HW4: Simple File Transfer using TCP

What to Implement

- File transfer client and server application
  - The same to HW3 (displaying file transfer status)
- Difference from HW3
  - Use TCP instead of UDP (which will significantly reduce the implementation overhead)
- Mandatory
  - Client transfer rate control
- Optional
  - Option A: support of simultaneous file transfers from multiple clients
  - Option B: Support of simultaneous file transfers from a single client

```
client> sendrate 100K
ok
client> recvrate 200K
ok
client> ratecurr
send: 100K, recv: 200K
```

What to Implement

- Support of ‘credit’ command: credit [student ID]
  - There should be four or five credit_[ID]() function in client.c
  - Each team member should write his/her own credit function and commit the change to Github repository by herself or himself

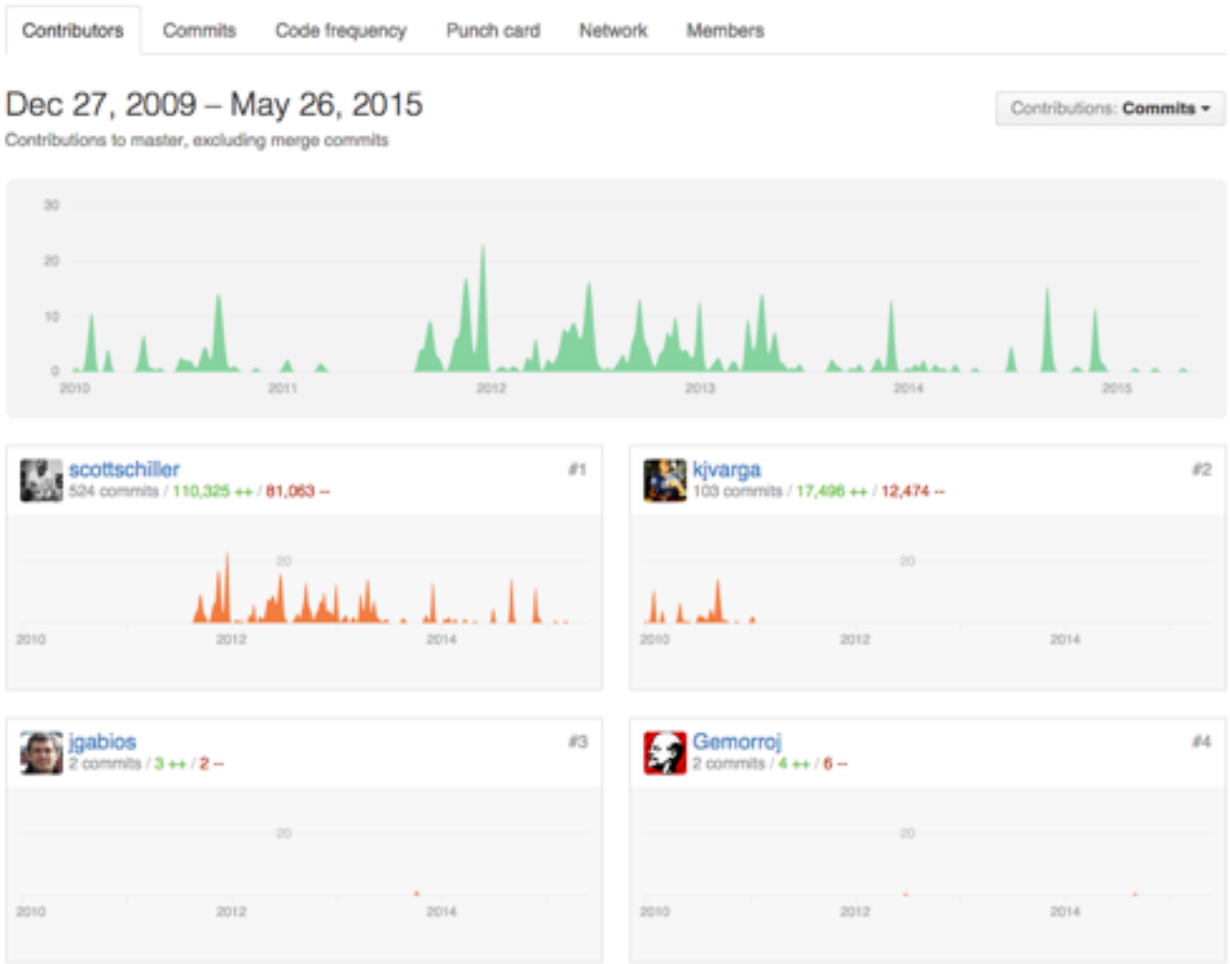
client> credit 20101234
20101234 John Doe designed function X(), Y(), Z() and participated in writing the report.

HW4: Simple File Transfer using TCP

- What to submit?
  - client.c and server.c (and additional header files if necessary)
  - A short report explaining
    - how to run your application (with captured images)
- Where to submit?
  - Github (www.github.com)
- Due date
  - June 14, 2015, 23:59PM

What to Implement

- Mandatory
  - Every student should participate in writing and commit code to Github
  - Not allowed
    - Member A: coding+discussion, Member B, C, and D: discussion



Grading

- Single client + xfer rate
  - 10 pts
- Option A or B
  - Additional 5 pts for each
- Bonus points & policies
  - All the participating members will get the same points
  - Bonus points for each member having a commit history
    - +1pts for 4 person team + 1pts
    - +0.8pts for 5 person team + 1pts
  - Max score will be: 10+5+5+4+1 = 25pts
  - Non-participating members will get **no points**

Team Assigment for HW3&4

name	Team
김정출	1
김희태	1
민경민	1
이두나	1
임기성	1
김다은	2
박지현	2
이성수	2
전한셈	2
에기시브 오딜존	3
이소령	3
이웅	3
정지만	3
허준영	3
김상호	4
김진하	4
김학균	4
박세희	4
이형준	4
김용현	5
김윤창	5
이승희	5
임솔빈	5
최진영	5

name	Team
구본현	6
김영호	6
신승열	6
최은주	6
허성실	6
김민호	7
박천호	7
알소베히바데르나지엠	7
유선	7
조광현	7
권영훈	8
김나윤	8
김예주	8
박지윤	8
최희재	8
김지현	9
데나야로브 백하도르	9
이지연	9
임병준	9
최현준	9

name	Team
김소담	10
민권홍	10
인형민	10
최은헌	10
황주현	10
김연빈	11
김혜진	11
서동주	11
양희선	11
김지용	12
성연진	12
이경빈	12
차진원	12
최대호	12
박형순	13
신은영	13
원윤주	14
이창우	13
황인기	13
유세프	14
이동우	14
이재열	14
차동민	14

TCP Tip

- http://stackoverflow.com/questions/15384518/how-many-bytes-can-i-write-at-once-on-a-tcp-socket
- How many bytes can I write at once on a TCP socket?

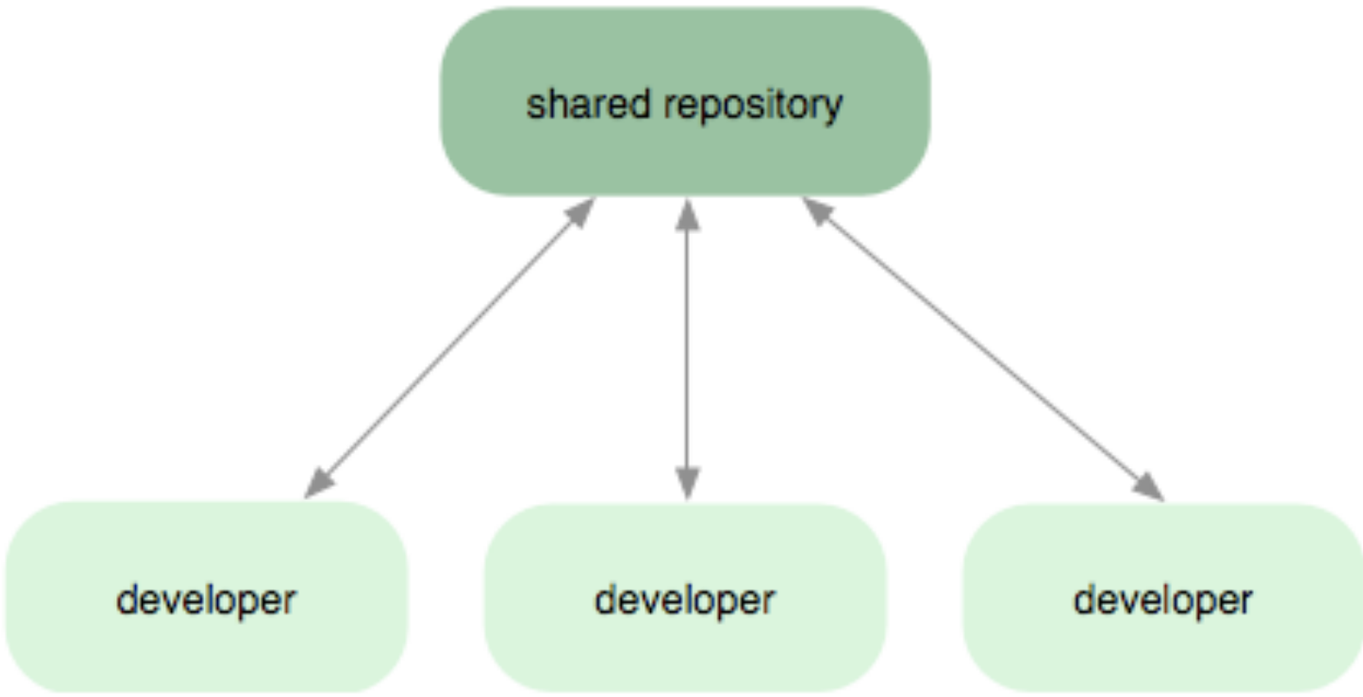
```
ssize_t total_bytes_written = 0;
while (total_bytes_written != 1024)
{
    assert(total_bytes_written < 1024);
    ssize_t bytes_written = write(tcp_socket,
                                  &buffer[total_bytes_written],
                                  1024 - total_bytes_written);
    if (bytes_written == -1)
    {
        /* Report failure and exit. */
        break;
    }
    total_bytes_written += bytes_written;
}
```

