WHEN did you learn to code?

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TEACHING CODING

How long did it take you?

2007 – LEARNING TO CODE



2017 – LEARNING TO CODE



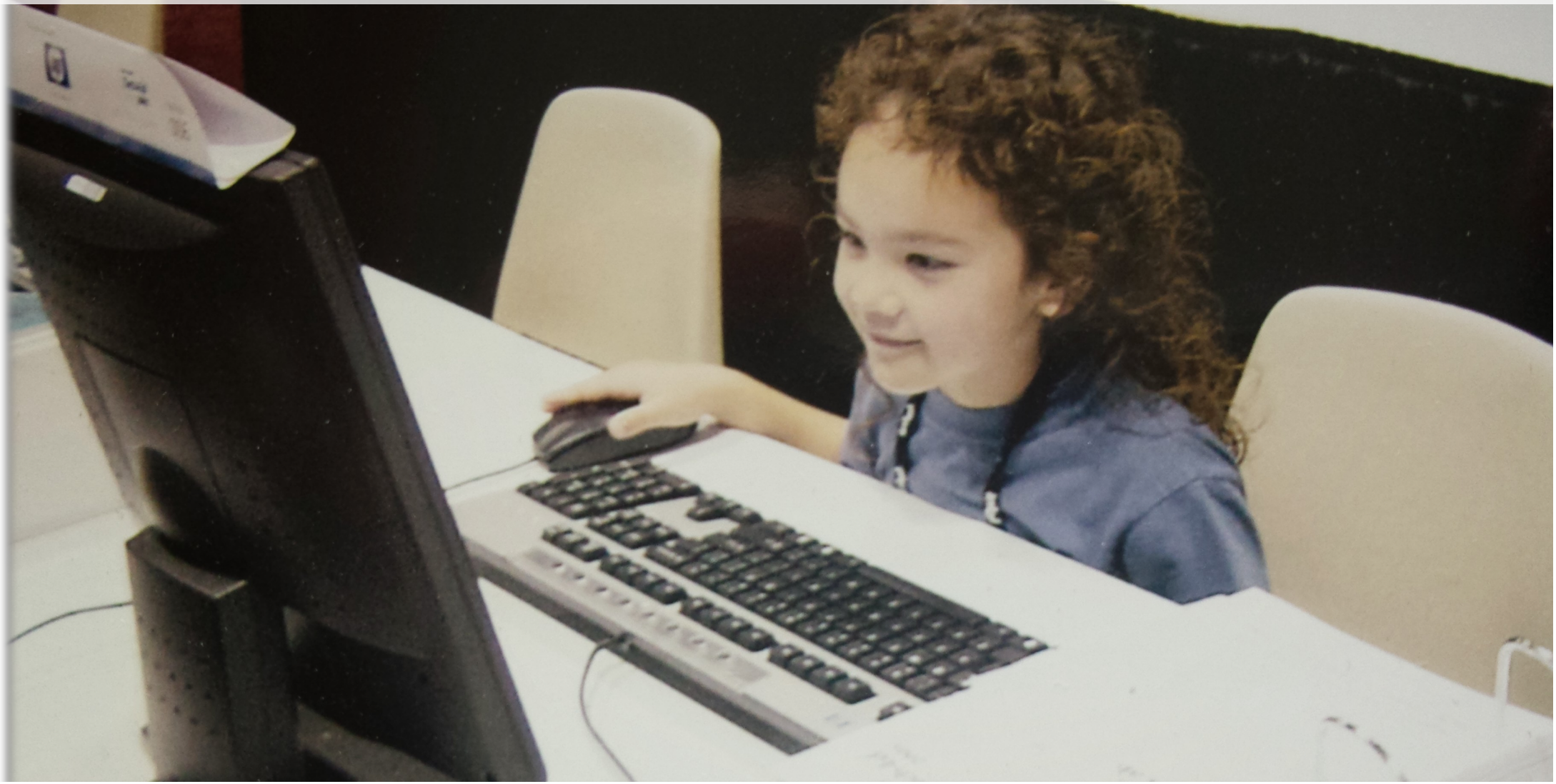


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Nov 2018 – Berlin, Germany

The rest of the story

HOW DO KIDS LEARN TO CODE?



DEVELOPERS CAN TEACH KIDS, RIGHT?



