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Facoltà di scienze informatiche

Jopera
Process Support for Web Services

The Mashup Atelier

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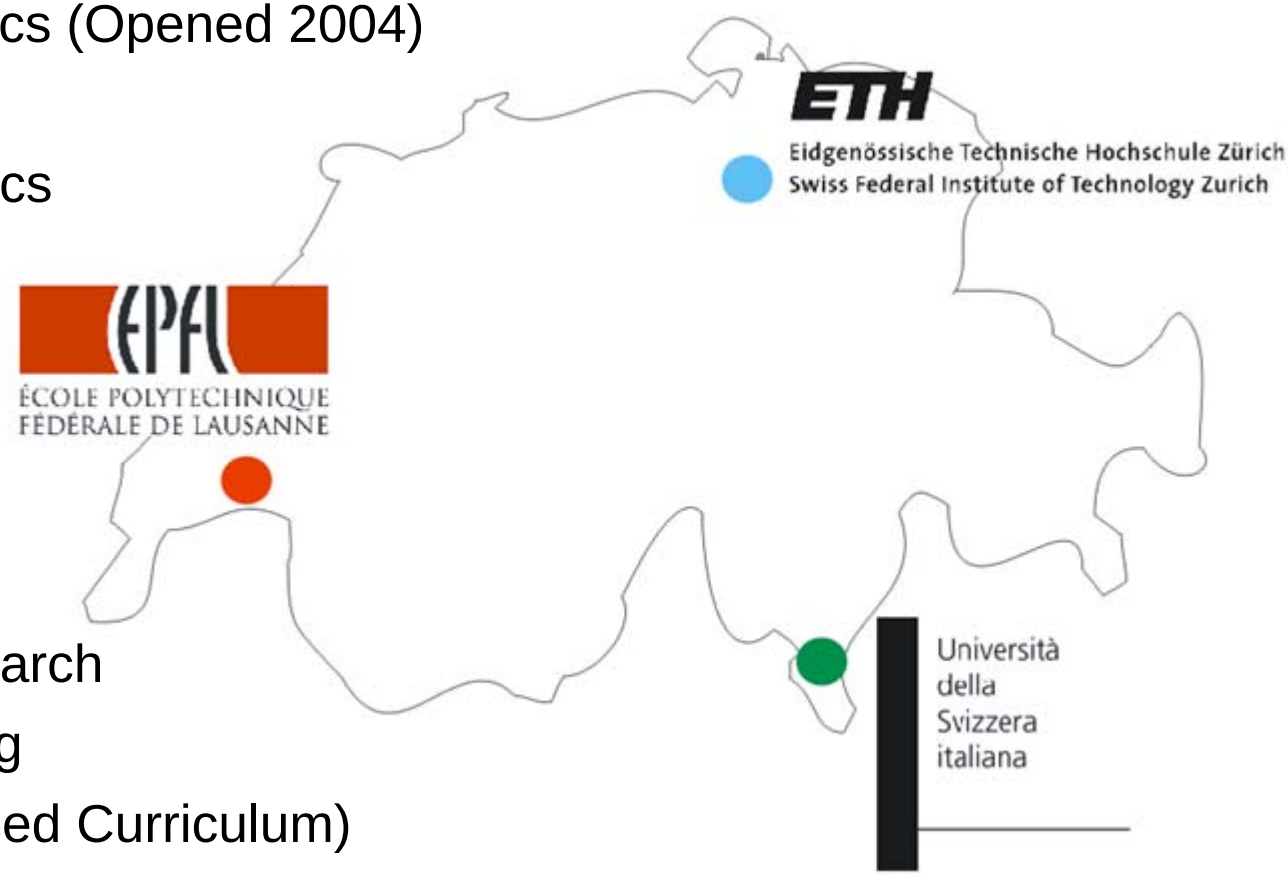
University of Lugano, Switzerland

- Faculty of Informatics (Opened 2004)
- 15 Professors
- 63 PhDs & Post-docs



- Excellence in Research
- Innovative Teaching
  (Atelier Project Based Curriculum)

