



Stichting NIOC

Stichting NIOC en de NIOC kennisbank

Stichting NIOC (www.nioc.nl) stelt zich conform zijn statuten tot doel: het realiseren van congressen over informatica onderwijs en voorts al hetgeen met een en ander rechtstreeks of zijdelings verband houdt of daartoe bevorderlijk kan zijn, alles in de ruimste zin des woords.

De stichting NIOC neemt de archivering van de resultaten van de congressen voor zijn rekening. De website www.nioc.nl ontsluit onder "Eerdere congressen" de gearchiveerde websites van eerdere congressen. De vele afzonderlijke congresbijdragen zijn opgenomen in een kennisbank die via dezelfde website onder "NIOC kennisbank" ontsloten wordt.

Op dit moment bevat de NIOC kennisbank alle bijdragen, incl. die van het laatste congres (NIOC2025, gehouden op donderdag 27 maart 2025 jl. en georganiseerd door Hogeschool Windesheim). Bij elkaar zo'n 1500 bijdragen!

We roepen je op, na het lezen van het document dat door jou is gedownload, de auteur(s) feedback te geven. Dit kan door je te registreren als gebruiker van de NIOC kennisbank. Na registratie krijg je bericht hoe in te loggen op de NIOC kennisbank.

Het eerstvolgende NIOC vindt plaats op 18 maart 2027 in Arnhem en wordt georganiseerd door HAN University of Applied Sciences.

Reacties over de NIOC kennisbank en de inhoud daarvan kun je richten aan de beheerder:

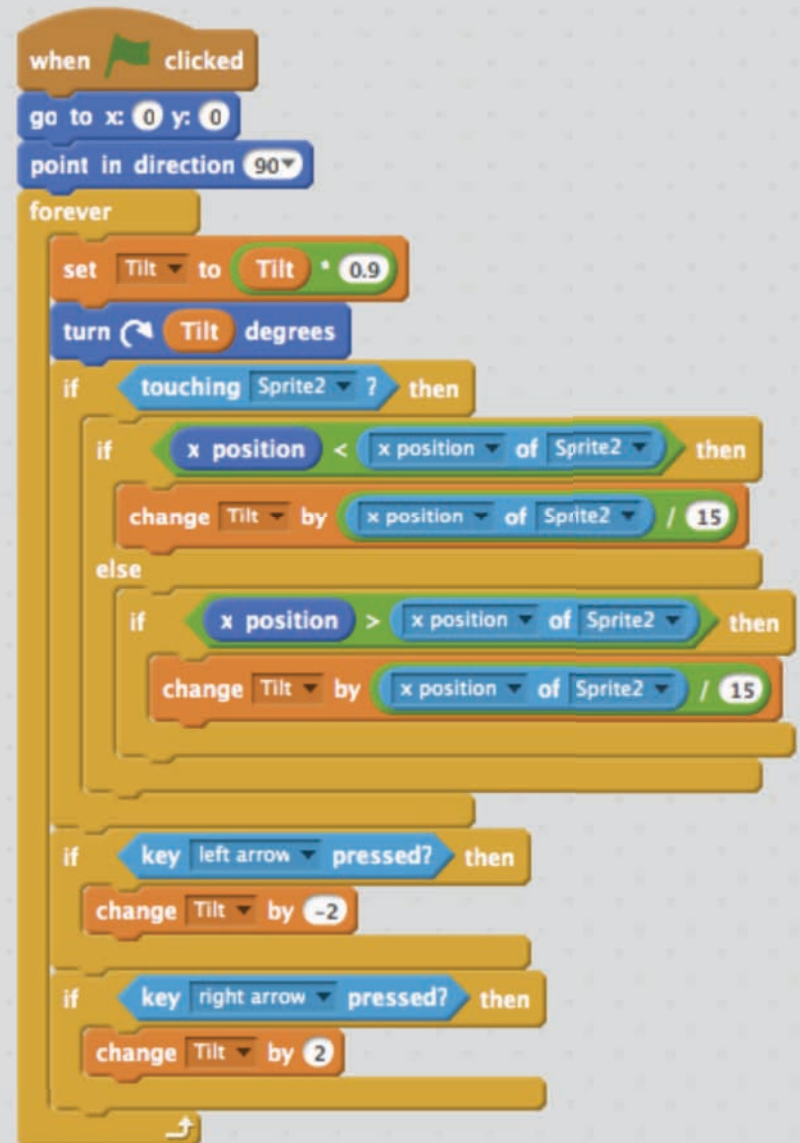
R. Smedinga kennisbank@nioc.nl.

