

ABDA Project Report

By,

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Results Screenshots

1. Streaming the Data

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Activities Terminal Aug 27 00:10
 pes1pg21cs016@pes1pg21cs016-virtual-machine: ~/CRIME/crime
 pes1pg21cs016@pes1pg21cs016-virtual-machine: ~/CRIME/crime$ python3 stream.py -f train.csv -b 10000
Namespace(file='train.csv', batch_size=10000, endless=False)
Waiting for connection on port 6180...
Connected to ('127.0.0.1', 57106)
100% |██████████| 87/87 [01:28<00:00,  1.02s/it]
pes1pg21cs016@pes1pg21cs016-virtual-machine: ~/CRIME/crime$
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Activities	Terminal	Aug 27 00:06		
pes1pg21cs016@pes1pg21cs016-virtual-machine: ~/CRIME/crime				
22/08/27 00:05:35 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.				
22/08/27 00:05:35 WARN BlockManager: Block input-0-1661538935000 replicated to only 0 peer(s) instead of 1 peers				
22/08/27 00:05:36 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.				
22/08/27 00:05:36 WARN BlockManager: Block input-0-1661538936000 replicated to only 0 peer(s) instead of 1 peers				
Date	Category	Description [dayofweek]	District	
			Resolution	
			address	
			X	
			Y	
2014-12-10 14:00:00	LARCENY/THEFT GRAND THEFT FROM ...	[Wednesday]	RICHMOND	NONE 0 Block of COMMON ... -122_455855838025 37_785018259899905
2014-12-10 13:50:00	SUSPICIOUS OCC SUSPICIOUS OCCURR. ...	[Wednesday]	TARAVAL	NONE 1700 Block of 34T ... -122_49254132385599 37_7545031386825
2014-12-10 13:45:00	LARCENY/THEFT PETTY THEFT FROM ...	[Wednesday]	RICHMOND	NONE 500 Block of JOHN... -122_46620466789301 37_7725465391593
2014-12-10 13:43:00	NON-CRIMINAL AIDED CASE MENTAL...	[Wednesday]	SOUTHERN	NONE 0 Block of MARKET ST -122_39561593964899 37_7939460487081
2014-12-10 13:40:00	ASSAULT BATTERY [Wednesday]	BAYVIEW	NONE 400 Block of MANS... -122_40660797706608 37_72041061847521	
2014-12-10 13:32:00	NON-CRIMINAL LOST PROPERTY [Wednesday]	BAYVIEW	NONE 400 Block of MANS... -122_40660797706608 37_72041061847521	
2014-12-10 13:30:00	LARCENY/THEFT PETTY THEFT FROM ...	[Wednesday]	INGLESIDE	NONE ADDISON ST / DIAM... -122_435839655098 37_740153916207
2014-12-10 13:15:00	LARCENY/THEFT GRAND THEFT FROM ...	[Wednesday]	PARK	NONE 0 Block of CASTRO ST -122_43567745121 37_7681694346175
2014-12-10 13:08:00	LARCENY/THEFT PETTY THEFT FROM ...	[Wednesday]	TENDERLOIN	NONE 0 Block of MCAULIFFE ... -122_416261330684 37_7853750463761
2014-12-10 13:06:00	ROBBERY THEFT ON THE ST. ...	[Wednesday]	TENDERLOIN	NONE 300 Block of JEFF... -122_41827069671899 37_8078519838014
2014-12-10 13:00:00	NON-CRIMINAL FOUND PROPERTY [Wednesday]	CENTRAL	NONE MISSION ST / 4TH ST -122_404278179486 37_7844788357449	
2014-12-10 13:00:00	LARCENY/THEFT GRAND THEFT FROM ...	[Wednesday]	SOUTHERN	NONE 900 Block of EDDY ST -122_432299251581 37_7825025059981
2014-12-10 13:00:00	LARCENY/THEFT GRAND THEFT FROM ...	[Wednesday]	NORTHERN	NONE ANZA ST / 34TH AV -122_462003861436 37_779183254247
2014-12-10 13:00:00	VEHICLE THEFT STOLEN AUTOMOBILE	[Wednesday]	RICHMOND	NONE 1900 Block of IRV... -122_47873515979401 37_7634357910996
