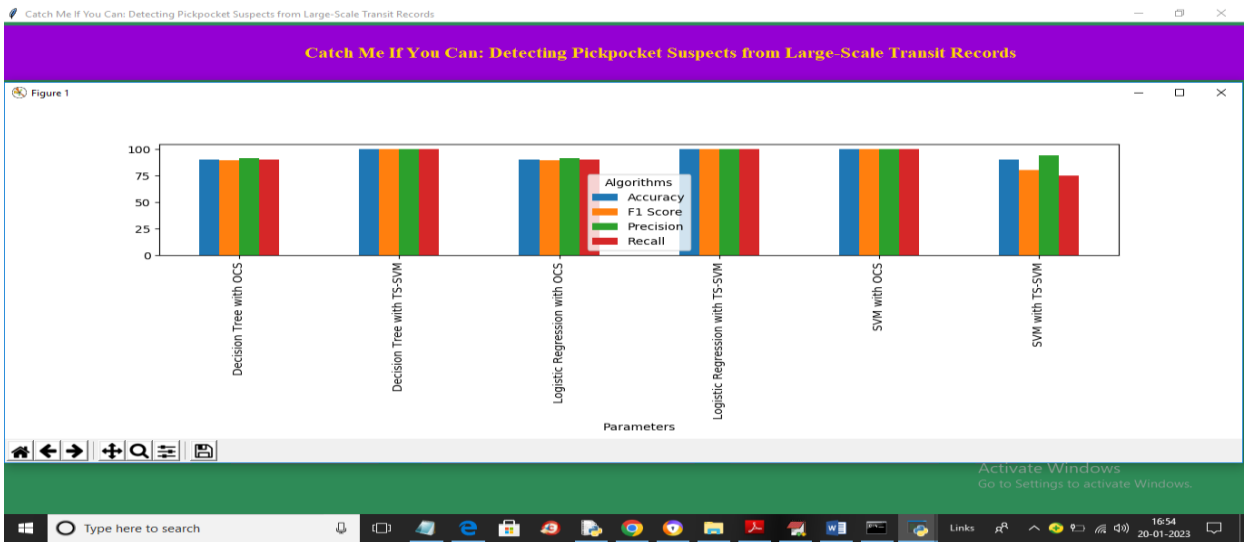

Fig.8.9:Accuracy comparison Graph.

In above graph x-axis represents algorithm names and y-axis represents accuracy and other metric in different colour bars and we can see propose TS-SVM got high performance or accuracy compare to existing OCS