Vermeld bij reacties jouw naam en telefoonnummer voor nader contact.

Computational Creativity:

How New Tools and
New Communities Support
Young People as Designers
of Interactive Media

Karen Brennan
Harvard University
CSERC 2013



Plan for today

1. What's the problem
2. What's been done
3. What's next

a workshop for teens





**consumers,
not creators**

Everyday life is increasingly regulated by complex technologies that most people neither understand nor believe they can do much to influence.

Bandura, 2001

code

We cannot afford to ignore code or allow it to remain the exclusive concern of computer programmers and engineers.

Hayles, 2005

Programming is the sweet spot, the high leverage point in a digital society.

If we don't learn to program, we risk being programmed ourselves.

Rushkoff, 2010

The 4th R ...
provides an alternative to fact-based mastery
and proposes, instead, iterative, process-oriented,
constructive, innovative thinking.

Davidson, 2012

**not just for
some kids**

ALL kids

**Everyone should learn
how to read and write
our computational world.**

**But how can we support
young people's participation
as computational creators?**



SCRATCH



File Edit Share Help



Motion

Control

Looks

Sensing

Sound

Operators

Pen

Variables



Sprite1



x: 0

y: 0

direction: 90

Scripts

Costumes

Sounds

move 10 steps

turn 15 degrees

turn 15 degrees

point in direction 90

point towards

go to x: 0 y: 0

go to

glide 1 secs to x: 0 y: 0

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

☐ x position

☐ y position

☐ direction



New sprite:



x: -193 y: 77



Sprite1



Stage



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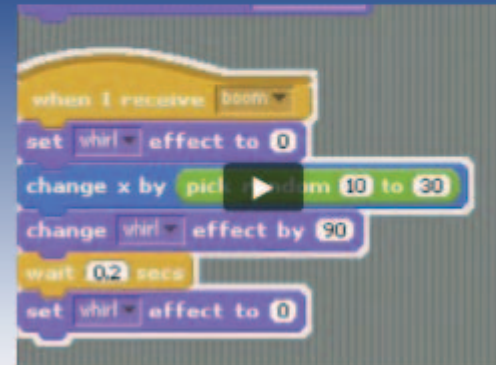
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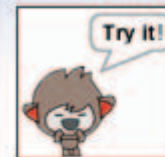


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by [gobo](#)



[Make your own e...](#)
by [rootsroirol](#)

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Learn how to fly



Rainbowanimat... shared it 1 month, 3 weeks ago [Some rights reserved](#)

Based on [lilyo11's project](#)

2216 views, [9 taggers](#), 142 people love it, [9 remixes](#) by 9 people, 413 downloads, in [13 galleries](#)



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[Flag as inappropriate?](#)

Download this project!



Download the 16 sprites and 102 scripts of "[Learn how to fly](#)" and open it in [Scratch](#)



Project Notes

Part two: [\(link to project\)](#)

Featured!! Thanks so much scratch team!

Play in flash!
Part two coming soon
So this is a collab game I made with lilyo11, she did the scripts and I did the sprites :)

Original notes: omg im soo happy i got this project i said i was gonna get this done soon in my update!!!! project but then i had some problems and bugs wit the game so i fixed it :D the project is made by me and my friend named Rainbowanimation it took me a while to get everything together i might think about making a second part with Rainbowanimation anyway.... plz lov fav and comment :)

Tags

SCRATCH



File Edit Share Help



Motion

Control

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Sound

Operators

Pen

Variables

move 10 steps

turn 15 degrees

turn 15 degrees

point in direction 90

point towards

go to x: 195 y: -8

go to

glide 1 secs to x: 195 y: -8

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

x position

y position

direction



beaver



x: -15 y: -90 direction: 90

Scripts

Costumes

Sounds

when green flag clicked

hide

when I receive start

forever if level = 5

show

glide 2 secs to x: 128 y: -86

point in direction 90

glide 1 secs to x: -47 y: -91

point in direction -90

when I receive start

forever if level = 6

hide

when I receive start

forever if level = 8

show

go to x: 195 y: -8

when I receive start

forever if level = 9

hide

Learn how to fly



New sprite:

