

Week 13

# Social Visualization

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정보 비주얼라이제이션 2015 Fall

human-computer interaction + design lab.

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# Casual InfoVis Revisit

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# Casual InfoVis

- ✦ Artistic InfoVis
- ✦ Ambient InfoVis
- ✦ **Social InfoVis**



# Social Visualization

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# Social Visualization

- ♦ “Visualization **of** social information **for** social purposes” - Judith Donath, Social Media Group, MIT Media Lab.
- ♦ 사람들과 관계있는 또는 사람이 중심이 된 데이터의 비주얼라이제이션



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# Social Visualization

- ✦ “Unlike information visualization which has as its goal of helping users digest information more effectively or data visualization which has as its goal of helping users analyze and see trends in the data, **social visualization** has as its goal of **creating awareness and catalyzing social interactions among its users.**”

- Alison Lee, IBM TJ Watson Research Center



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# Social Visualization

- ✦ Data related to people?

- ✦ 메신저를 통한 대화
- ✦ 온라인 채팅
- ✦ 트위터 메시지 혹은 관계망
- ✦ 이메일 패턴
- ✦ presence (at specific location)
- ✦ life history / life-logging

→ Social Visualization try to depict them...



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# Research Group

- ✦ Social Media Group, MIT Media
  - ✦ directed by Judith Donath
  - ✦ <http://smg.media.mit.edu>



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# SMG Projects

- ✦ Early examples of SocialVis
  - ✦ Visual Who
  - ✦ ChatCircles
  - ✦ Loom
  - ✦ Web Fan
  - ✦ PeopleGarden



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- ✦ ... try to show
  - ✦ busy-ness
  - ✦ affinities
  - ✦ arrivals
  - ✦ who's around





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# Visual Who

- ✦ Data 수집
  - ✦ the affiliations are derived from the mailing-list file
  - ✦ data about the logins and idle times comes from the utmp file



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# Visual Who

## ✦ Quick Note: UTMP?

```
[root@localhost test]$ w
 11:43am  up 270 days,  9:25,  3 users,  load average: 3.12, 3.22, 3.24
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
mercy4u    pts/1    s210-205-210-195 11:25am  41.00s  0.09s  0.06s  -bash
root       pts/2    s210-205-210-195 11:43am  18.00s  0.05s  0.05s  -bash
mercy4u    pts/4    s210-205-210-195 11:43am   0.00s  0.06s  0.02s  w
```