2014-12-10 13:00:00	OTHER OFFENSES FRAUDULENT GAME O...	[Wednesday]	TARAVAL	NONE 900 Block of EDDY ST -122_432299251581 37_7825205059981
2014-12-10 13:00:00	LARCENY/THEFT EMBEZZLEMENT FROM ...	[Wednesday]	NORTHERN	NONE 300 Block of 9TH AV -122_4674878929662 37_78128574319725
2014-12-10 12:50:00	SUSPICIOUS OCC SUSPICIOUS OCCURR. ...	[Wednesday]	RICHMOND	NONE 2100 Block of MAR... -122_42978898698799 37_7666524174762
2014-12-10 12:45:00	LARCENY/THEFT PETTY THEFT FROM ...	[Wednesday]	MISSION	ARREST BOOKED 300 Block of LAGU... -122_4586808978204 37_784155649233204
2014-12-10 12:40:00	ASSAULT BATTERY [Wednesday]	PARK	NONE Block of FREMON... -122_397526111294 37_791049867993204	
2014-12-10 12:35:00	SUSPICIOUS OCC SUSPICIOUS OCCURR. ...	[Wednesday]	SOUTHERN	ARREST BOOKED 100 Block of OFAR... -122_467244600342 37_786564767685
2014-12-10 12:35:00	LARCENY/THEFT PETTY THEFT OF PR...	[Wednesday]	TENDERLOIN	ARREST BOOKED 1700 Block of 3RD ST -122_40202770694799 37_7800055522706
2014-12-10 12:30:00	DRUG/MARCOOLIC USE IN MIND ...	[Wednesday]	BAYVIEW	ARREST BOOKED 1000 Block of QUE... -122_39232008084 37_7939177750
2014-12-10 12:30:00	WEAPON LAWS FIREARM ARMED WHI...	[Wednesday]	BAYVIEW	ARREST BOOKED 1700 Block of QUE... -122_39232560984 37_79317775522706
2014-12-10 12:30:00	WEAPON LAWS FIREARM LOADED IN...	[Wednesday]	BAYVIEW	NONE 2ND ST / MISSION ST -122_398902145799 37_7800065324391
2014-12-10 12:30:00	VANDALISM WILFULISTIC MISCHIE...	[Wednesday]	SOUTHERN	NONE EDDY ST / HYDE ST -122_41585065788 37_783150656145294
2014-12-10 12:30:00	LARCENY/THEFT GRAND THEFT FROM ...	[Wednesday]	TENDERLOIN	NONE 300 Block of PINE ST -122_46192635983601 37_792117591304795
2014-12-10 12:25:00	LARCENY/THEFT THEFT FROM MERCIA...	[Wednesday]	CENTRAL	ARREST CITED MISSION ST / 3RD ST -122_46202770694799 37_7862483456629
2014-12-10 12:22:00	OTHER OFFENSES DRIVERS LICENSE S...	[Wednesday]	SOUTHERN	NONE 1700 Block of NOR... -122_482379669797 37_7540351278335
2014-12-10 12:21:00	ASSAULT THREATS AGAINST LIFE	[Wednesday]	TARAVAL	ARREST CITED 0 Block of MINT ST -122_46782984414601 37_78264025677843
2014-12-10 12:19:00	NON-CRIMINAL CIVIL SIDEWALKS C...	[Wednesday]	SOUTHERN	NONE 0 Block of COSTA ST -122_406353930659 37_74461731191271
2014-12-10 12:15:00	LARCENY/THEFT PETTY THEFT OF PR...	[Wednesday]	INGLESIDE	NONE 1600 Block of MIS... -122_41910574075199 37_7719857711361
2014-12-10 12:14:00	NON-CRIMINAL AIDED CASE MENTAL...	[Wednesday]	SOUTHERN	NONE 1700 Block of VAN... -122_422777244531 37_7917199091489
2014-12-10 12:10:00	LARCENY/THEFT PETTY THEFT OF PR...	[Wednesday]	NORTHERN	NONE 2300 Block of 20T... -122_47675778483 37_749321871809
2014-12-10 12:03:00	NON-CRIMINAL REPORT CAUS...	[Wednesday]	TARAVAL	NONE 6TH ST / MISSION ST -122_40873566047789 37_780956722059
2014-12-10 12:00:00	NON-CRIMINAL FOUND PROPERTY	[Wednesday]	SOUTHERN	NONE 800 Block of BRYA... -122_480407771789 37_780956722059
2014-12-10 12:00:00	MISSING PERSON MISSING ADULT	[Wednesday]	SOUTHERN	NONE 700 Block of MISS... -122_47623716905781 37_78482039936101
2014-12-10 12:00:00	EMBEZZLEMENT EMBEZZLEMENT GRAN...	[Wednesday]	MISSION	NONE ASTRO ST / 18TH ST -122_4350032632094 37_768879251104
2014-12-10 12:00:00	OTHER OFFENSES LOST/STOLEN IT...	[Wednesday]	MISSION	