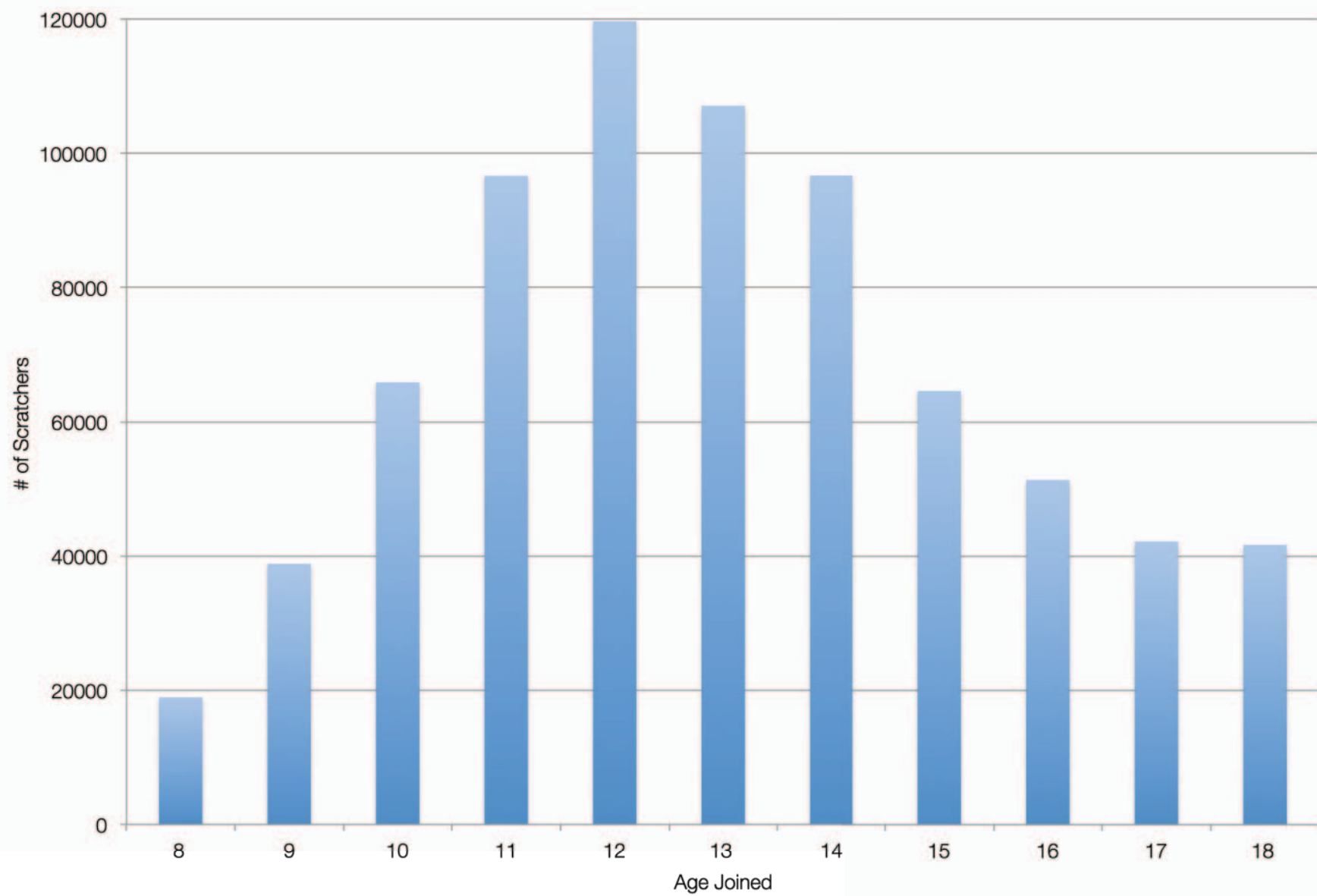


x: 242 y: 108

by... start instruct... back portal bunny bird

snake turtle snake 2 beaver Sprite1 Sprite3 snake 3

Stage Sprite4 Sprite2





3,225,784

projects shared?

**What's interesting about
the learning experience?**

**creating
connecting**

creating
connecting

High Ceiling



Low Floor

High Ceiling

Wide Walls

Low Floor



“

It's really great to express yourself creatively.
You could do anything with it.
You can make video games, music, art, videos,
anything.
The possibilities are endless, no limitations,
really.

