CS5542 Big Data Apps and Analytics

LAB ASSIGNMENT #1

1) Write a map-reduce pseudo code for Sum of Two Matrices.

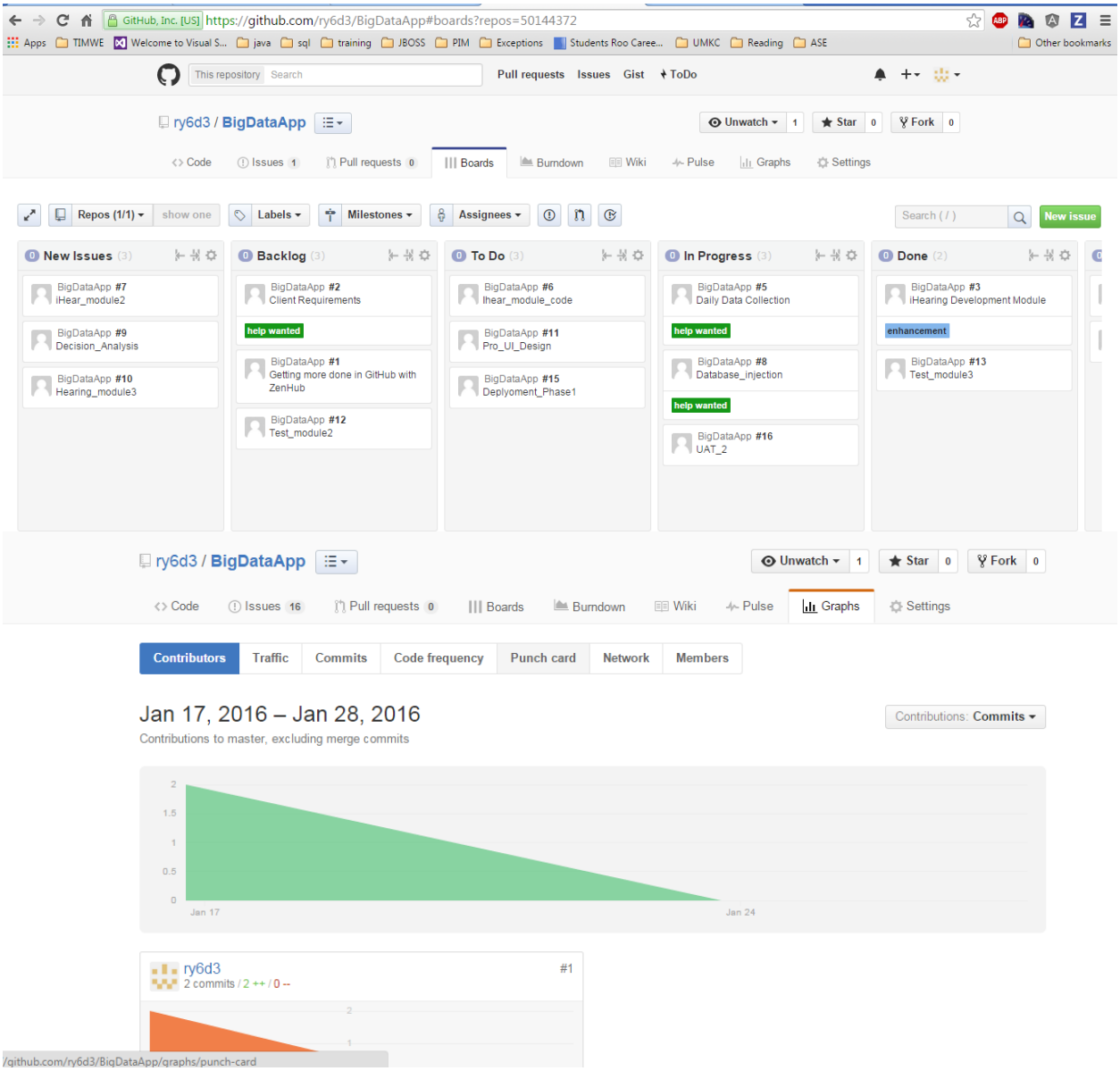
$$\mathbf{A}+\mathbf{B} = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1} & a_{m2} & \cdots & a_{mn} \end{bmatrix} + \begin{bmatrix} b_{11} & b_{12} & \cdots & b_{1n} \\ b_{21} & b_{22} & \cdots & b_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ b_{m1} & b_{m2} & \cdots & b_{mn} \end{bmatrix}$$