2. Preprocessing the data

a Checking for null values

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+---+-----+-----+-----+-----+-----+-----+
|Date|Category|Description|dayOfweek|District|Resolution|address| X| Y|
+---+-----+-----+-----+-----+-----+-----+
| 0| 0| 0| 0| 0| 0| 0| 0| 0| 0| 0| 0|
+---+-----+-----+-----+-----+-----+-----+
22/08/27 00:26:18 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.
22/08/27 00:26:18 WARN BlockManager: Block input-0-1661540178400 replicated to only 0 peer(s) instead of 1 peers
22/08/27 00:26:19 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.
22/08/27 00:26:19 WARN BlockManager: Block input-0-1661540179400 replicated to only 0 peer(s) instead of 1 peers
22/08/27 00:26:20 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.
22/08/27 00:26:20 WARN BlockManager: Block input-0-1661540180400 replicated to only 0 peer(s) instead of 1 peers
22/08/27 00:26:21 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.
22/08/27 00:26:21 WARN BlockManager: Block input-0-1661540181400 replicated to only 0 peer(s) instead of 1 peers
22/08/27 00:26:22 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.
22/08/27 00:26:22 WARN BlockManager: Block input-0-1661540182400 replicated to only 0 peer(s) instead of 1 peers
22/08/27 00:26:23 WARN RandomBlockReplicationPolicy: Expecting 1 replicas with only 0 peer/s.
22/08/27 00:26:23 WARN BlockManager: Block input-0-1661540183400 replicated to only 0 peer(s) instead of 1 peers
+---+-----+-----+-----+-----+-----+-----+
|Date|Category|Description|dayOfweek|District|Resolution|address| X| Y|
+---+-----+-----+-----+-----+-----+-----+
| 0| 0| 0| 0| 0| 0| 0| 0| 0| 0| 0| 0|
+---+-----+-----+-----+-----+-----+-----+
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Advanced Big Data Project Report - Ganesh R and Manoj KN