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# Visual Who

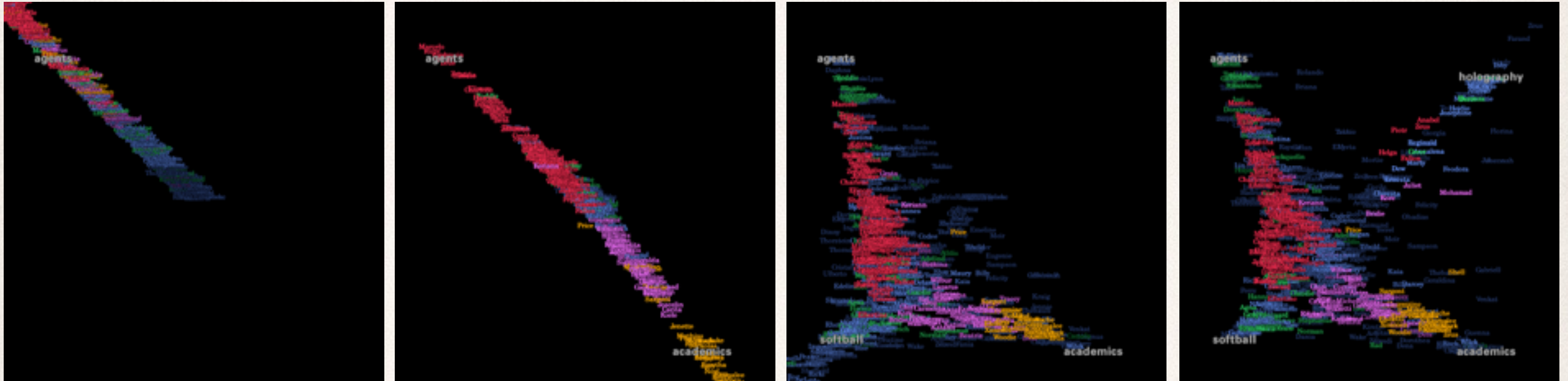
- ◆ Technique

- ◆ 이름과 그룹이름 표시
- ◆ 그룹이름의 위치를 움직이면, 그 그룹에 속해 있는 사람들 역시 그룹의 위치를 따라 움직임
- ◆ 여러 그룹이 표시되면 각각의 그룹에 속하거나 여러 그룹에 속하는 사람들의 위치를 반영함
- ◆ 현재 로그인되어 있는 사람들과 아닌 사람들을 구분해서 보여줌



# Visual Who

## ♦ Patterns of Association



the faculty members are yellow; staff is purple; graduate students are red; undergraduates are green and everyone else is blue

1. **A single anchor** - in this case a research group - has been added. With only one anchor, nearly all the names would eventually end up gathered in that corner.
2. **An anchor representing the Lab's committee on academics** has been added. Note how this anchor has pulled first the faculty members, followed by the staff.
3. **The softball team** is added.
4. **The holography research group** is added.

<http://smg.media.mit.edu/people/Judith/VisualWho/VisualWho.html>



# Visual Who

## ♦ Patterns of Presence



The brightness of a name shows activity - the darkest names have been idle the longest. day.

- 1. Late at night (4 a.m.)** Very few people are logged in and only a couple are active.
- 2. Midday (1 p.m.)** Well over a hundred people logged in, much activity.



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# Issues

- ✦ noisy
- ✦ privacy
- ✦ unix-only



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# Chat Circles

- ✦ Online discussion group

- ✦ 게시판 (web-based bbs)
- ✦ usenet newsgroups
- ✦ 채팅룸

*... and now*

- ✦ 트위터
- ✦ 페이스북
- ✦ 카카오톡

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# Chat Circles

- ♦ Online discussion group
  - ♦ 사람들이 얼마나 참여하는지?
  - ♦ 인터랙션은 어떻게 이루어지는지?
  - ♦ 새로운 참여자를 환영하는지?
  - ♦ 그룹 내에서 전문가 (혹은 오피니언 리더) 는?
- ♦ Social Visualization can answer to these questions.
  - ♦ show patterns, rates, interactions