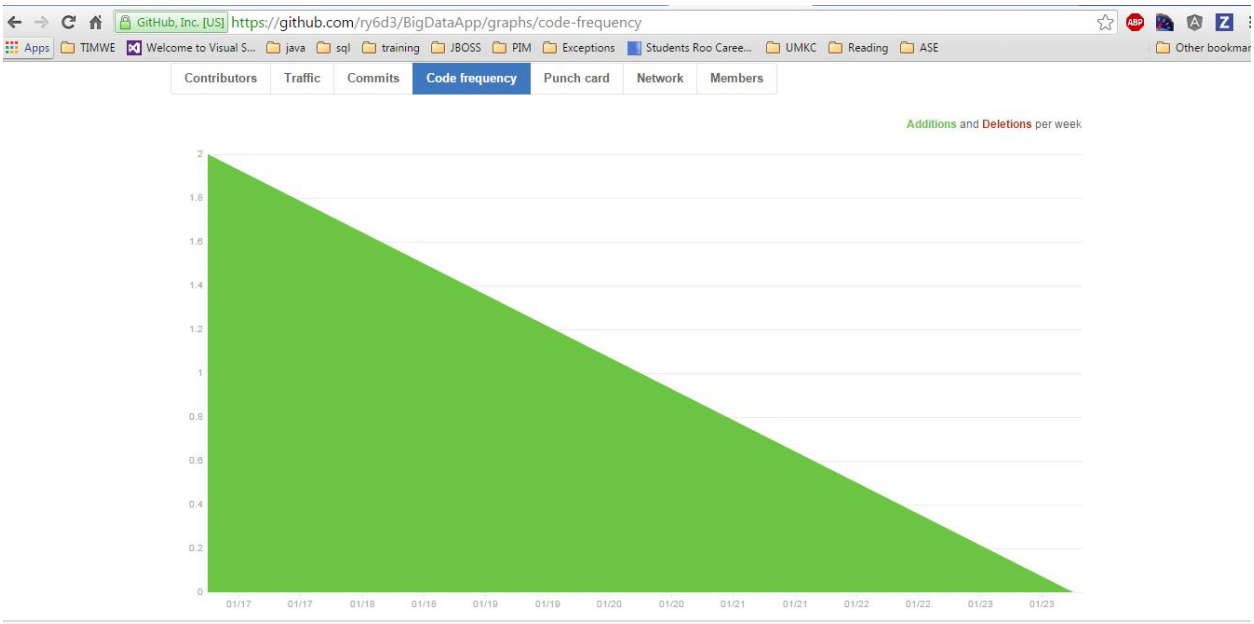
$$= \begin{bmatrix} a_{11}+b_{11} & a_{12}+b_{12} & \cdots & a_{1n}+b_{1n} \\ a_{21}+b_{21} & a_{22}+b_{22} & \cdots & a_{2n}+b_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{m1}+b_{m1} & a_{m2}+b_{m2} & \cdots & a_{mn}+b_{mn} \end{bmatrix}$$