b. Transforming non numerical values to numerical

Activities Terminal Aug 27 00:44

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pes1pg21cs016@pes1pg21cs016-virtual-machine: ~/CRIME/crime
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Date category	Description dayofweek district	Resolution	address	X	Y
2015-05-13 23:53:00	7.0 WARRANT ARREST	0.0 1.0	ARREST BOOKED OAK ST / LAGUNA ST -122.425891675136	37.7745985956747	
2015-05-13 23:53:00	2.0 TRAFFIC VIOLATION...	0.0 1.0	ARREST BOOKED OAK ST / LAGUNA ST -122.425891675136	37.7745985956747	
2015-05-13 23:33:00	2.0 TRAFFIC VIOLATION...	0.0 1.0	ARREST BOOKED VANNES AV / GREE... -122.42436302145	37.8004143219856	
2015-05-13 23:30:00	0.0 GRAND THEFT FROM ...	0.0 1.0	NONE 1500 Block of LOM... -122.42699532676599	37.80087263276921	
2015-05-13 23:30:00	0.0 GRAND THEFT FROM ...	0.0 9.0	NONE 100 Block of BROD... -122.438737622757	37.7715411727957795	
2015-05-13 23:30:00	0.0 GRAND THEFT FROM ...	0.0 4.0	NONE 0 Block of TEDDY AV -122.40325236121201	37.713430704116	
2015-05-13 23:30:00	4.0 STOLEN AUTOMOBILE	0.0 4.0	NONE AVALON AV / PERU AV -122.423326976668	37.7251380403778	
2015-05-13 23:30:00	4.0 STOLEN AUTOMOBILE	0.0 5.0	NONE KIRKWOOD AV / DON... -122.371274317441	37.7275640719518	
2015-05-13 23:00:00	0.0 GRAND THEFT FROM ...	0.0 8.0	NONE 600 Block of THIRTY AV -122.508194031117	37.776601260681204	
2015-05-13 23:00:00	0.0 GRAND THEFT FROM ...	0.0 2.0	NONE JEFFERSON ST / LE... -122.419087676747	37.8078015516515	
2015-05-13 22:58:00	0.0 PETTY THEFT FROM ...	0.0 2.0	NONE JEFFERSON ST / LE... -122.419087676747	37.8078015516515	
2015-05-13 22:30:00	2.0 MISCELLANEOUS INV...	0.0 6.0	NONE 0 Block of ESCOLT... -122.487983072777	37.73766654332706	
2015-05-13 22:30:00	5.0 MALICIOUS MISCHIE...	0.0 7.0	NONE TURK ST / JONES ST -122.41241426358101	37.7830037945534	
2015-05-13 22:06:00	0.0 GRAND THEFT FROM ...	0.0 1.0	NONE FILMORE ST / GEA... -122.4329144603494	37.784533426568	
2015-05-13 22:00:00	1.0 FOUND PROPERTY	0.0 5.0	NONE 200 Block of WILM... -122.39774427103	37.7299346936044	
2015-05-13 22:00:00	1.0 FOUND PROPERTY	0.0 5.0	NONE 0 Block of MENDEL... -122.38369150395901	37.7431890419965	
2015-05-13 22:00:00	11.0 ROBBERY ARMED WIT...	0.0 7.0	NONE EDDY ST / JONES ST -122.412597377187	37.78393202772796	
2015-05-13 21:55:00	3.0 AGGRAVATED ASSAUL...	0.0 4.0	NONE GODEUS ST / MISSI... -122.421681531572	37.742822004945	
2015-05-13 21:40:00	2.0 TRAFFIC VIOLATION	0.0 5.0	ARREST BOOKED MENDELL ST / HUDS... -122.38640086995301	37.738983491072	
2015-05-13 21:30:00	1.0 FOUND PROPERTY	0.0 7.0	NONE 100 Block of JONE... -122.412429767654	37.782556330202	
2015-05-13 21:30:00	0.0 GRAND THEFT FROM ...	0.0 4.0	NONE 200 Block of EVEL... -122.449389111284	37.7426688025766	
2015-05-13 21:17:00	11.0 ROBBERY BODILY FORCE	0.0 4.0	NONE 1600 Block of VAL... -122.426272135283	37.747313629875	
2015-05-13 21:11:00	7.0 WARRANT ARREST	0.0 7.0	NONE 100 Block of JONE... -122.412249767634	37.782556330202	
2015-05-13 21:10:00	1.0 STAY AWAY OR COUR...	0.0 7.0	NONE 100 Block of JONE... -122.412249767634	37.782556330202	
2015-05-13 21:00:00	0.0 GRAND THEFT FROM ...	0.0 1.0	NONE FILMORE ST / LOM... -122.43604920358601	37.79984122288229	
2015-05-13 21:00:00	1.0 LOST PROPERTY	0.0 7.0	NONE 300 Block of OFAR... -122.41050925879499	37.78604322299206	
2015-05-13 21:00:00	0.0 GRAND THEFT FROM ...	0.0 1.0	NONE 2000 Block of BUS... -122.43101755702699	37.7873880712241	
2015-05-13 21:00:00	0.0 GRAND THEFT FROM ...	0.0 4.0	NONE 500 Block of COLL... -122.42356534294501	37.7325564882065	
2015-05-13 21:00:00	0.0 ATTEMPTED THEFT F...	0.0 6.0	NONE 19TH AV / SANITAG... -122.47573497852	37.744919069591	
2015-05-13 20:56:00	2.0 MISCELLANEOUS INV...	0.0 6.0	NONE 2000 Block of 415... -122.49978712069	37.74851760347229	
2015-05-13 20:54:00	0.0 GRAND THEFT FROM ...	0.0 1.0	NONE 1300 Block of WEB... -122.431046366089	37.7830295716044	
2015-05-13 20:50:00	1.0 CIVIL SIDEWALKS C...	0.0 3.0	ARREST BOOKED 400 Block of CAST... -122.43515009981199	37.7617597243598	
2015-05-13 20:45:00	5.0 MALICIOUS MISCHIE...	0.0 1.0	NONE 1500 Block of FIL... -122.432743822617	37.7838424568457	
2015-05-13 20:30:00	0.0 GRAND THEFT FROM ...	0.0 1.0	NONE 1600 Block of WEB... -122.43109540727	37.785876272526	
2015-05-13 20:30:00	5.0 MALICIOUS MISCHIE...	0.0 1.0	NONE KING ST / 3RD ST -122.391845617192	37.778124778322	
2015-05-13 20:30:00	0.0 GRAND THEFT FROM ...	0.0 0.0	NONE VALLEJO ST / BUCH... -122.431830723792	37.7565417032576	
2015-05-13 20:30:00	0.0 GRAND THEFT FROM ...	0.0 1.0	NONE CALIFORNIA ST / B... -122.43055177980101	37.7893227716214	
2015-05-13 20:29:00	14.0 SUSPICIOUS PACKAGE	0.0 6.0	NONE 1400 Block of HOL... -122.47318202955799	37.72156474662021	
2015-05-13 20:25:00	5.0 MALICIOUS MISCHIE...	0.0 4.0	NONE 0 Block of WINDIN... -122.432446462853	37.7108326541075	
2015-05-13 20:23:00	1.0 AIDED CASE MENTAL...	0.0 0.0	NONE 700 Block of MARK... -122.405294845215	37.7863072236365	
2015-05-13 20:15:00	0.0 PETTY THEFT FROM ...	0.0 0.0	NONE 1600 Block of MAR... -122.422127579529	37.7730330183515	
2015-05-13 20:15:00	0.0 PETTY THEFT SHOPL...	0.0 7.0	NONE 0 Block of STOCKT... -122.406351834294	37.7860311576362	
2015-05-13 20:15:00	0.0 PETTY THEFT VIOLAT...	0.0 5.0	ARREST BOOKED 100 Block of UT... -122.3901425004100	37.73021425004100	

c. Splitting the Date column into number of columns

Activities Terminal Aug 27 00:50

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pes1pg21cs016@pes1pg21cs016-virtual-machine: ~/CRIME/crime
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Category	Description dayofweek	District	Resolution	address	X	Y	Dates	Time Year Month Day Hours Mins Secs
WEAPON LAWS CARRYING A CONCEA...	Sunday MISSION	NONE 2000 Block of 1ST... -122.42937789146002	37.7661513878958	2015-03-22 04:11:00 2015 03 22 04 11 00				
FRAUD DEFRAUDING AN INNN...	Sunday MISSION	NONE 2000 Block of 1ST... -122.42937789146002	37.7661513878958	2015-03-22 04:11:00 2015 03 22 04 11 00				
VEHICLE THEFT STOLEN AUTOMOBILE	Sunday SOUTHERN	NONE 11TH ST / HOWARD ST -122.415564465695	37.773899482084	2015-03-22 04:00:00 2015 03 22 04 00 00				
SEX OFFENSES FORC... FORCIBLE RAPE BOD...	Sunday SOUTHERN	NONE 13TH ST / MISSION ST -122.4208161756909	37.7701899298175	2015-03-22 04:00:00 2015 03 22 04 00 00				
LARCENY/THEFT PETTY THEFT FROM ...	Sunday MISSION	NONE LIBERTY ST / CHUR... -122.427971287216	37.757291921351	2015-03-22 04:00:00 2015 03 22 04 00 00				
VANDALISM MALICIOUS MISCHIE...	Sunday INGLESIIDE	NONE 900 Block of MADR... -122.43737242018	37.71543668494485	2015-03-22 03:50:00 2015 03 22 03 50 00				
NON-CRIMINAL FOUND PROPERTY	Sunday SOUTHERN	NONE 800 Block of BRYA... -122.40340479147899	37.775408270671	2015-03-22 03:30:00 2015 03 22 03 30 00				
VEHICLE THEFT STOLEN TRUCK	Sunday INGLESIIDE	NONE 1000 Block of BRU... -122.402265036063	37.7193290259661	2015-03-22 03:30:00 2015 03 22 03 30 00				
LARCENY/THEFT PETTY THEFT FROM ...	Sunday TENDERLOIN	NONE LEAVENWORTH ST / ... -122.413869632554	37.7818621883021	2015-03-22 03:18:00 2015 03 22 03 18 00				
SUSPICIOUS OCC INVESTIGATIVE DET...	Sunday TENDERLOIN	NONE LEAVENWORTH ST / ... -122.413869632554	37.7818621883021	2015-03-22 03:18:00 2015 03 22 03 18 00				
VANDALISM MALICIOUS MISCHIE...	Sunday RICHMOND	NONE 200 Block of GOL... -122.447335399434	37.7776618791276	2015-03-22 03:15:00 2015 03 22 03 15 00				
VANDALISM MALICIOUS MISCHIE...	Sunday CENTRAL	NONE 200 Block of NORT... -122.411324919026	37.806804272619296	2015-03-22 03:15:00 2015 03 22 03 15 00				
OTHER OFFENSES TRAFFIC VIOLATION...	Sunday NORTHERN	ARREST BOOKED ELLIS ST / LARKIN ST	37.7842362877887	2015-03-22 03:07:00 2015 03 22 03 07 00				
WEAPON LAWS CARRYING A CONCEA...	Sunday NORTHERN	ARREST BOOKED ELLIS ST / LARKIN ST	37.7842362877887	2015-03-22 03:07:00 2015 03 22 03 07 00				
DRUG/NARCOTIC POSSESSION OF MET...	Sunday NORTHERN	ARREST BOOKED ELLIS ST / LARKIN ST	37.7842362877887	2015-03-22 03:07:00 2015 03 22 03 07 00				
ASSAULT INFFLICT INJURY ON...	Sunday PARK	ARREST BOOKED 1200 Block of SCO...	37.4237423367978	2015-03-22 03:00:00 2015 03 22 03 00 00				
ASSAULT BATTERY	Sunday MISSION	NONE COLLINGWOOD ST / ... -122.43595381188	37.759221191963	2015-03-22 02:55:00 2015 03 22 02 55 00				
WEAPON LAWS EXHIBITTING DEADLY...	Sunday INGLESIIDE	NONE 4700 Block of MIS... -122.436749760121	37.7219915769894	2015-03-22 02:30:00 2015 03 22 02 30 00				