Motivation

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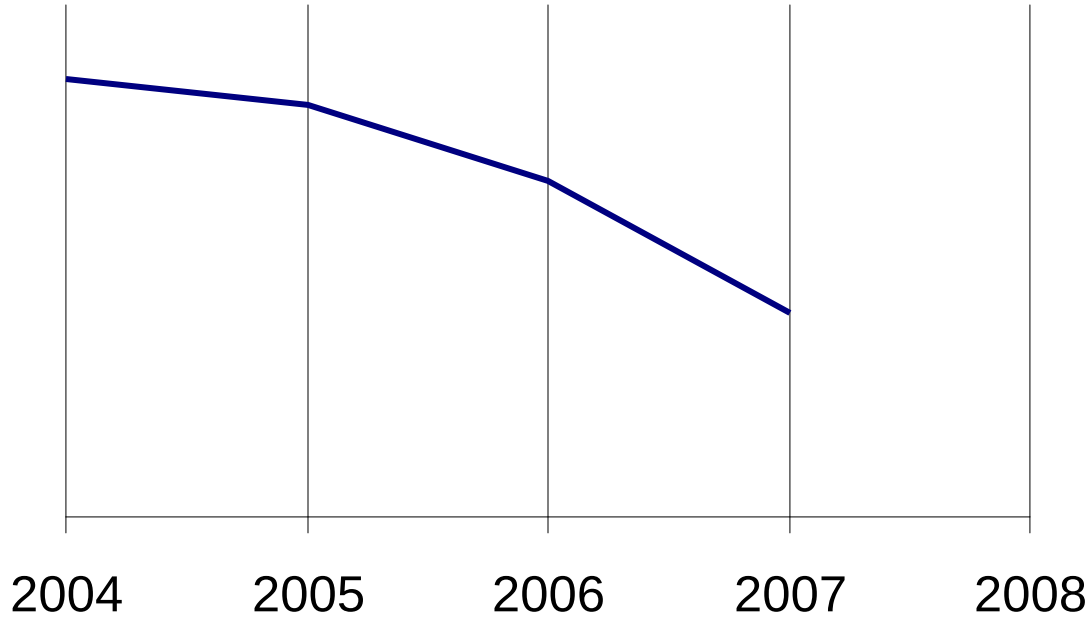
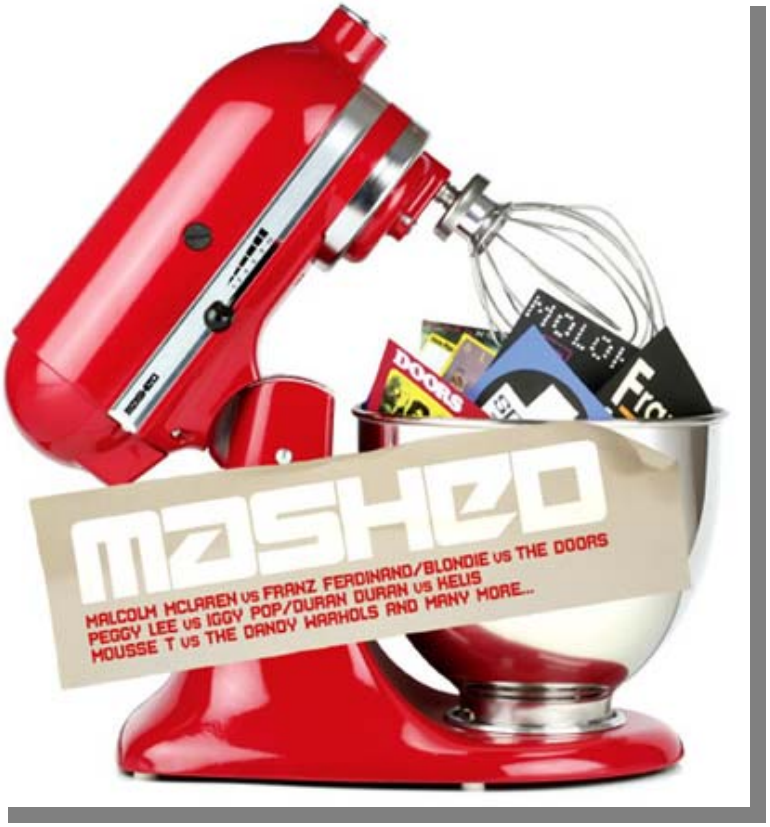
Number of 1st Year Student Registrations for Computer Science in Switzerland



- Can we use Mashups to get students interested in Computer Science?

Agenda

- Motivation
- What is the Mashup Atelier?
- Mashup Examples
- Feedback
  - Overview
  - Positive
  - Constructive
- Discussion



Goals of the Mashup Atelier

1. How quickly can students without programming experience get started building mashups?
2. Get feedback from students on what it takes to build “intuitive” mashup languages and tools
3. Can we use mashup development to get young students interested in computer science?

Structure of the Mashup Atelier (3h)

- Theoretical Introduction to Web 2.0 (30m)
- Mashups: Definition and Examples (15m)
- Tutorial on a visual Mashup tool (20m)
- Challenge exercises (60m)
- Free exploration (30m)
- Feedback Questionnaire (10m)

Mashup Creator

Blocks window:

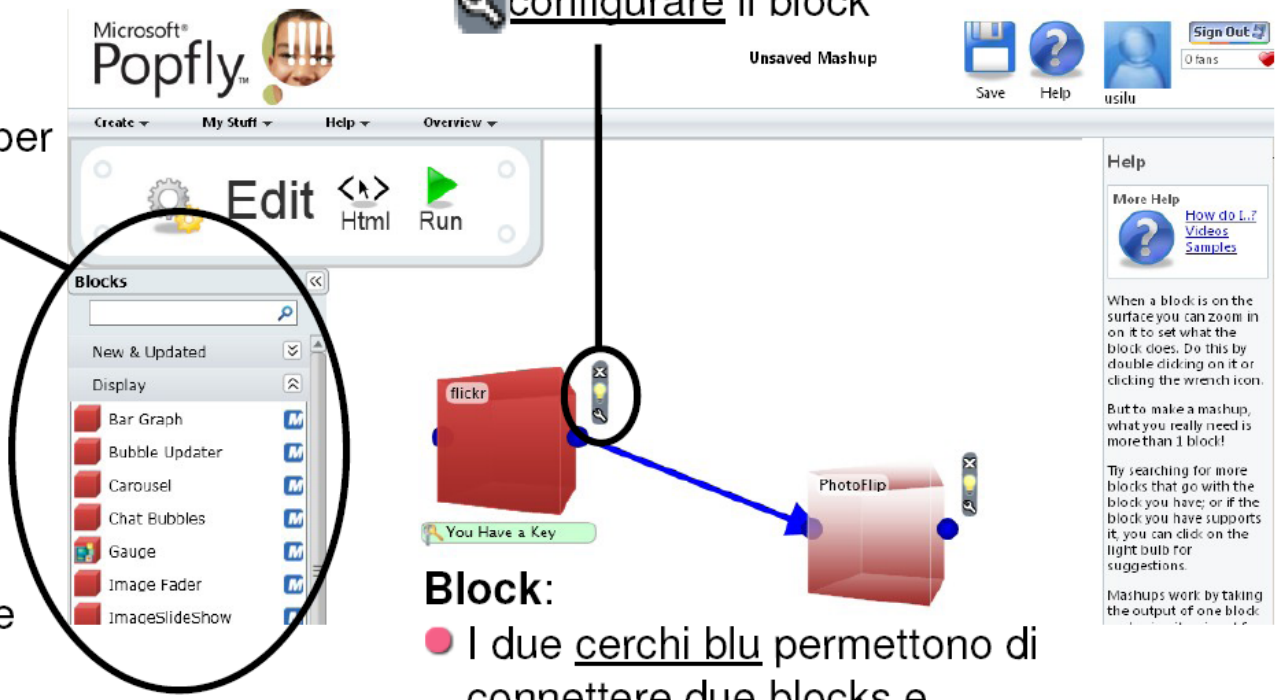
- I blocks rappresentano delle funzionalità (web services, tecnologie, ...)
- I blocks sono suddivisi per categorie

Drag & Drop:

- I blocks possono essere semplicemente selezionati e trascinati nell'area di lavoro

Tre icone:

- cancellare il block
- cercare blocks compatibili
- configurare il block



Block:

- I due cerchi blu permettono di connettere due blocks e rappresentano gli input e gli output della funzione

Why Microsoft PopFly?

- Rich 3D Visual Environment
- Quick Design-Run-Test cycle
- Mature and Stable
- No installation (apart from Silverlight)
- Large block library (with fun display blocks)
- Mashups can be easily shared with friends
- Students can start during the atelier and continue work at home (if they use their MSN accounts)

Tutorial Mashup Exercise

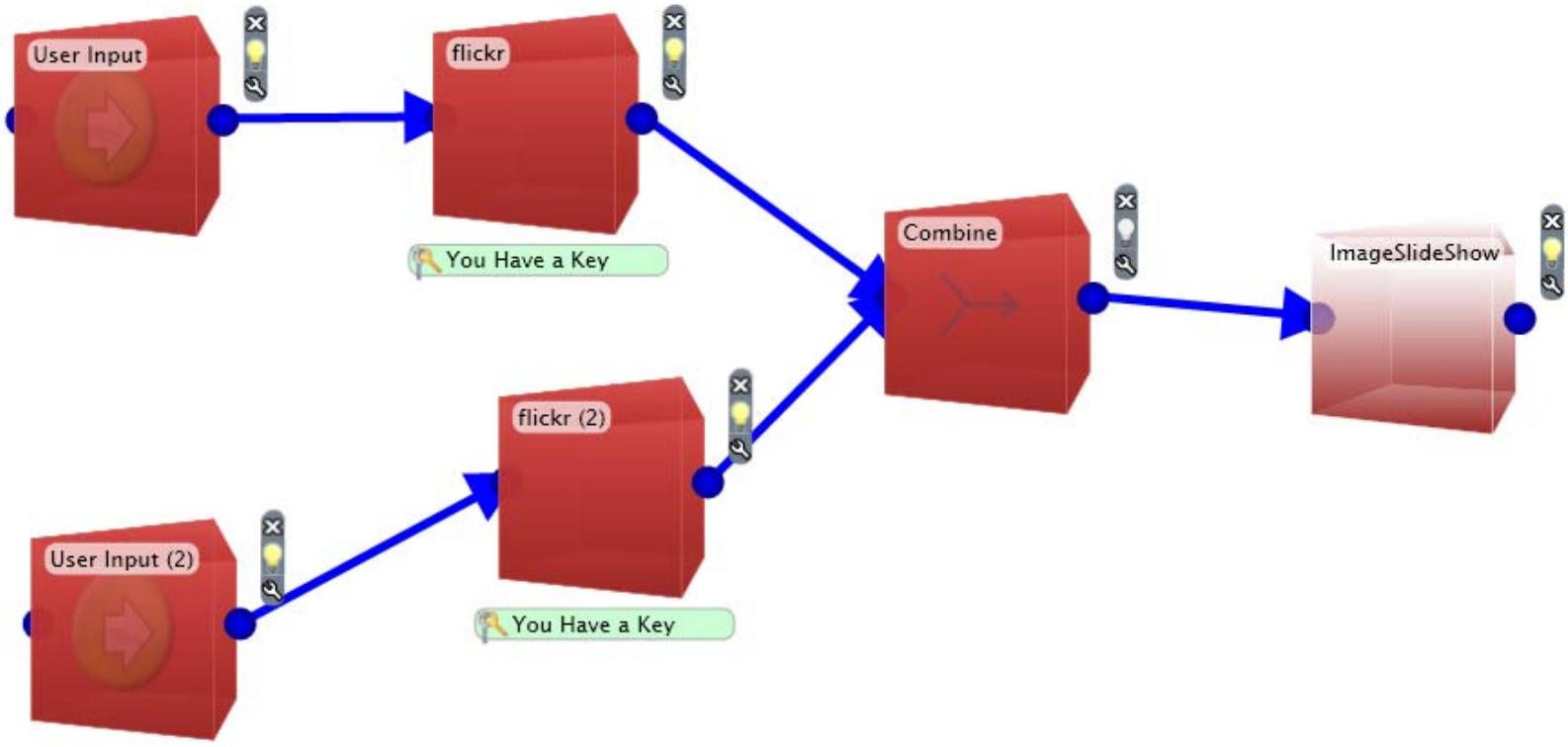
- Search Flickr for pictures of flowers
- Display the pictures on a PhotoFlip widget

Challenges

- Show the pictures on a map
- Let the user choose which images to display
- Combine images from Flickr and Yahoo! Images

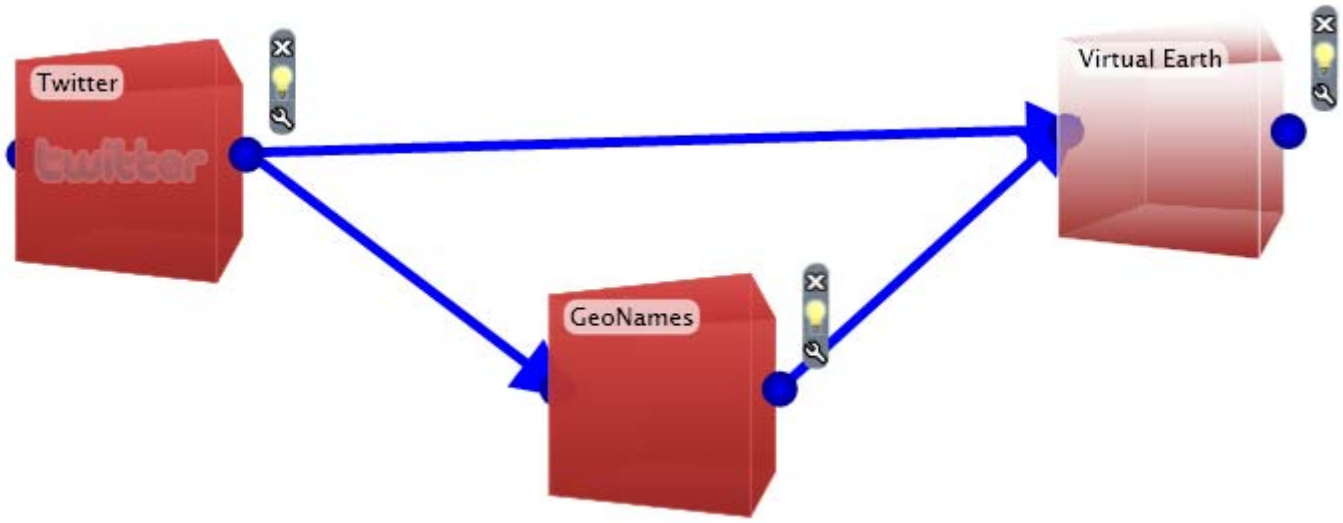
Mashup Examples

- Display slide show of two image topics



Mashup Examples

- Display a twitter feed on the map

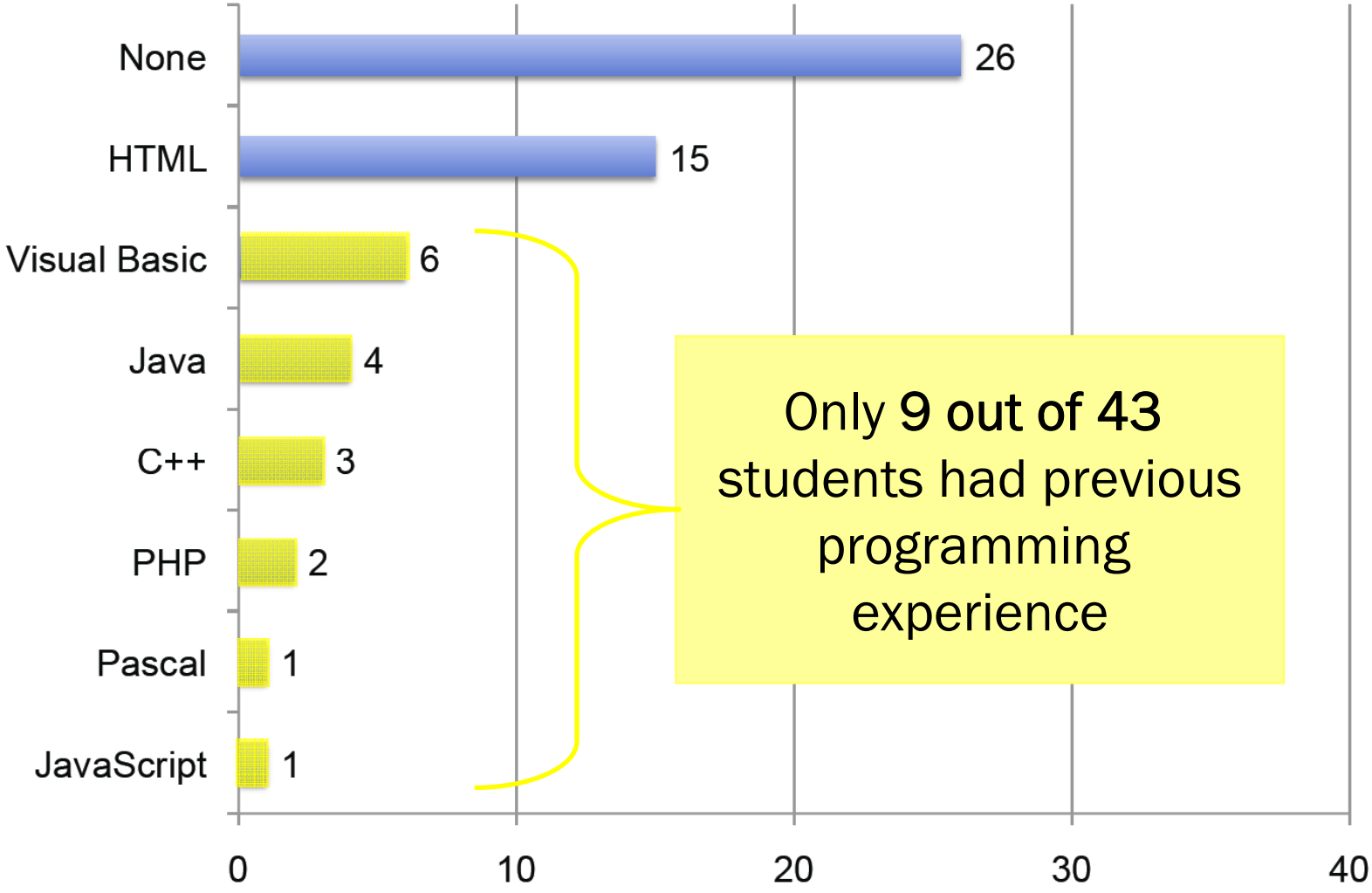


Feedback Questionnaire

1. Are you a member of a social networking site? (Yes/No) If Yes, which ones?
2. Do you know how to program? (Yes/No) If Yes, with which languages?
3. Did you already know what is a 'Mashup' before attending the atelier? (Yes/No)
4. Did you know how to use Microsoft Popfly before attending the atelier? (Yes/No)
5. What was your impression of the mashup development tool? Why?
6. Was the mashup tool intuitive? (Yes/No) Why?
7. What did you like most about the mashup tool?
8. What did you dislike most about the mashup tool?
9. Will you keep using the mashup tool in the future? (Yes/No/Maybe) Why?
10. Overall, are you satisfied about the mashup atelier? (Yes/No) Why?

43 students (Age: 16-21, M:29, F:14)

Programming Experience



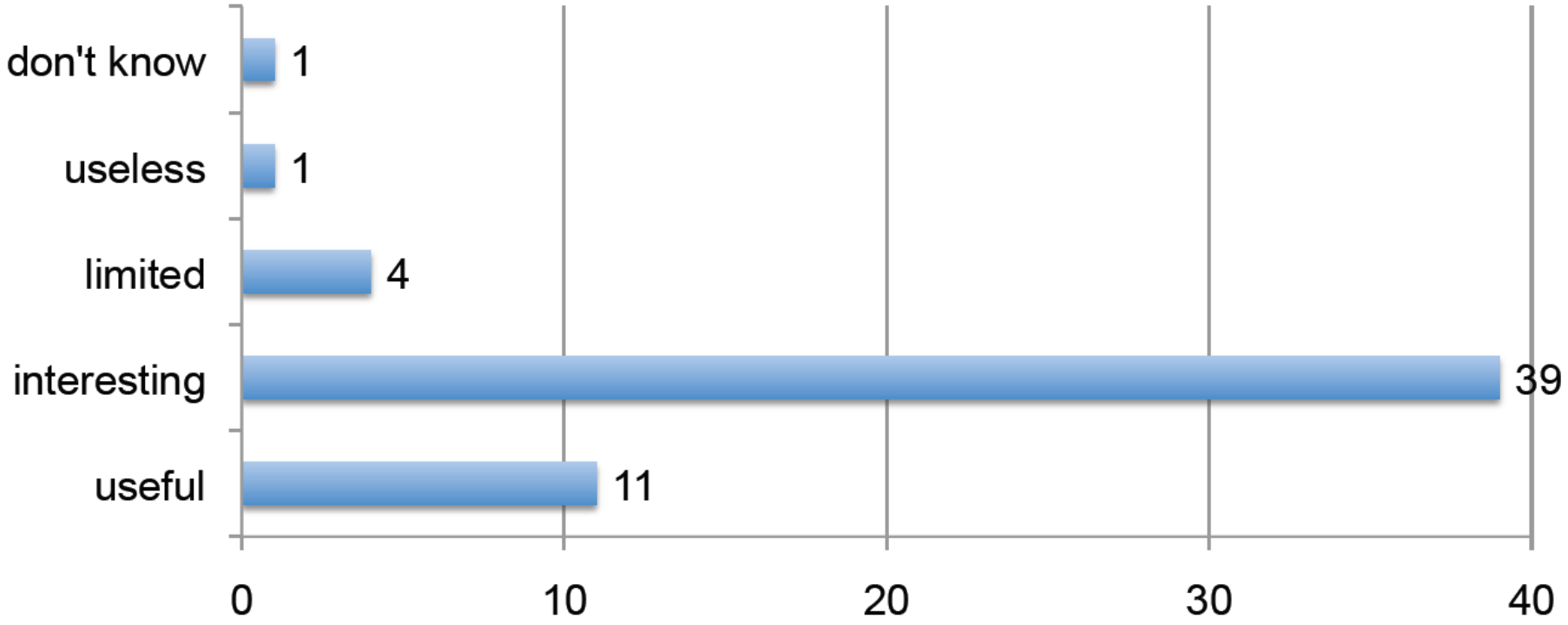
Did you know the term Mashup before today's atelier?

- No

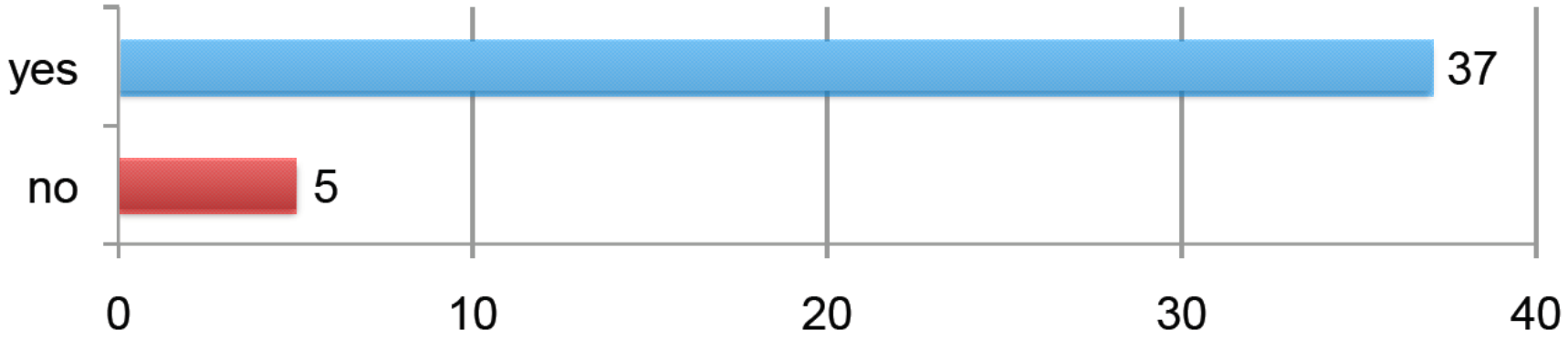
Did you already know how to use Microsoft Popfly before attending the atelier?

- No

Overall Impression



Intuitive?



"I needed to ask for help"
"It is not very interactive"
"It looks rather complicated"
"It was the first time I used it"
"It requires good computer skills"

"Fast trial and error"
"Fun to use"
"Once you understand how to connect the boxes, it is easy"
"It works even if you don't know how to program"

Intuitive, but...

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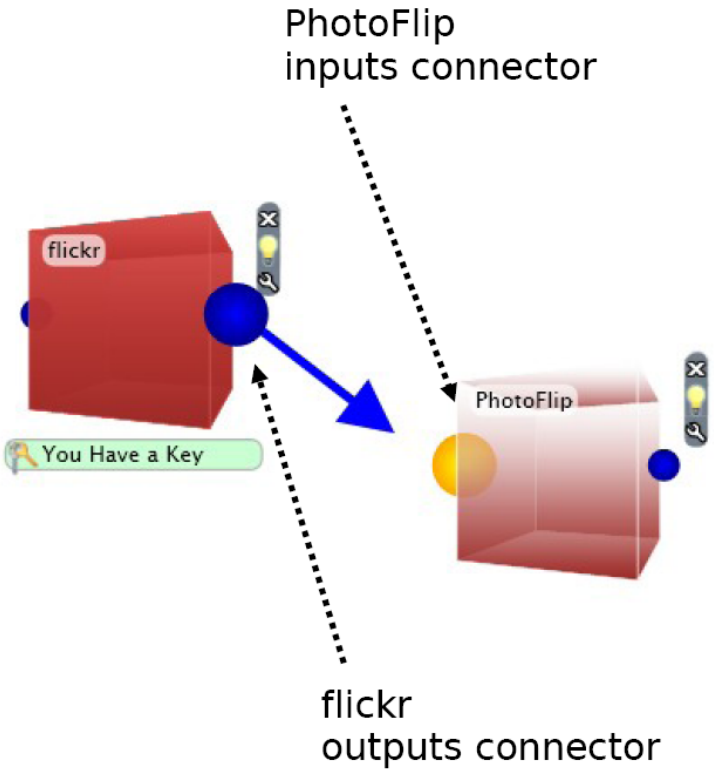
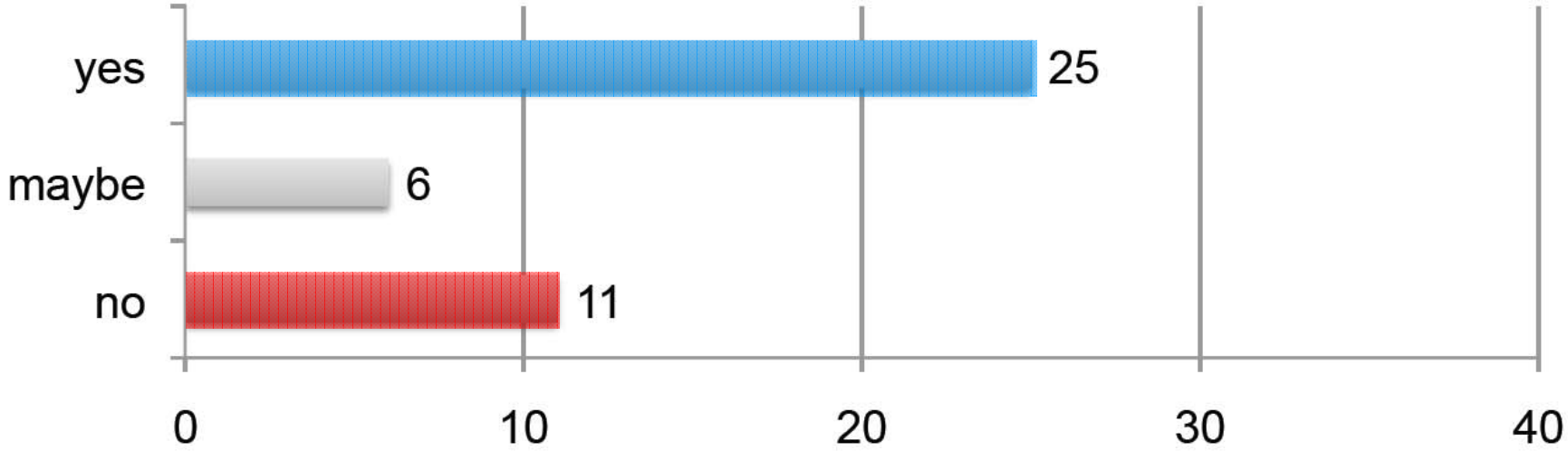
Connettere i blocks



- Ogni block può avere degli input e degli output
- Gli input o parte di loro possono essere dei valori di default
- Gli output possono essere visualizzati oppure passati ad un'altro block come input
- La freccia che collega due blocks trasmette i dati di ouput dell'uno negli input dell'altro

PhotoFlip.input = flickr.output

Keep Using?



"Not interested"
"Myspace is already enough"
"I don't normally use the PC for for this kind of things"

"Interesting" "Useful"
"Cute and Fun"
"Will try to build a photo album for my facebook profile"

Feedback

- Students liked:
  - Producing interesting visualizations of cool pictures
  - Getting control over powerful Web applications (Virtual Earth, Google Maps, Flickr, Twitter) by configuring blocks
  - Posting mashups on their own facebook profile
  - Sharing mashups with friends ("my fan club")
- Students disliked:
  - "Why cannot we have more than one display block?"
  - "Why cannot we hide the Popfly icon?"
  - "How do I get to my own pictures?"