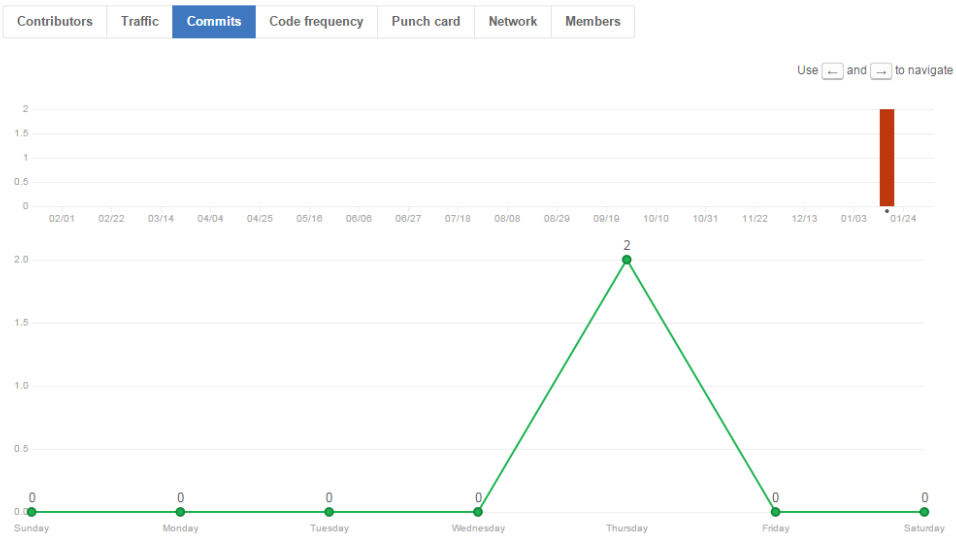
- Store the Matrices in an Array
- Add the array

```
class Mapper
    method Map(null, items [A11, A12,...] ,[B11, B12,...] )
        for all item i in [A11, A12,...]
            X = new AssociativeArray : item -> counter
        for all item i in [B11, B12,...]
            Y = new AssociativeArray : item -> counter
    Emit(item i, stripe X)
    Emit(item i, stripe Y)
```

```
class Reducer
    method Reduce(item i, stripes [X, Y,...])
            H = new AssociativeArray : item -> counter
          Loop (H.notEqualsToNull)
            H = sum( [X, Y,...] )
    for all item j in H.keys()
       Emit(pair [i j], H{i,j})
```


https://github.com/ry6d3/BigDataApp#boards?repos=50144372
ry6d3 / BigDataApp
Unwatch 1
Star 0
Fork 0
Code
Issues 1
Pull requests 0
Boards
Burndown
Wiki
Pulse
Graphs
Settings
Repos (1/1)
show one
Labels
Milestones
Assignees
Search (/)
New issue
New Issues (3)
BigDataApp #7 iHear_module2
BigDataApp #9 Decision_Analysis
BigDataApp #10 Hearing_module3
Backlog (3)
BigDataApp #2 Client Requirements
help wanted
BigDataApp #1 Getting more done in GitHub with ZenHub
BigDataApp #12 Test_module2
To Do (3)
BigDataApp #6 Ihear_module_code
BigDataApp #11 Pro_UI_Design
BigDataApp #15 Deplyoment_Phase1
In Progress (3)
BigDataApp #5 Daily Data Collection
help wanted
BigDataApp #8 Database_injection
help wanted
BigDataApp #16 UAT_2
Done (2)
BigDataApp #3 iHearing Development Module
enhancement
BigDataApp #13 Test_module3
ry6d3 / BigDataApp
Unwatch 1
Star 0
Fork 0
Code
Issues 16
Pull requests 0
Boards
Burndown
Wiki
Pulse
Graphs
Settings
Contributors
Traffic
Commits
Code frequency
Punch card
Network
Members
Jan 17, 2016 – Jan 28, 2016
Contributions to master, excluding merge commits
Contributions: Commits
2
1.5
1
0.5
0
Jan 17
Jan 24
ry6d3
2 commits / 2 ++ / 0 --
#1
/github.com/ry6d3/BigDataApp/graphs/punch-card


GitHub, Inc. [US] https://github.com/ry6d3/BigDataApp/graphs/code-frequency
Contributors
Traffic
Commits
Code frequency
Punch card
Network
Members
Additions and Deletions per week
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
01/17
01/17
01/18
01/18
01/19
01/19
01/20
01/20
01/21
01/21
01/22
01/22
01/23
01/23


Contributors
Traffic
Commits
Code frequency
Punch card
Network
Members
Use ← and → to navigate
2
1.5
1
0.5
0
02/01
02/22
03/14
04/04
04/25
05/16
06/06
06/27
07/18
08/08
08/29
09/19
10/10
10/31
11/22
12/13
01/03
01/24
2
2.0
1.5
1.0
0.5
0
0
0
0
0
0
0
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday