Assignment 1: Simple Data Pre-processing. Create BANKNIFTY future and option data from given csv file:

Steps for preparing Future data:

1. Filter BANKNIFTY-I.NFO from Ticker column.
2. Convert Date and Time into a new datetime column.
3. Remove columns: Ticker, Date, Time, Volume, Open Interest.
4. Sort data by datetime.

Output: Your output seems to appear like this.

date_time	open	high	low	close
07/04/2017 15:13	21419	21427.1	21411.8	21427
07/04/2017 15:12	21422	21422.05	21411	21421
07/04/2017 15:14	21427	21438.8	21422.2	21426
07/04/2017 15:15	21427.2	21433.7	21415.1	21428.2
07/04/2017 15:11	21430	21430.05	21415.85	21422
07/04/2017 15:16	21431	21437.75	21424	21433.95
07/04/2017 15:17	21431.05	21437.35	21430	21435.1
07/04/2017 15:18	21435.1	21447.05	21435.1	21445.6
07/04/2017 15:10	21438	21440.3	21430.05	21430.05

Steps for preparing Option data:

1. Filter BANKNIFTYxxxxxxxxxxCE.NFO & BANKNIFTYxxxxxxxxxxPE.NFO from ticker column.
   Now, Ticker column have value like:
   BANKNIFTY03FEB2235000PE.NFO
   BANKNIFTY03FEB2235500CE.NFO
   BANKNIFTY03FEB2235500CE.NFO
   BANKNIFTY03FEB2235500CE.NFO
   BANKNIFTY03FEB2235500CE.NFO
   BANKNIFTY03FEB2235000PE.NFO => BANKNIFTY | 03FEB22 | 35000PE | .NFO
   Extract scrip (35000PE) from ticker and create separate column named scrip.
   Extract expiry date (03FEB22) form ticker and create separate column named expiry.
2. Convert Date and Time into a new datetime column.
3. Calculate dte = expiry - Date
4. Filter data by minimum dte value.
5. Remove columns: Ticker, Date, Time, Volume, Open Interest.
6. Sort data by datetime.

Output: Your output seems to appear like this.

date_time	scrip	open	high	low	close	expiry	dte
07/04/2017 09:15	20500CE	1019.45	1019.45	1019.45	1019.45	13/04/2017	6
07/04/2017 09:15	20500PE	2.5	2.65	1.75	1.75	13/04/2017	6
07/04/2017 09:15	20700PE	6	6.6	3.5	3.5	13/04/2017	6
07/04/2017 09:15	20800PE	9	9	5.6	6	13/04/2017	6
07/04/2017 09:15	20900PE	6.3	10.3	6.3	8.45	13/04/2017	6
07/04/2017 09:15	21000CE	530.65	530.7	530.65	530.7	13/04/2017	6
07/04/2017 09:15	21000PE	9.65	14.7	9.45	11.65	13/04/2017	6
07/04/2017 09:15	21100PE	26.4	26.4	16.85	17.85	13/04/2017	6
07/04/2017 09:15	21200PE	35	35.95	24.8	29	13/04/2017	6