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MSFT Digigirlz- link

We taught EVERYTHING



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TKP Influences- link

PROGRAMMING:

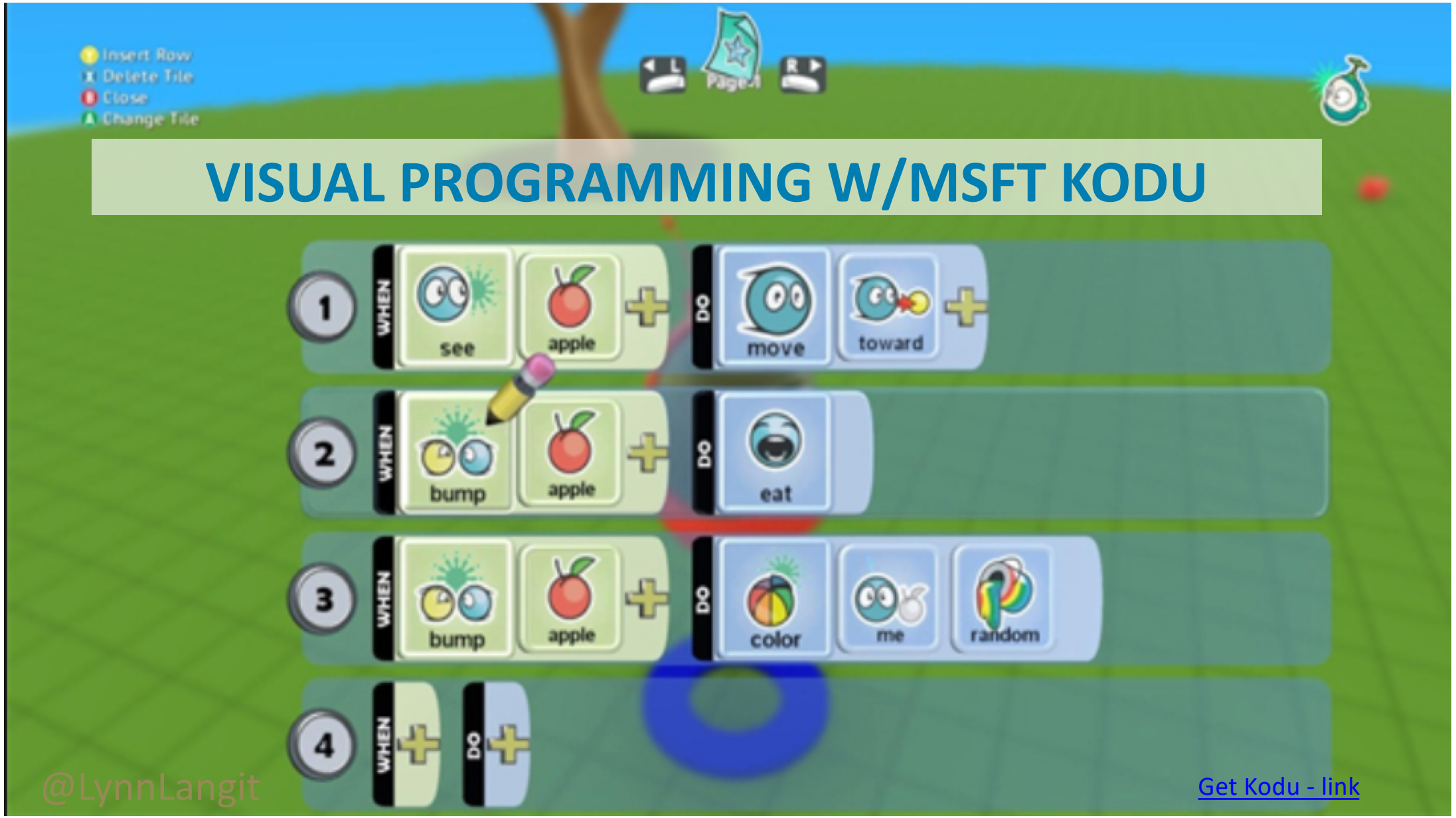
VISUAL



TEXT-BASED

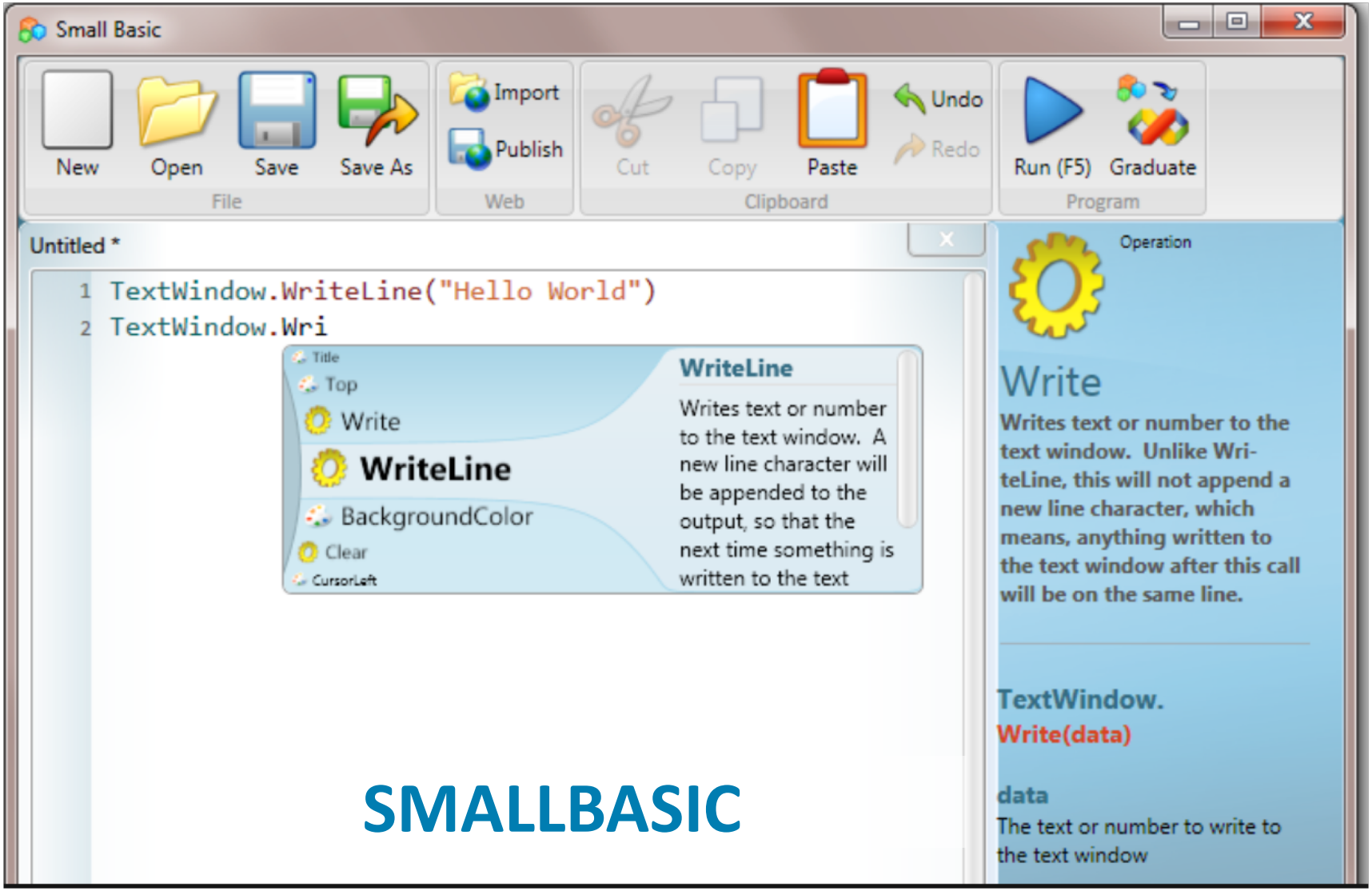