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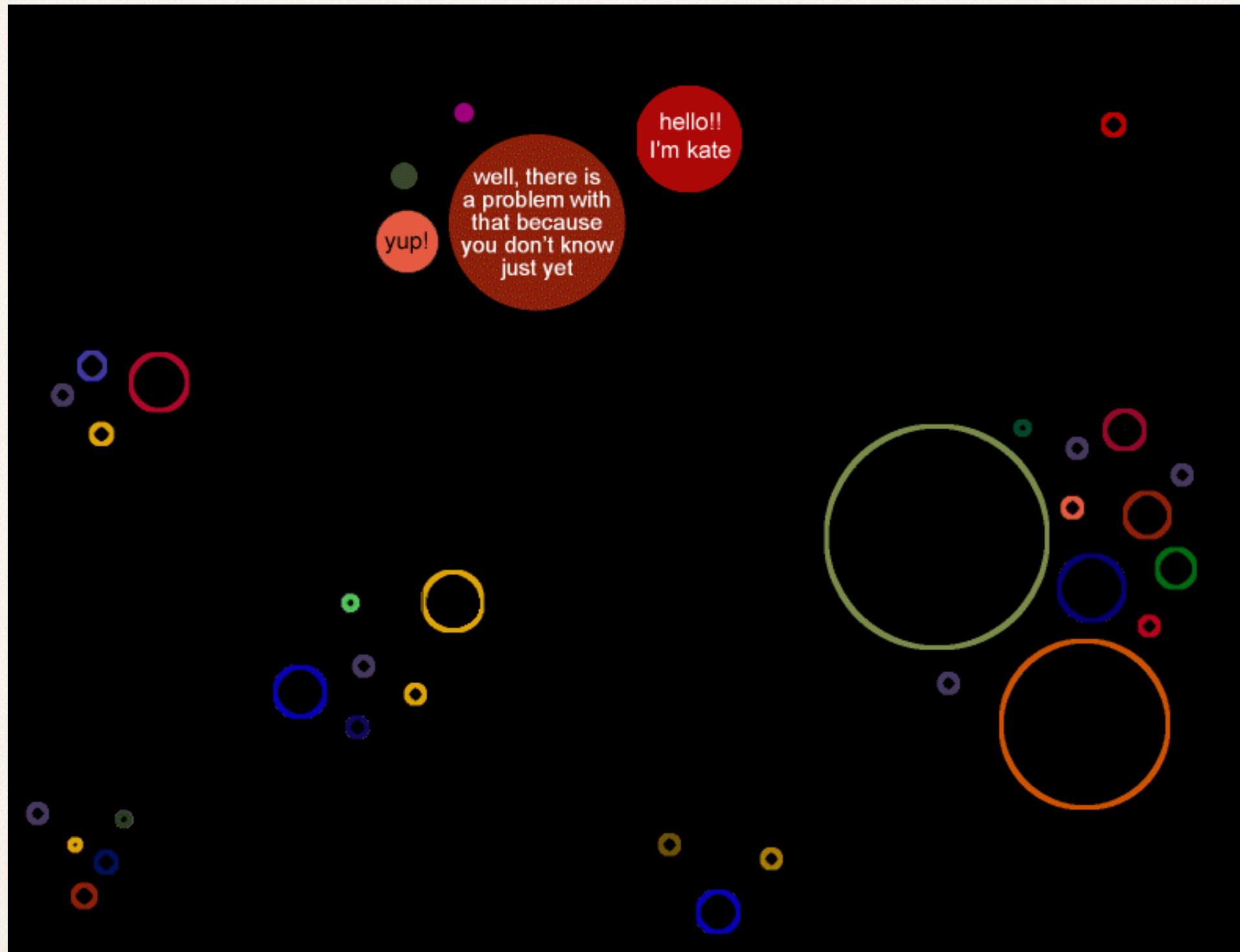
## Chat Circles

- ◆ 채팅방을 위한 Visualization (GUI)
- ◆ 채팅방에 있는 사람들의 presence를 잘 보여줌
- ◆ 얼마나 서로 다른 대화들이 오고가는지를 볼 수 있다
- ◆ cocktail party 를 흉내낸 인터페이스



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# Chat Circles

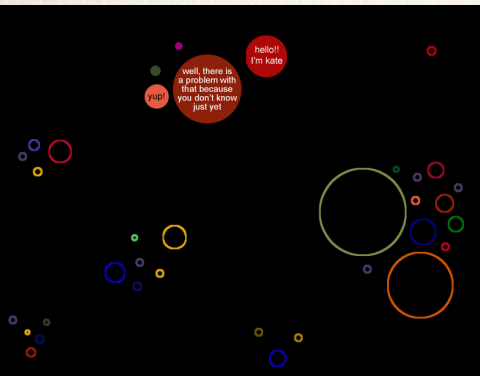


<http://alumni.media.mit.edu/~fviegas/projects/chatcircles/>



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# Chat Circles



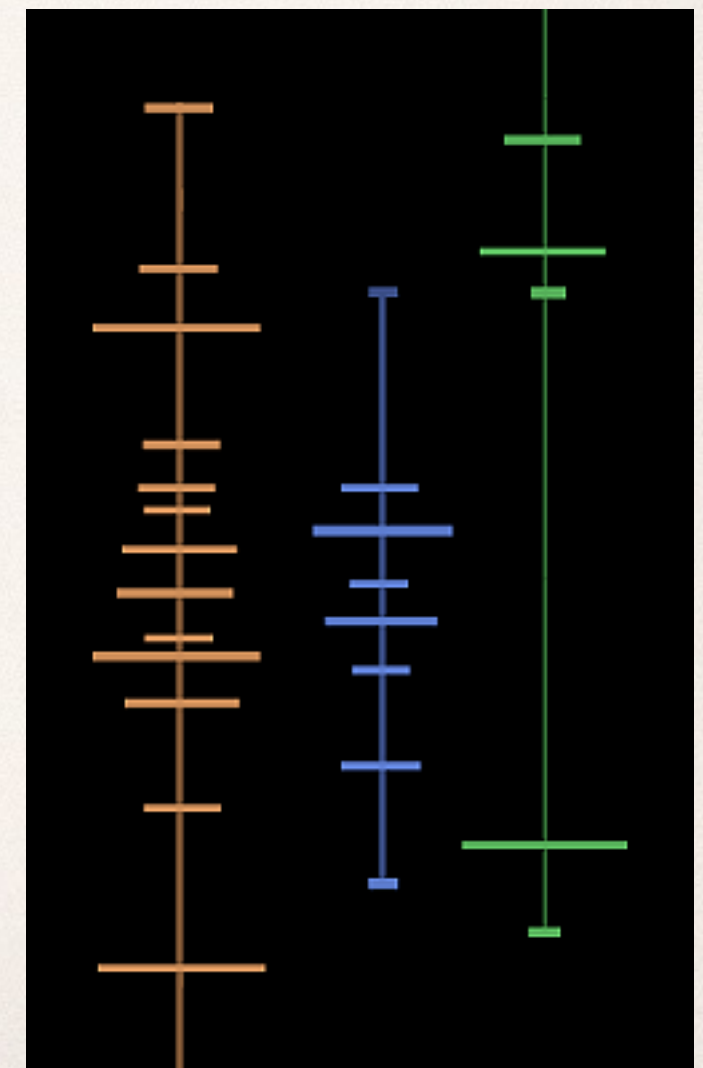
- ✦ 각각의 사람들은 colored circle 로 표현됨
- ✦ circle의 크기는 포스팅된 메시지에 따라 커지고, 메시지가 사라지면서 (idle - 대화를 멈추면서) 서서히 작아짐
- ✦ 연결이 되어 있으면 작은 circle 로 표현됨
- ✦ 코멘트는 circle 내부에 표시
- ✦ 주위에 있을 경우만 “들을 수 (hear, but actually see)”  
있음 - cocktail party



# Chat Circles

- ◆ History Interface

- ◆ x: 사용자, y: 시간
- ◆ tick: posting
- ◆ mouse over: reveal message
- ◆ solid tick: within earshot
- ◆ hollow tick: can't hear





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# Chat Circles

- ✦ Issues
  - ✦ long sentences
  - ✦ text only
  - ✦ screen real-estate



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# PeopleGarden

## ✦ Online Communities

- ✦ 온라인 상에서의 가상의 커뮤니티를 위한 비주얼라이제이션 테크닉
- ✦ 개인의 view와 사회적인 view를 모두 제공
- ✦ 정원과 꽃이라는 메타포를 사용

## ✦ Purpose

- ✦ 온라인 커뮤니티를 방문한 사람들이 커뮤니티 전체와 개개인 참여자들에 대한 신속한 이해를 도모할 수 있도록 함

## ✦ Data

- ✦ 온라인 커뮤니티에 포스팅된 모든 글들



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# PeopleGarden

- ✦ People Flower: Visualizing a User
  - ✦ 가장 기본적인 데이터의 단위: a post → Petal 로 표현
    - ✦ 사람들이 남긴 글 (postings)은 꽃잎(petals)로 표현되고, 시계방향으로 꽃잎을 추가하여 시간에 따른 posting의 숫자를 표현

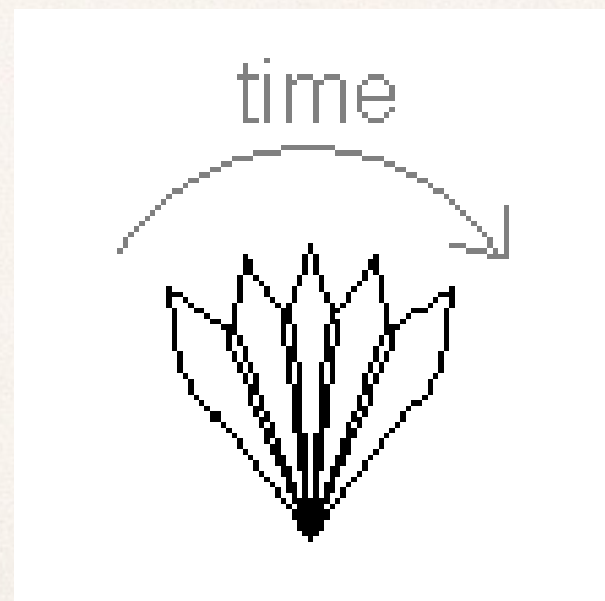


Figure 3. Basic PeopleFlower.



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# PeopleGarden

- ✦ People Flower: Time of Posting
  - ✦ 새로운 글이 포스팅되면 petal이 오른쪽에 하나씩 추가
  - ✦ 좌우 균형을 맞추기 위해 petal이 추가될 때마다 왼쪽으로 조금씩 회전
  - ✦ 포스팅된 시간의 경과여부에 따라 petal의 색이 흐려짐
  - ✦ 인접한 두개의 petal 간의 saturation 의 차이는 포스팅 간의 시간 차를 표현

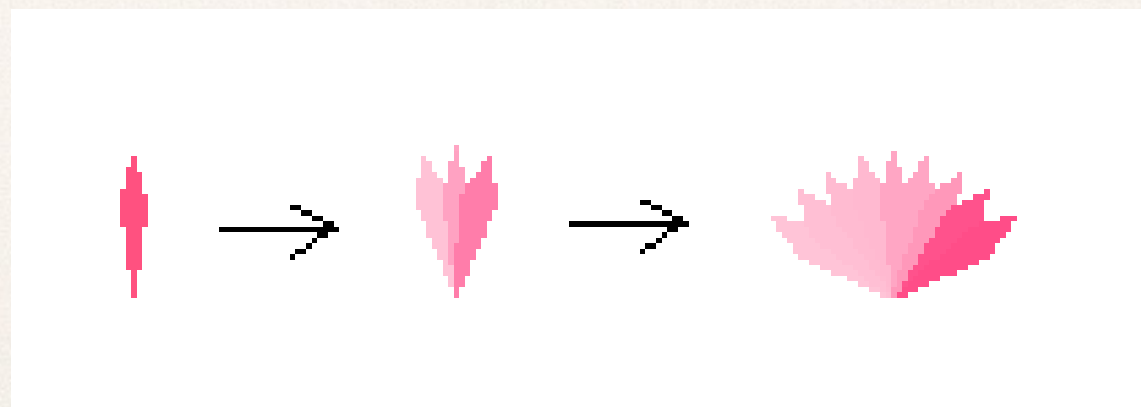


Figure 4. A user's PeopleFlower changes over time.



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# PeopleGarden

- ◆ People Flower: Response to Posting
  - ◆ 각각의 petal 위에 매달린 작은 circle 은 포스팅에 대한 response



Figure 5. Three users with same amount of postings over different durations, and with different amount of responses.