”

Lindsey, 12 years old

Click on the boxes to hear the jokes

#1



#3

#2



Main Menu



My Art

Art piece1

Art piece2

Art piece3

Art piece4

Rightside

Down



4

START



A



B



C



D



E



F



G



H



I



J



K



L



M



N



O



P



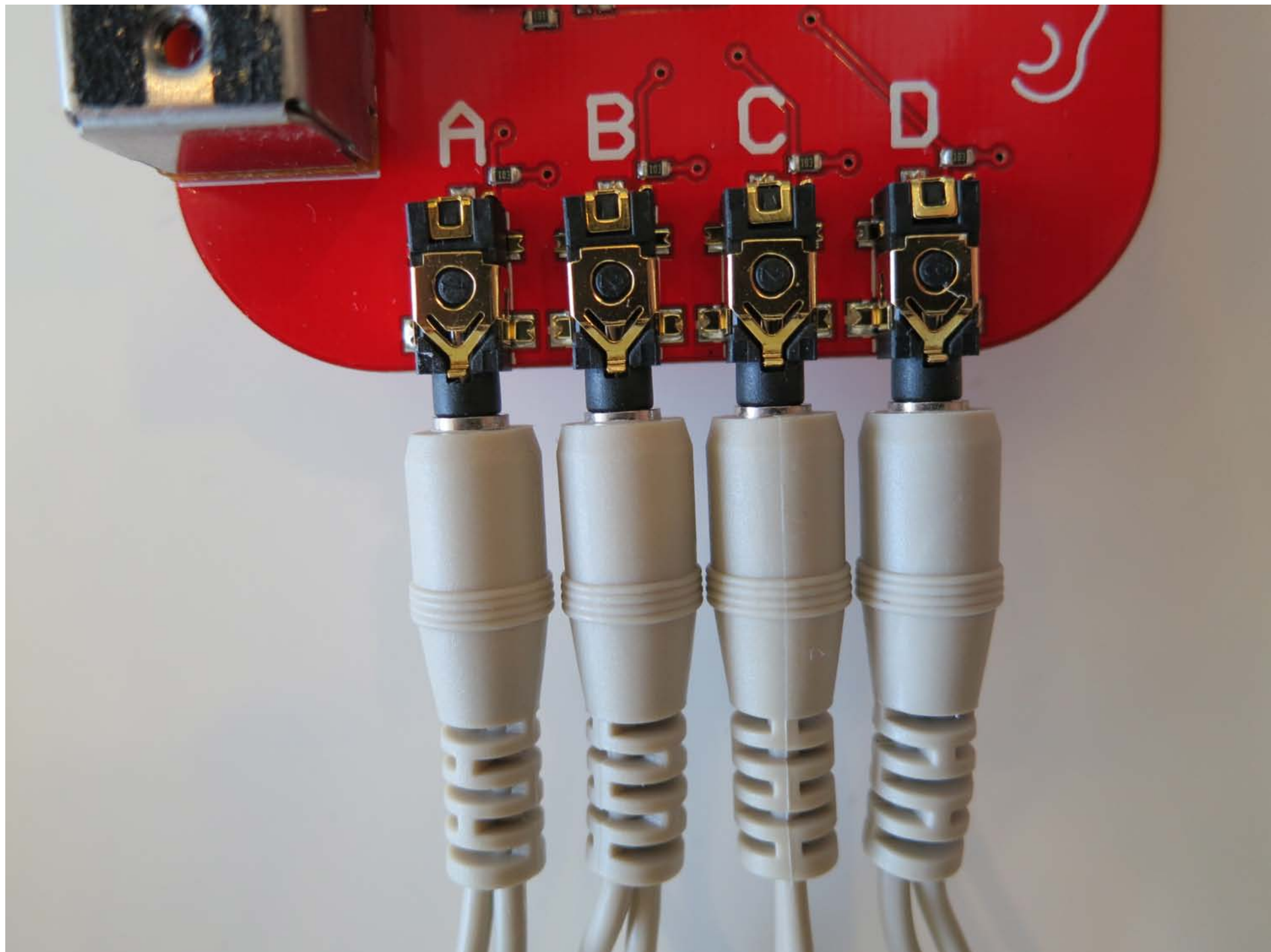
Q



R



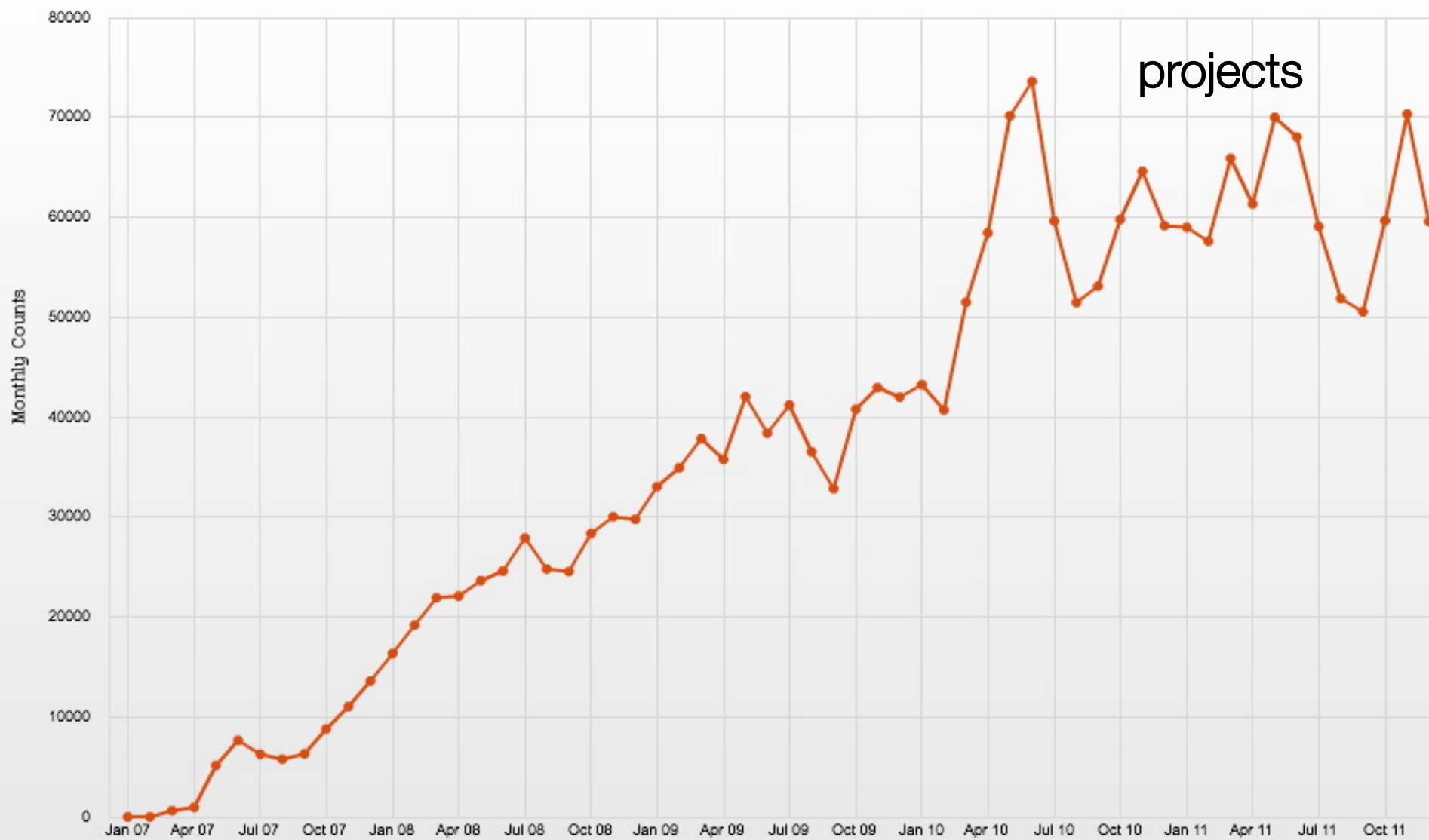


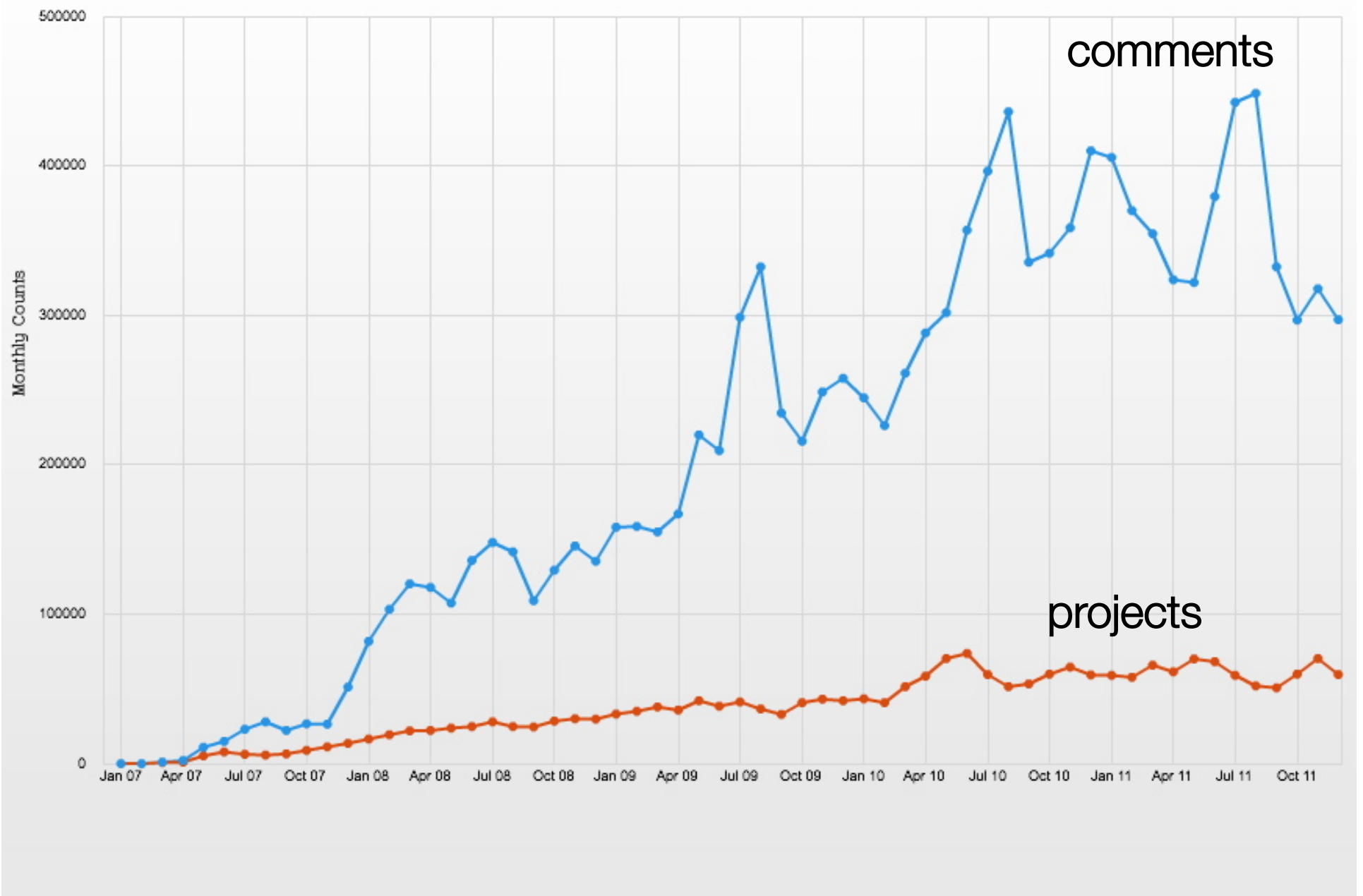


creating
connecting









SCRATCH

File Edit Share Help

Motion

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Variables

Stage selected:
No motion blocks

Stage

Scripts

Backgrounds

Sounds

when green flag clicked

set score to 0