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VISUAL PROGRAMMING W/MSFT KODU



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Get Kodu - link



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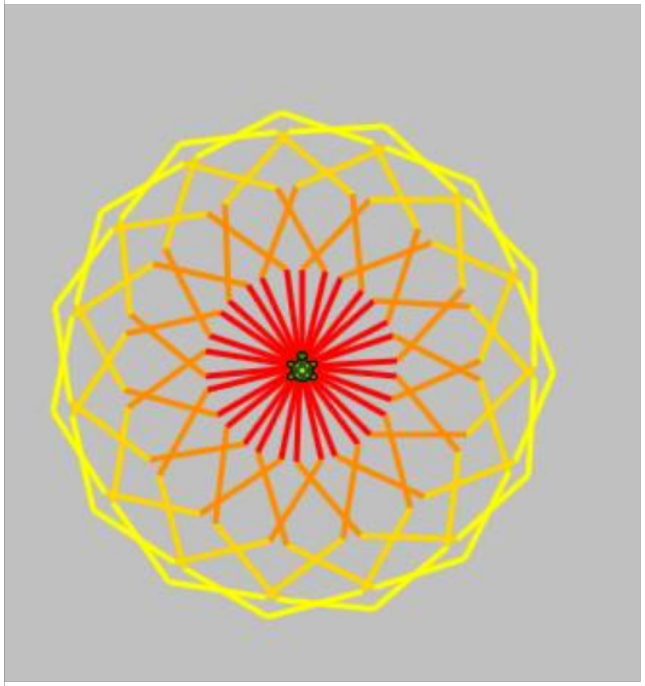
SmallBasic - link