NON-CRIMINAL AIDED CASE MENTAL...	Sunday TARVAL	NONE 1300 Block of 9TH AV -122.466313426154	37.763085116414	2015-03-22 02:30:00 2015 03 22 02 30 00				
BURGLARY BURGLARY OF STORE...	Sunday RICHMOND	ARREST BOOKED 2100 Block of SUT... -122.43574226156	37.78751756733495	2015-03-22 02:28:00 2015 03 22 02 28 00				
OTHER OFFENSES DRIVERS LICENSE S...	Sunday MISSION	ARREST BOOKED 16TH ST / MISSION ST	37.76565612146661	2015-03-22 02:18:00 2015 03 22 02 18 00				
ASSAULT BATTERER FORMER SP...	Sunday RICHMOND	ARREST BOOKED 400 Block of 29TH AV -122.4899174679501	37.78984246672621	2015-03-22 02:05:00 2015 03 22 02 05 00				
SECONDARY CODES DOMESTIC VIOLENCE	Sunday RICHMOND	ARREST BOOKED 400 Block of 29TH AV -122.4899174679501	37.78984246672621	2015-03-22 02:05:00 2015 03 22 02 05 00				
NON-CRIMINAL TURNED IN GUN	Sunday RICHMOND	ARREST BOOKED 400 Block of 29TH AV -122.4899174679501	37.78984246672621	2015-03-22 02:05:00 2015 03 22 02 05 00				
ASSAULT BATTERY	Sunday SOUTHERN	NONE 500 Block of HOWA... -122.397302436528	37.7878246694374	2015-03-22 02:03:00 2015 03 22 02 03 00				
OTHER OFFENSES HARASSING PHONE C...	Sunday SOUTHERN	NONE 500 Block of HOWA... -122.397302436528	37.7878246694374	2015-03-22 02:03:00 2015 03 22 02 03 00				
NON-CRIMINAL CASE CLOSURE	Sunday SOUTHERN	EXCEPTIONAL CLEAR... [500 Block of HOWA...]	37.7878246694374	2015-03-22 02:00:00 2015 03 22 02 00 00				
ROBBERY ATTEMPTED ROBBERY	Sunday MISSION	ARREST BOOKED 200 Block of VALE... -122.422158645677	37.7684403915766	2015-03-22 02:00:00 2015 03 22 02 00 00				
ASSAULT AGGRAVATED ASSAUL...	Sunday MISSION	ARREST BOOKED 200 Block of VALE... -122.422158645677	37.7684403915766	2015-03-22 02:00:00 2015 03 22 02 00 00				
WARRANTS ENROUTE TO OUTSID...	Sunday MISSION	ARREST BOOKED 200 Block of VALE... -122.422158645677	37.7684403915766	2015-03-22 02:00:00 2015 03 22 02 00 00				
ASSAULT BATTERY	Sunday SOUTHERN	EXCEPTIONAL CLEAR... [500 Block of HOWA...]	37.7877640998099	2015-03-22 01:51:00 2015 03 22 01 51 00				
ASSAULT BATTERER FORMER SP...	Sunday RICHMOND	ARREST BOOKED SUTTER ST / SCOTT ST -122.4360718338699	37.7996224238809	2015-03-22 01:51:00 2015 03 22 01 51 00				
KIDNAPPING FALSE IMPRISONMENT	Sunday RICHMOND	ARREST BOOKED SUTTER ST / SCOTT ST -122.4382072440099	37.7854586886889	2015-03-22 01:32:00 2015 03 22 01 32 00				
ASSAULT BATTERY FORMER SP...	Sunday NORTHERN	ARREST BOOKED SUTTER ST / SCOTT ST -122.4382072440099	37.7854586886889	2015-03-22 01:32:00 2015 03 22 01 32 00				
LARCENY/THEFT PETTY THEFT OF PR...	Sunday NORTHERN	NONE 2100 Block of UNI... -122.4346956003799	37.797245764849	2015-03-22 01:30:00 2015 03 22 01 30 00				
WEAPON LAWS POSS OF FIREARM B...	Sunday SOUTHERN	ARREST BOOKED 800 Block of BRYA... -122.403407479174899	37.77542076711	2015-03-22 01:29:00 2015 03 22 01 29 00				
WEAPON LAWS POSS OF LOADED FI...	Sunday SOUTHERN	ARREST BOOKED 800 Block of BRYA... -122.403407479174899	37.77542076711	2015-03-22 01:29:00 2015 03 22 01 29 00				

