

Execute the program like below:

```
"Usage: java -cp SparkApplication.jar SparkApplication input_stream_dir output_dir"
```

```
baskars-mbp:SparkAssignment baskars$
```

```
java -cp SparkApplication.jar SparkApplication  
/Users/baskars/Details/NextStep/BigData/Upgrad/Project/spark_stream  
/Users/baskars/Details/NextStep/BigData/Upgrad/Project/spark_output
```

Output directory:

Note:

- 1) For each window 4 files will be created one for each question.
 - a) prob1_avg_close_timestamp – for question 1
 - b) prob2_max_profit_timestamp – for question 2
 - c) prob3_stocks_rsi_timestamp – for question 3
 - d) prob4_max_vol_timestamp – for question 4
- 2) Inside these directories the output is present in part-00000 file
- 3) The same output directory is used for checkpoint by creating an internal directory “stream_checkpoint”

```
baskars-mbp:spark_output baskars$ pwd  
/Users/baskars/Details/NextStep/BigData/Upgrad/Project/spark_output
```

```
baskars-mbp:spark_output baskars$ ls -al  
total 24  
drwxr-xr-x  30 baskars  staff  1020 Sep 30 16:27 .  
drwxr-xr-x  19 baskars  staff   646 Sep 30 15:55 ..  
-rw-r--r--   1 baskars  staff    60 Sep 30 15:50 .checkpoint-1538302800000.crc  
-rw-r--r--   1 baskars  staff    60 Sep 30 15:51 .checkpoint-1538302860000.crc  
-rw-r--r--   1 baskars  staff    60 Sep 30 15:52 .checkpoint-1538302920000.crc  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:02 prob1_avg_close1538303520800  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:07 prob1_avg_close1538303820280  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:12 prob1_avg_close1538304120226  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:17 prob1_avg_close1538304420233  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:22 prob1_avg_close1538304720214  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:27 prob1_avg_close1538305020173  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:02 prob2_max_profit1538303521001  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:07 prob2_max_profit1538303820374  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:12 prob2_max_profit1538304120315  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:17 prob2_max_profit1538304420319  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:22 prob2_max_profit1538304720287  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:27 prob2_max_profit1538305020247  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:02 prob3_stocks_rsi1538303521118  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:07 prob3_stocks_rsi1538303820488  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:12 prob3_stocks_rsi1538304120435  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:17 prob3_stocks_rsi1538304420414  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:22 prob3_stocks_rsi1538304720370  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:27 prob3_stocks_rsi1538305020332  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:02 prob4_max_vol1538303521228  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:07 prob4_max_vol1538303820604  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:12 prob4_max_vol1538304120537  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:17 prob4_max_vol1538304420499  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:22 prob4_max_vol1538304720446  
drwxr-xr-x   6 baskars  staff   204 Sep 30 16:27 prob4_max_vol1538305020427  
drwxr-xr-x  24 baskars  staff   816 Sep 30 16:27 stream_checkpoint
```

1st Window Output:

```
baskars-mbp:spark_output baskars$ cat prob1_avg_close1538303520800/part-00000
(ADBE,263.56895999999995)
(MSFT,114.61499999999998)
(FB,165.19594)
(GOOG,1180.67)
```

```
baskars-mbp:spark_output baskars$ cat prob2_max_profit1538303521001/part-00000
(0.15806000000020504,GOOG)
(0.088959999999291,ADBE)
(0.0567800000000338,FB)
(-0.01466000000006335,MSFT)
```

```
baskars-mbp:spark_output baskars$ cat prob3_stocks_rsi1538303521118/part-00000
(ADBE,100.0)
(MSFT,0.0)
(FB,100.0)
(GOOG,100.0)
```

```
baskars-mbp:spark_output baskars$ cat prob4_max_vol1538303521228/part-00000
(157566,MSFT)
(114820,FB)
(26798,ADBE)
(9135,GOOG)
baskars-mbp:spark_output baskars$
```

2nd Window Output:

```
baskars-mbp:spark_output baskars$ cat
prob1_avg_close1538303820280/part-00000
(ADBE,267.51948000000004)
(MSFT,114.58600000000001)
(FB,167.23197)
(GOOG,1194.8596599999998)
```

```
baskars-mbp:spark_output baskars$ cat
prob2_max_profit1538303820374/part-00000
(0.0399400000000142,FB)
(0.03948000000002594,ADBE)
(-0.00582999999974689,MSFT)
(-0.23131000000012136,GOOG)
```

```
baskars-mbp:spark_output baskars$ cat
prob3_stocks_rsi1538303820488/part-00000
(ADBE,89.89490703315037)
(MSFT,20.345879959339825)
(FB,100.0)
(GOOG,20.296889847706353)
```

```
baskars-mbp:spark_output baskars$ cat prob4_max_vol1538303820604/part-00000
(1162090,FB)
(313232,MSFT)
(99636,G00GL)
(58978,ADBE)
baskars-mbp:spark_output baskars$
```