Understanding Git

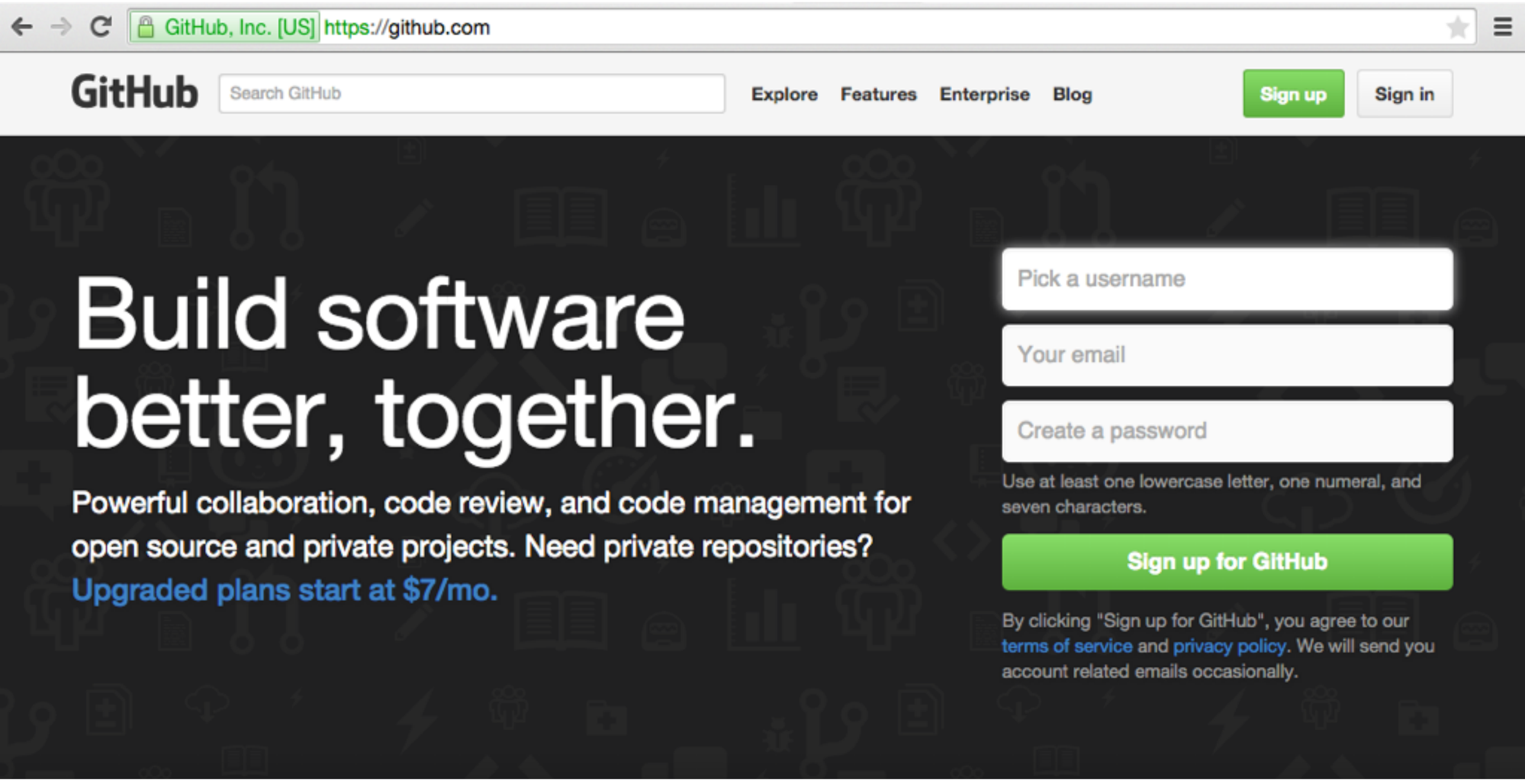
- http://pismute.github.io/whygitisbetter/#easy-to-learn

Subversion-Style Workflow

매우 일반적으로 사용되는 Git 워크플로우로 중앙집중식centralized workflow이 있다. 특히 Subversion같은 중앙집중식 시스템를 사용하다가 넘어온 사람들이 사용한다. 내가 마지막으로 fecth한 후에 아무도 푸시하지 못하도록 할 수 있다. 그래서 모든 개발자가 같은 서버에 푸시하는 중앙집중식 모델도 가능하다.



Github Signup



Git Client Installation

- https://git-scm.com/download/linux

Download for Linux and Unix

It is easiest to install Git on Linux using the preferred package manager of your Linux distribution.

Debian/Ubuntu

```
$ apt-get install git
```

Git Client Configuration

- http://classic.scottr.org/presentations/git-in-5-minutes/
- http://guides.railsgirls.com/github/
- https://www.youtube.com/watch?v=mMsWq3rS6Po

Adding Collaborators on Github

- https://help.github.com/articles/adding-collaborators-to-a-personal-repository/