d. Converting ‘category’,’PdDistrict’(as District) and ‘DayofWeek’ into numeric data (no streaming)

Dates	category	DayofWeek	x	y	District
2015-05-13 23:53:00	10	1.0	-122.425891675136	37.7745985956747	10
2015-05-13 23:53:00	8	1.0	-122.425891675136	37.7745985956747	10
2015-05-13 23:33:00	8	1.0	-122.42436302145	37.8004143219856	10
2015-05-13 23:30:00	37	1.0	-122.42699532676599	37.80087263276921	10
2015-05-13 23:30:00	37	1.0	-122.438737622757	37.771541172057795	7
2015-05-13 23:30:00	37	1.0	-122.40325236121201	37.713430704116	6
2015-05-13 23:30:00	34	1.0	-122.423326976668	37.7251380403778	6
2015-05-13 23:30:00	34	1.0	-122.371274317441	37.7275640719518	2
2015-05-13 23:00:00	37	1.0	-122.508194031117	37.776601260681204	9
2015-05-13 23:00:00	37	1.0	-122.419087676747	37.8078015516515	3
2015-05-13 22:58:00	37	1.0	-122.419087676747	37.8078015516515	3
2015-05-13 22:30:00	8	1.0	-122.487983072777	37.737666654332706	4
2015-05-13 22:30:00	30	1.0	-122.41241426358101	37.7830037964534	5
2015-05-13 22:06:00	37	1.0	-122.432914603494	37.7843533426568	10
2015-05-13 22:00:00	35	1.0	-122.397744427103	37.7299346936044	2
2015-05-13 22:00:00	35	1.0	-122.38369150395901	37.7431890419965	2
2015-05-13 22:00:00	23	1.0	-122.412597377187	37.783932027727296	5
2015-05-13 21:55:00	16	1.0	-122.421681531572	37.7428222004845	6
2015-05-13 21:40:00	8	1.0	-122.38640086995301	37.738983491072	2
2015-05-13 21:30:00	35	1.0	-122.412249767634	37.782556330202	5

only showing top 20 rows

`df.dtypes`

```
[('Dates', 'string'),
 ('category', 'int'),
 ('DayofWeek', 'double'),
 ('x', 'double'),
 ('y', 'double'),
 ('District', 'int')]
```

e. Converting Dates into numeric data(no streaming)

category	DayofWeek	x	y	District	Year	Month	Day	Hours	Mins	Secs
10	1.0	-122.425891675136	37.7745985956747	10	2015	05	13	23	53	00
8	1.0	-122.425891675136	37.7745985956747	10	2015	05	13	23	53	00
8	1.0	-122.42436302145	37.8004143219856	10	2015	05	13	23	33	00
37	1.0	-122.42699532676599	37.80087263276921	10	2015	05	13	23	30	00
37	1.0	-122.438737622757	37.771541172057795	7	2015	05	13	23	30	00
37	1.0	-122.40325236121201	37.713430704116	6	2015	05	13	23	30	00
34	1.0	-122.423326976668	37.7251380403778	6	2015	05	13	23	30	00
34	1.0	-122.371274317441	37.7275640719518	2	2015	05	13	23	30	00
37	1.0	-122.508194031117	37.776601260681204	9	2015	05	13	23	00	00
37	1.0	-122.419087676747	37.8078015516515	3	2015	05	13	23	00	00
37	1.0	-122.419087676747	37.8078015516515	3	2015	05	13	22	58	00
8	1.0	-122.487983072777	37.737666654332706	4	2015	05	13	22	30	00
30	1.0	-122.41241426358101	37.7830037964534	5	2015	05	13	22	30	00
37	1.0	-122.432914603494	37.7843533426568	10	2015	05	13	22	06	00
35	1.0	-122.397744427103	37.7299346936044	2	2015	05	13	22	00	00
35	1.0	-122.38369150395901	37.7431890419965	2	2015	05	13	22	00	00
23	1.0	-122.412597377187	37.783932027727296	5	2015	05	13	22	00	00
16	1.0	-122.421681531572	37.7428222004845	6	2015	05	13	21	55	00
8	1.0	-122.38640086995301	37.738983491072	2	2015	05	13	21	40	00
35	1.0	-122.412249767634	37.782556330202	5	2015	05	13	21	30	00

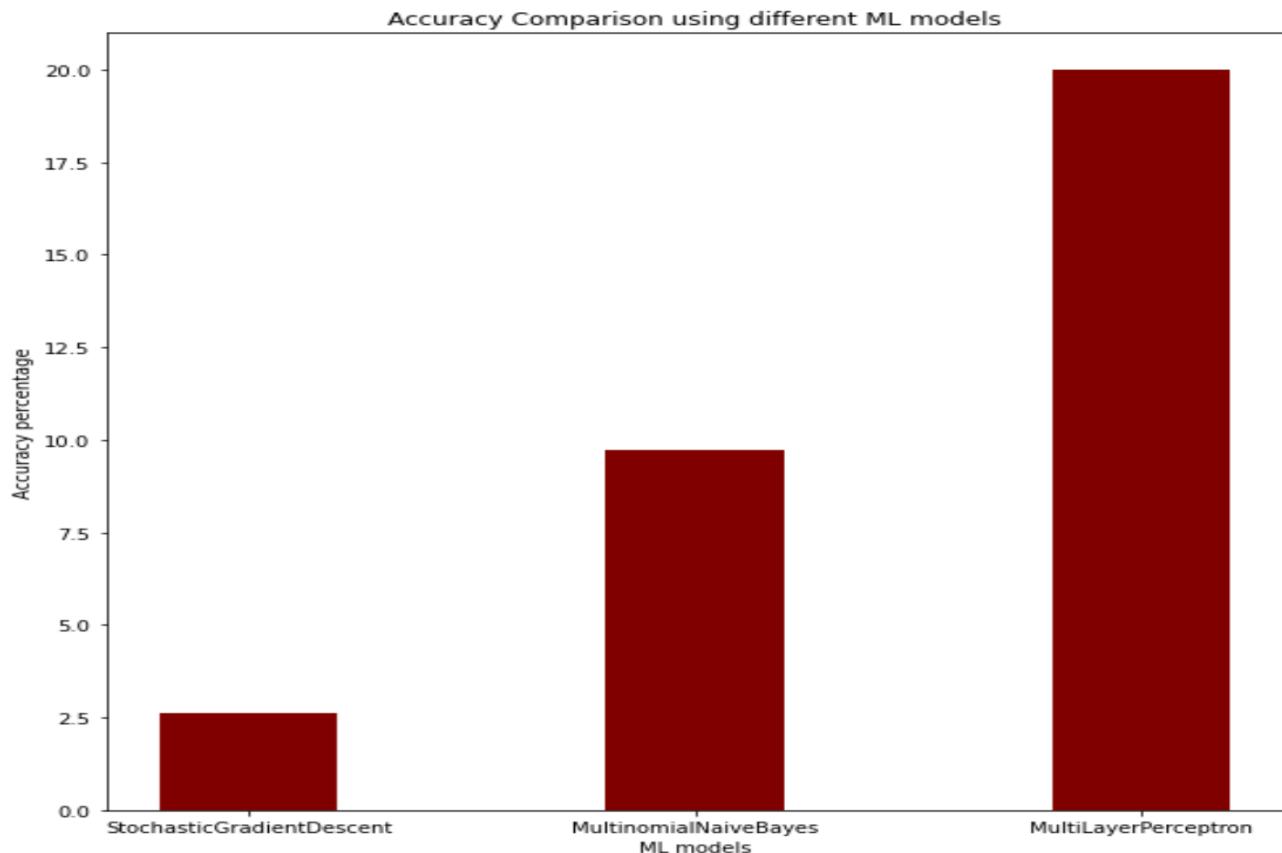
only showing top 20 rows

f. Vectorizing X,Y as s[2] and Scaling them using MinMaxScaler(no streaming)

DayofWeek	category	District	Year	Month	Day	Hours	Mins	s[0]	s[1]
1.0	10	10	2015	5	13	23	53	0.04357794799292515	0.001275901072932...
1.0	8	10	2015	5	13	23	53	0.04357794799292515	0.001275901072932...
1.0	8	10	2015	5	13	23	33	0.04433709665847194	0.001769583980190...
1.0	37	10	2015	5	13	23	30	0.04302986069898061	0.001778348413053...
1.0	37	7	2015	5	13	23	30	0.03719848867946867	0.001217432922095...
1.0	37	6	2015	5	13	23	30	0.054820916306646504	1.061666958370074...
1.0	34	6	2015	5	13	23	30	0.044851609540570096	3.300500657010469E-4
1.0	34	2	2015	5	13	23	30	0.07070161543292368	3.764438919341884...
1.0	37	9	2015	5	13	23	0	0.002705561862066...	0.001314198716421...
1.0	37	3	2015	5	13	23	0	0.04695689925227035	0.001910852483509...
1.0	37	3	2015	5	13	22	58	0.04695689925227035	0.001910852483509...
1.0	8	4	2015	5	13	22	30	0.01274257822084441	5.696390079869439E-4
1.0	30	5	2015	5	13	22	30	0.050271000245853466	0.001436636583780...
1.0	37	10	2015	5	13	22	6	0.04009027335474464	0.001462444414447...
1.0	35	2	2015	5	13	22	0	0.057556225727661725	4.217780954104323...
1.0	35	2	2015	5	13	22	0	0.0645350842811295	6.752455039667556E-4
1.0	23	5	2015	5	13	22	0	0.0501800637238011	0.001454387465874514
1.0	16	6	2015	5	13	21	55	0.0456687582906726	6.682302690681396E-4
1.0	8	2	2015	5	13	21	40	0.06318957901877845	5.948213244559316E-4
1.0	35	5	2015	5	13	21	30	0.050352691004074884	0.001428079534591...

only showing top 20 rows

3. Accuracy comparison for different ML models using Training data(partial_fit)



4. Predictions comparison between different ML models(partial fit)