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# PeopleGarden

- ✦ People Flower: Initial Post vs. Reply
  - ✦ Original post와 reply는 색으로 구분

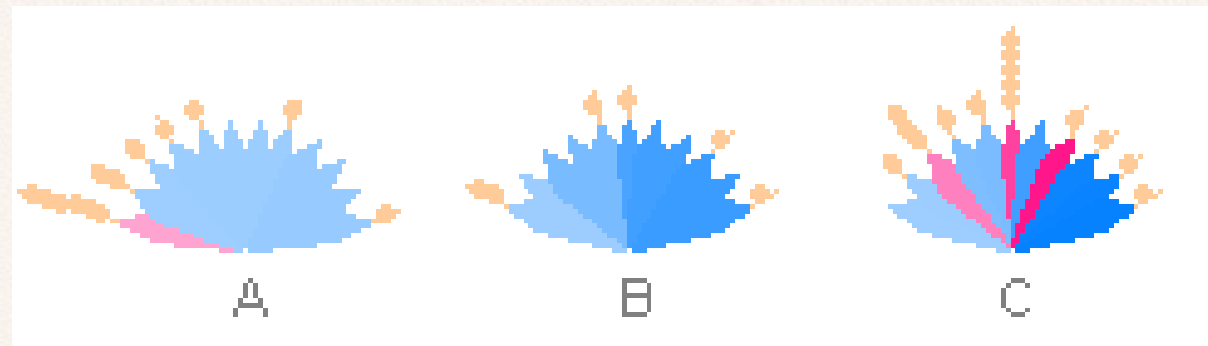


Figure 6. The same three users from Figure 5, this time with magenta representing initial posts, blue replies. (See <http://graphics.lcs.mit.edu/~becca/papers/pgarden> .)



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# PeopleGarden

- ✦ 2개월 간 1200개의 포스팅 데이터를 수집해서 만든 garden
- ✦ 각각의 꽃은 서로 다른 사용자를 의미
- ✦ 높이는 게시판에 있었던 시간

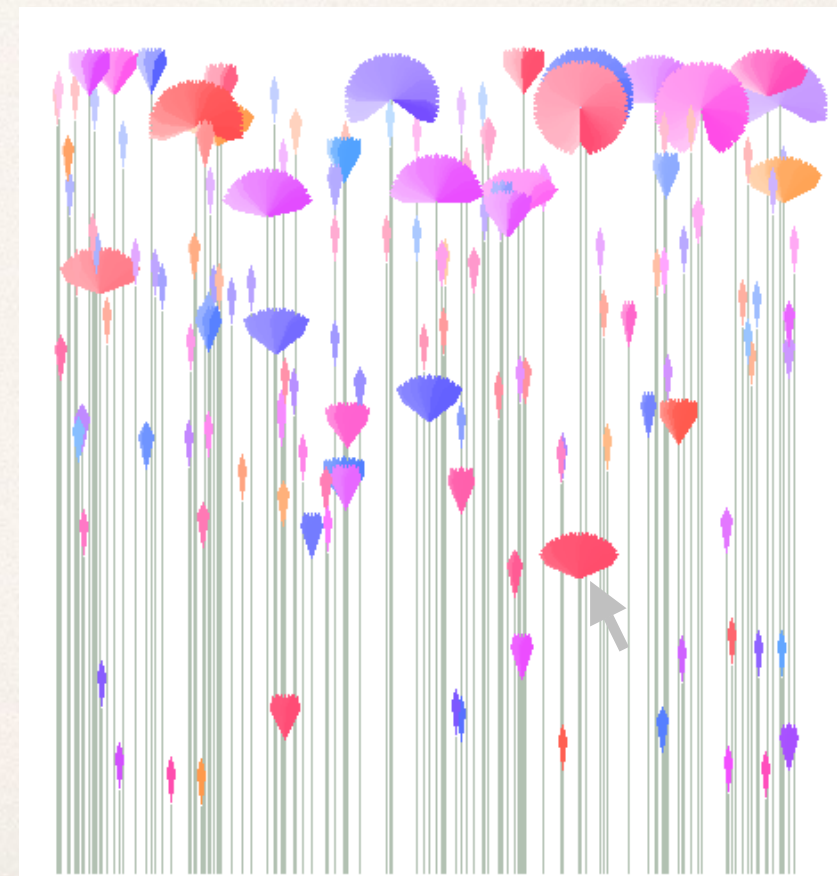


Figure 8. A PeopleGarden showing messages from a message board with 1200 postings over a 2-month period. Height of flower denotes amount of time a user has been at the board.



# PeopleGarden

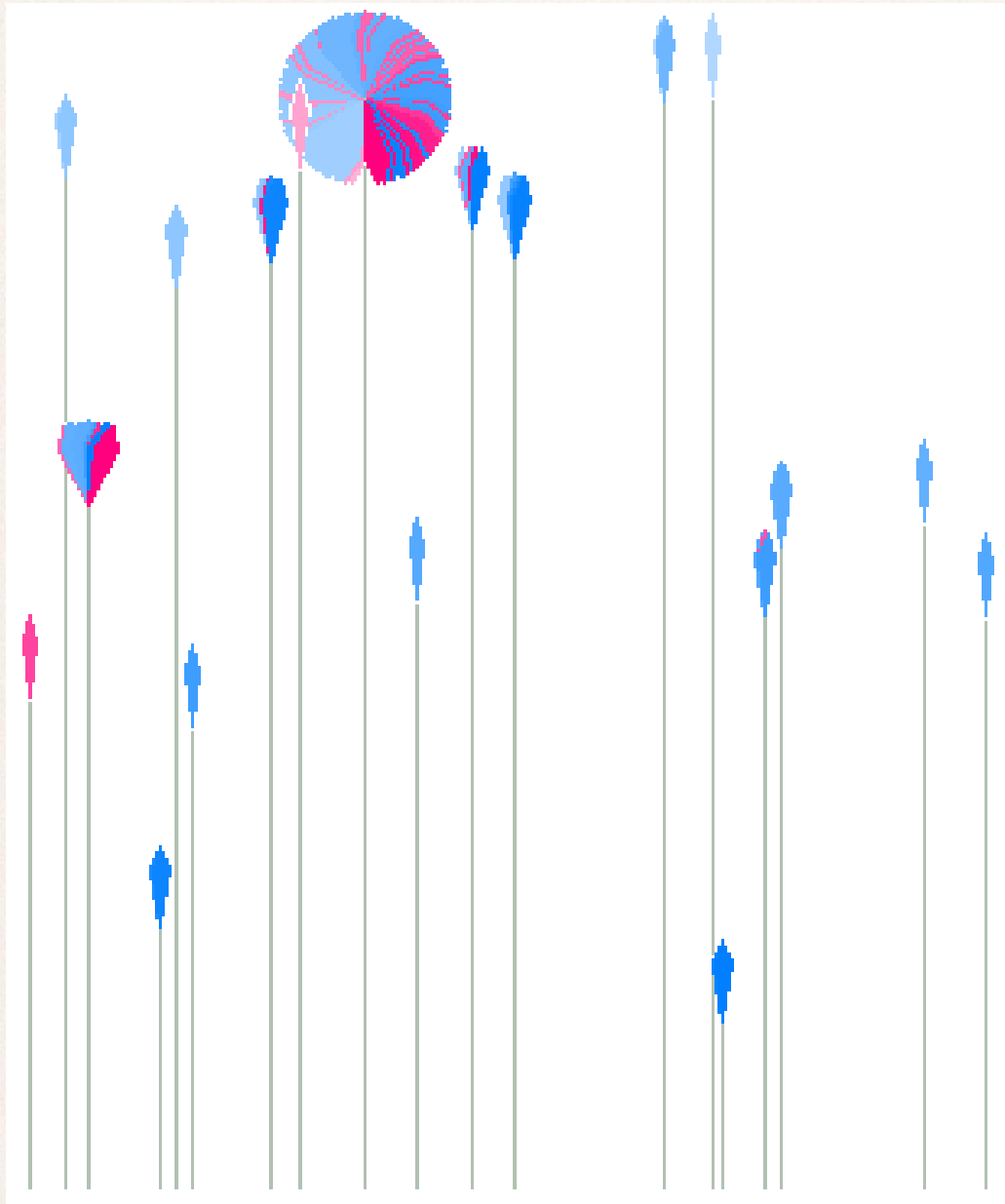


Figure 10 a) A group with one dominating voice (<http://graphics.lcs.mit.edu/~becca/enneagram/movieboard>, July '99) with a large number of replies in blue. Height of a flower denotes how long a user has been at the board.

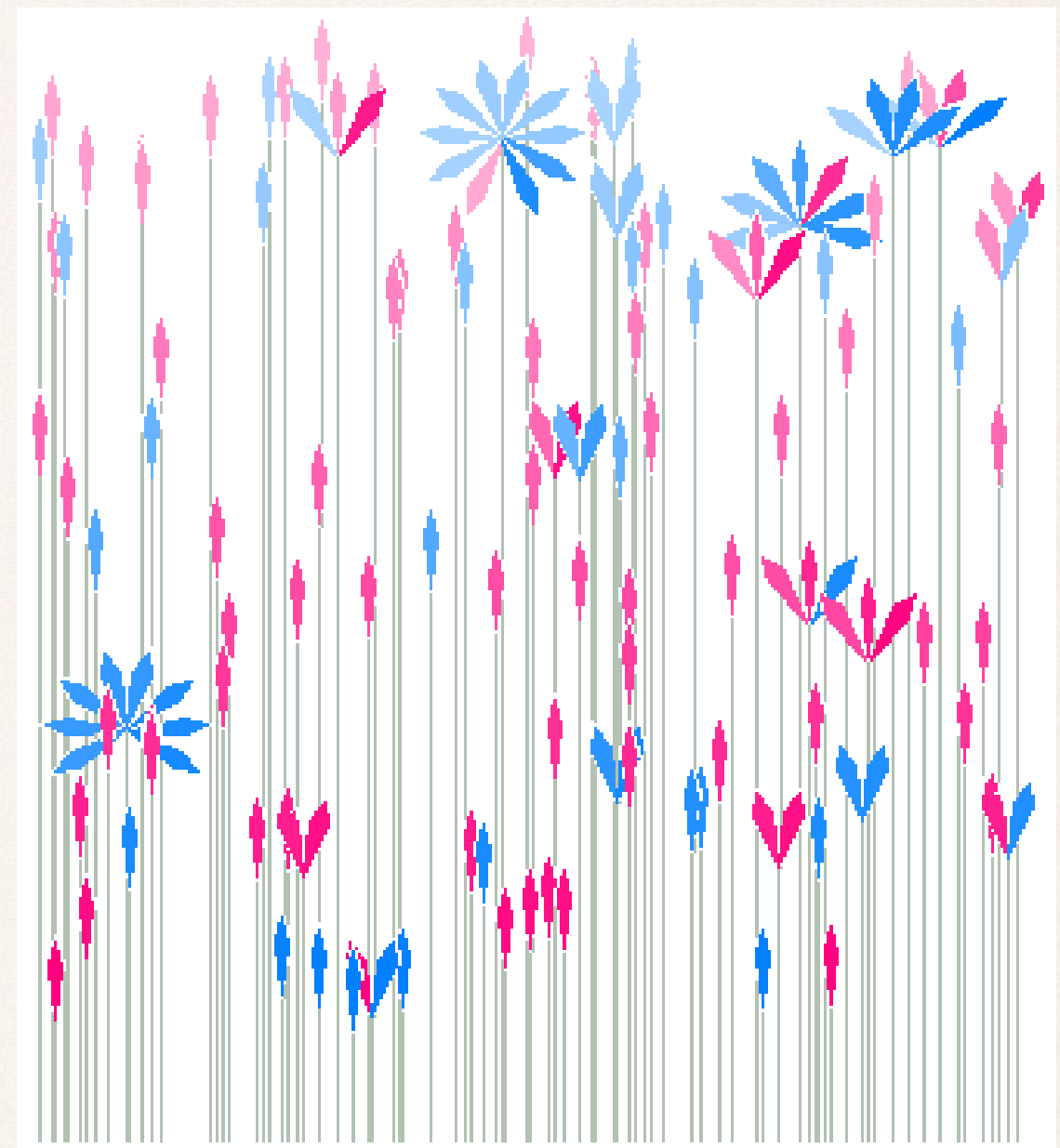


Figure 10 b) A more democratic group (<http://www.usscreen.com/message/general/>, July '99) with a large number of initial posts in magenta. Height denotes how long a user has been at the board.



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# PeopleGarden

- ◆ Discussion

- ◆ 온라인 커뮤니티 데이터를 보여주기에 효과적인 비주얼라이제이션인가?
- ◆ 좋은점?
- ◆ 나쁜점?



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## 일정

- ♦ 다음 주: 팀별 면담
- ♦ 최종 발표: 21일 (팀별 10분 발표)
- ♦ 최종 보고서 제출: 12/31
  - ♦ 보고서의 형식은 자유



**Questions...?**

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