Coding Pirates

Teaching kids programming, IT-creativity and modern tech

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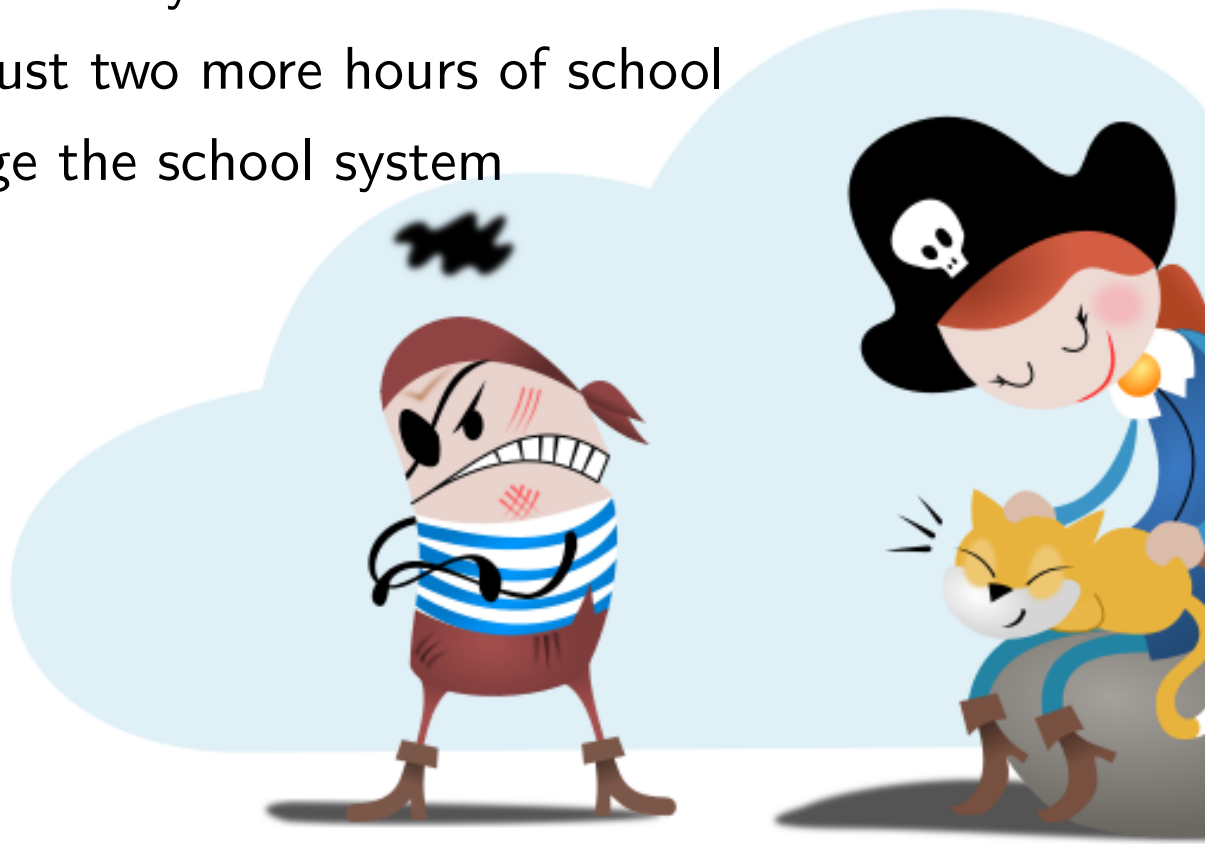
Overview

- What is Coding Pirates?
  - Who are Coding Pirates?
  - The Coding Pirates philosophy
- Coding Pirates in practice
  - Scratch
  - ... and other technologies
  - Showcase of projects
  - Difficulties ahead
  - The Coding Pirates Community
- Computing in schools
- DIKU's involvement

What is Coding Pirates?

- Activity for kids aged 7-17 years
- A playground - not just two more hours of school
- An attempt to change the school system



Who are Coding Pirates?

- Non-profit organisation
- +250 volunteers at Coding Pirates network
- ∼700 paying members
- 24 hubs in Denmark
- additional 6 hubs from January 2016

Image with kids!

Partners

- Center for Teaching Development and Digital Media, Aarhus University
- Department of Computer Science, University of Copenhagen
- The libraries
- Microsoft
- The Danish IT Industri Association
  - Computerworld
  - Canon
  - CapGemini
  - NNIT
  - ...

The Coding Pirates philosophy

> *"The problems now faced by mankind are largely due to man's own creativeness. Creativeness will need to account for much more if present problems are to be transcended with solutions".*
>
> *- Preface of "Explorations in Creativity", Editors: Ross L. Mooney, Taher A. Razik*

Manifesto: http://codingpirates.dk/manifesto/

A normal day at Coding Pirates

Scratch

Scratch 4 Arduino

Other technologies used

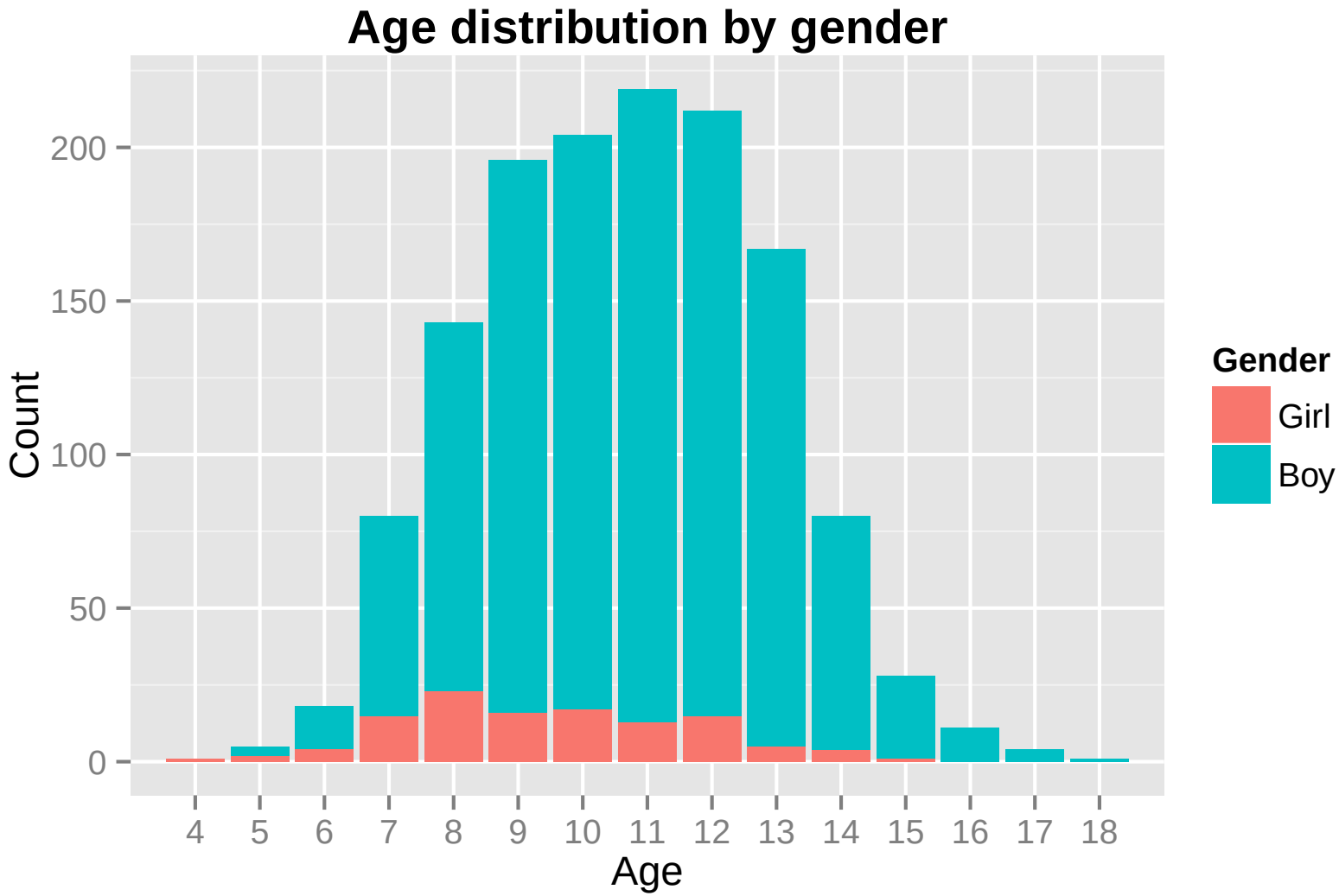
find logos

- Processing(.js) via KhanAcademy
- Arduino
- Blender (3D modelling)
- Unity (2D and 3D games)
- LEGO Mindstorms and LEGO WeDo (expensive)
- littleBits (expensive)

Difficulties identified

- Few from age 14 and up
- Few girls
- Fostering friendships is hard, but important
- Further education of volunteers

Age and gender (including waiting list)



Volunteer community

Computing in schools

> *"The computer is the Proteus of machines. Its essence is its universality, its power to simulate. Because it can take on a thousand forms and can serve a thousand functions, it can appeal to a thousand tastes."*
>
> *- Seymour Papert, in Mindstorms*

We can already use this when teaching e.g. history, biology, chemistry, or language classes!

- Make a game that teaches grade $N-1$ about photosynthesis
- Make a game that teaches grade $N-1$ about life in ancient Rome
- Make an interactive story that tells the story XYZ

More fun than a poster or a written report!

But what do we want schools to teach?

- Teach computing as a discipline, e.g. like math
  - Algorithms vs. data
  - Systematic problem solving
  - Computational thinking
- Teach computing as a craft/skill, e.g. like woodwork
  - Focus on creation and tools
  - Creative and reflective thinking
- As a separate discipline or inside other classes?

Why does a university use time teaching tweens and teens?

- The teachers needs our expertise
- Defining how computing should be taught in Schools
- Potential research areas
- Teacher education and re-education
- Because we have connections to potential volunteers (e.g. alumni)
- Good publicity and great advertisement

Links

- Coding Pirates website: http://codingpirates.dk
- Manifesto: http://codingpirates.dk/manifesto/

Coding Pirates in Gothenburg?