3rd Window Output:

```
baskars-mbp:spark_output baskars$ cat prob1_avg_close1538304120226/part-00000
(ADBE,271.4700000000001)
(MSFT,114.55600000000004)
(FB,169.26600000000002)
(G00GL,1209.0491499999998)
```

```
baskars-mbp:spark_output baskars$ cat prob2_max_profit1538304120315/part-00000
(0.029200000000031423,FB)
(0.004000000000061732,MSFT)
(-0.009999999999934062,ADBE)
(-0.6308500000000095,G00GL)
```

```
baskars-mbp:spark_output baskars$ cat prob3_stocks_rsi1538304120435/part-00000
(ADBE,0.0)
(MSFT,90.00000000002558)
(FB,100.0)
(G00GL,0.0)
```

```
baskars-mbp:spark_output baskars$ cat prob4_max_vol1538304120537/part-00000
(2102910,FB)
(314596,MSFT)
(183305,G00GL)
(64360,ADBE)
```

4 th Window Output:

```
baskars-mbp:spark_output baskars$ cat
prob1_avg_close1538304420233/part-00000
(ADBE,271.4700000000001)
(MSFT,114.55800000000004)
(FB,169.266)
(G00GL,1209.04881)
```

```
baskars-mbp:spark_output baskars$ cat
prob2_max_profit1538304420319/part-00000
(0.029200000000031423,FB)
(0.002000000000066393,MSFT)
(-0.005999999999971806,ADBE)
(-0.6511900000000423,G00GL)
```

```
baskars-mbp:spark_output baskars$ cat
prob3_stocks_rsi1538304420414/part-00000
```

```
(ADBE,0.0)
(MSFT,70.00000000005969)
(FB,100.0)
(GOOG,0.0)
```

```
baskars-mbp:spark_output baskars$ cat prob4_max_vol1538304420499/part-00000
(2102910,FB)
(308068,MSFT)
(187911,GOOG)
(46916,ADBE)
```

5th Window Output:

```
baskars-mbp:spark_output baskars$ cat
prob1_avg_close1538304720214/part-00000
(ADBE,271.4700000000001)
(MSFT,114.670454545456)
(FB,169.48727272727)
(GOOG,1209.27542727273)
```

```
baskars-mbp:spark_output baskars$ cat
prob2_max_profit1538304720287/part-00000
(0.0125999999999991,FB)
(-0.0013636363636067017,MSFT)
(-0.004545454545393568,ADBE)
(-0.412754545454618,GOOG)
```

```
baskars-mbp:spark_output baskars$ cat
prob3_stocks_rsi1538304720370/part-00000
(ADBE,0.0)
(MSFT,36.3636363664554)
(FB,83.41369334619358)
(GOOG,11.910873978620359)
```

```
baskars-mbp:spark_output baskars$ cat prob4_max_vol1538304720446/part-00000
(1511596,FB)
(257034,MSFT)
(165001,GOOG)
(44630,ADBE)
```

6th Window Output:

```
baskars-mbp:spark_output baskars$ cat
prob1_avg_close1538305020173/part-00000
(ADBE,269.699309090914)
(MSFT,114.763181818182)
(FB,168.88)
(GOOG,1204.33422727273)
```

```
baskars-mbp:spark_output baskars$ cat
prob2_max_profit1538305020247/part-00000
```

```
(0.013918181818183939,FB)
(0.011127272727321724,ADBE)
(-0.005000000000023874,MSFT)
(-0.029390909090807327,G00GL)
```

```
baskars-mbp:spark_output baskars$ cat
prob3_stocks_rsi1538305020332/part-00000
(ADBE,80.23715415020561)
(MSFT,13.333333333343433)
(FB,84.49752140603483)
(G00GL,45.463729479431045)
```

```
baskars-mbp:spark_output baskars$ cat prob4_max_vol1538305020427/part-
00000
(647402,FB)
(203765,MSFT)
(85908,G00GL)
(47042,ADBE)
```