Constructive Feedback – Block Library

- How large should it be?
  - Too many blocks (I am confused)
  - A lot of blocks (I like the choice)
- Accessibility
  - Slide with 10 useful blocks to get started
  - Use automatic suggestion feature to continue

Libreria

Display:

- Bar Graph
- PhotoFlip
- PhotoSphere
- ImageSlideShow

Tools:

- User Input
- Combine
- Filter
- Sort

Maps:

- GeoNames
- Virtual Earth

Images:

- flickr
- Image Comment
- Yahoo! Images
- Image Scraper

News & RSS:

- RSS
- News Reader
- News Updater

Constructive Feedback – Block Library

- How large should it be?
  - Too many blocks (I am confused)
  - A lot of blocks (I like the choice)
- Accessibility
  - Slide with some useful blocks to get started
  - Use automatic suggestion feature to continue
- Registration Keys
  - Configuring blocks with registration keys is a pain
- Customization
  - Impossible for the students to program their own blocks

Constructive Feedback – Environment

- Visual Language
  - 3D Look and Feel was not “noticed”
  - Solving design-time errors required explanation
  - Run-time testing required to spot incorrect data flow connections
- Mashup Design Methodology
  - Bottom-up Composition works well (play with available blocks)
  - Top-down Decomposition did not always work (due to missing, or hard-to-find blocks)

Discussion

1. How quickly can students without programming experience get started building mashups?

   Yes, they can do it (Less than 2 hours)

2. Get feedback from students on what it takes to build “intuitive” mashup languages and tools

   Initial 20 minute training is important

3. Can we use mashup development to get young students interested in computer science?

Outlook

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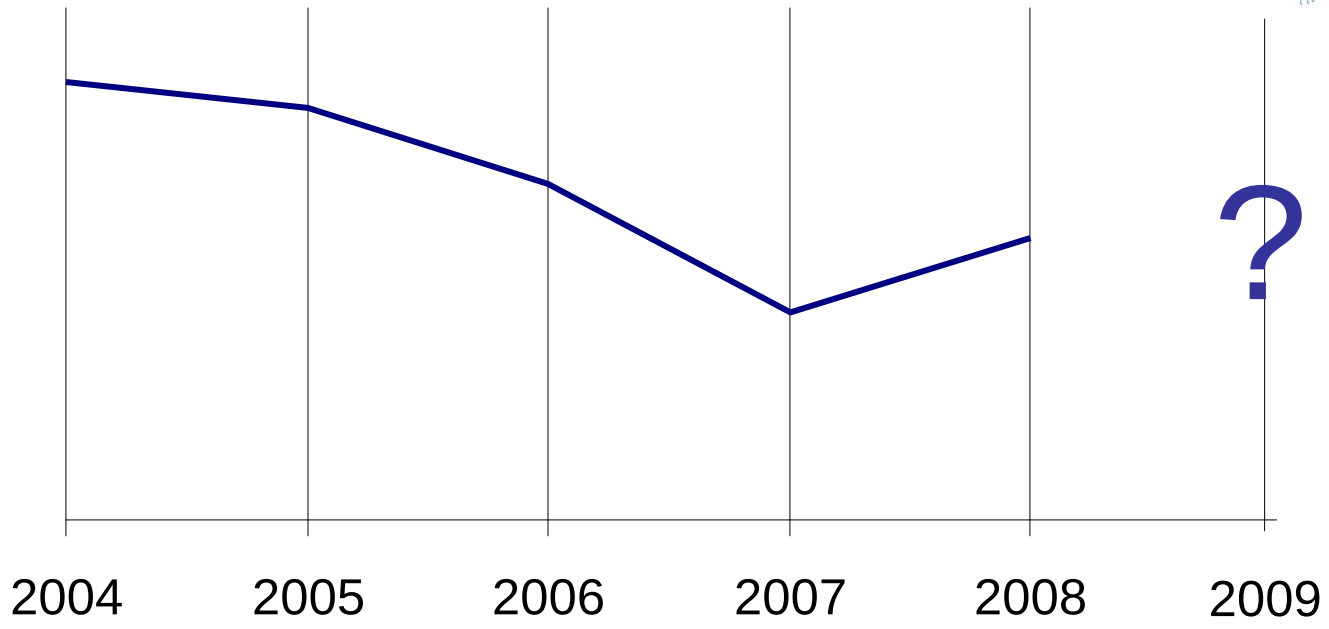

- Too early to tell, but some students attending the mashup atelier were interested in studying CS

Conclusion

- The Mashup Atelier is about using Mashup development to attract young students into studying computer science
- The Mashup Atelier helped us get valuable usage feedback from young high school students without programming experience towards improving the design of “intuitive” mashup languages and environments

The Mashup Atelier

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