set bleh to 0

switch to background title

repeat until key space pressed?

play sound sod base until done

wait until not key space pressed?

broadcast BEGIN

set bleh to 1

switch to background main

play sound sod fade in until done

forever

play sound sod loop until done

when I receive level complete

switch to background level complete

wait 2 secs

switch to background main

when space key pressed

if bleh = 0

stop all sounds

when I receive BEGIN

SwitchIt

S W I T C H - I T

Mission

Switch the tiles to create this pattern

Level code:
puzzle

Current level:
1

Score: 0

Go to level

x: 239 y: -272

New sprite:

square1

square2

square3

square4

square5

square6

square7

square8

square9

selector

mission...

Sprite1

score D...

score D...

Stage

1

score D...



DarthPickley 1 month ago

a pretty easy puzzle. but fun.

[\(reply\)](#) | [\(flag as inappropriate\)](#) | [\(x\)](#)



silvershine 1 month ago

Thank you for playing! What do you think I could change to add a bit more of a challenge?

[\(reply\)](#) | [\(hide replies\)](#) | [\(flag as inappropriate\)](#) | [\(x\)](#)



DarthPickley 1 month ago

Hmm, perhaps as an additional feature, you could create a "par" of moves for each puzzle level, which would be the minimum number of moves needed to solve it.