WORDS
PROVIDE THE BRIDGE
For SmallBasic

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TKP-SMALLBASIC

```
'------------ Recipe for DrawOctogon --#13
Sub DrawOctogon
  ' Do the following 8 times --#6
  For i = 1 To 8
    ' Change the color of the line the tortoise draws to the next color
    Tortoise.SetPenColor(ColorWheel.GetNextColor())
    ' Move the tortoise 50 pixels --#2
    Tortoise.Move(50)
    ' Turn the tortoise 1/8th of 360 degrees to the right --#5
    Tortoise.Turn(360/8)
    ' Repeat --#8
  EndFor
  '------------ End of DrawOctogon recipe --#13
EndSub
```



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TKP SmallBasic - link

TKP

LOGO REIMAGINED



Turtle Geometry - link

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We held EVENTS… around the world

COPENHAGEN, DENMARK



LUSAKA, ZAMBIA



PALO ALTO, CALIFORNIA



AUCKLAND, NEW ZEALAND



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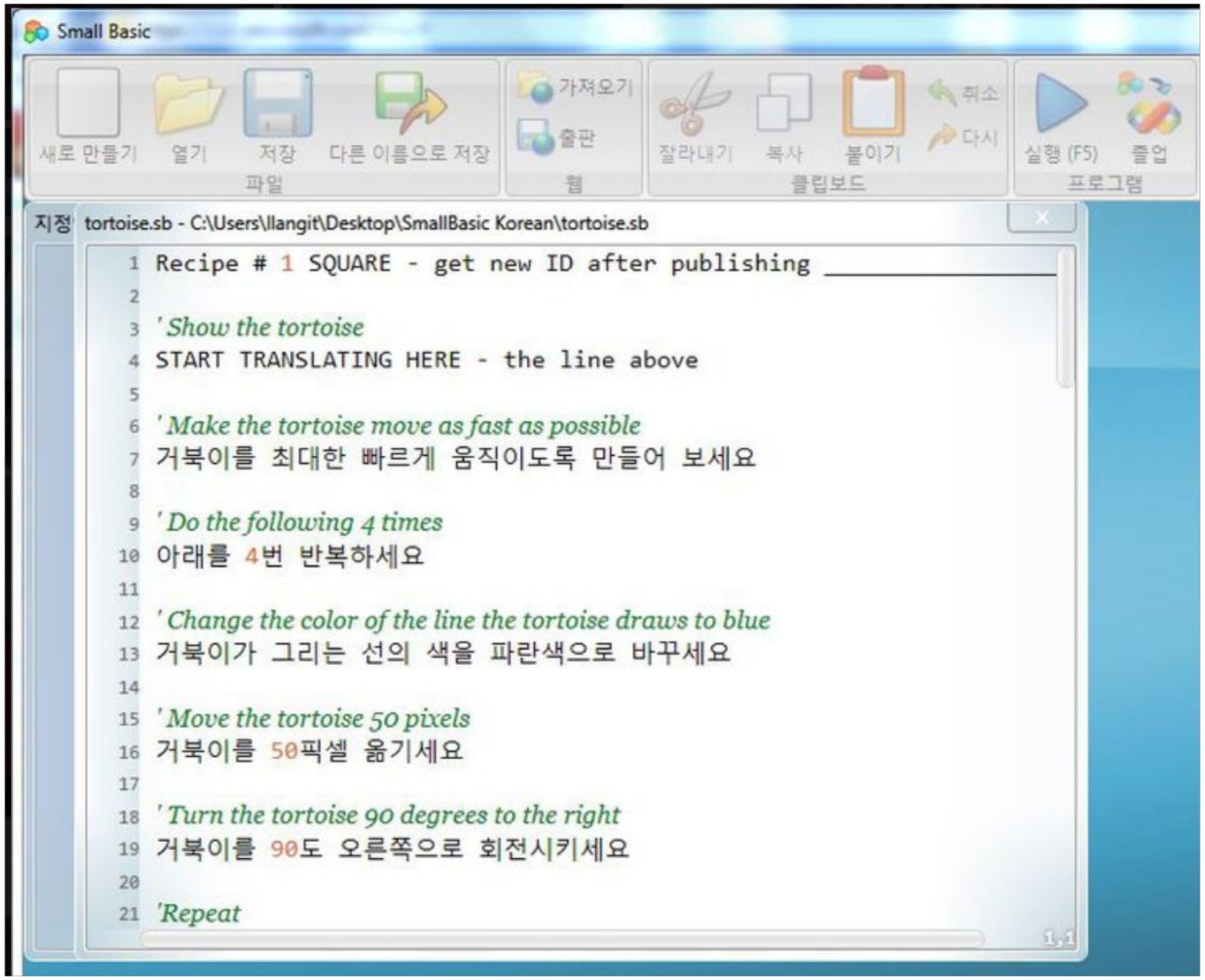
SOUTH KOREAN TEACHERS



WORDS
PROVIDE THE BRIDGE
For SmallBasic

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LOCALIZATION



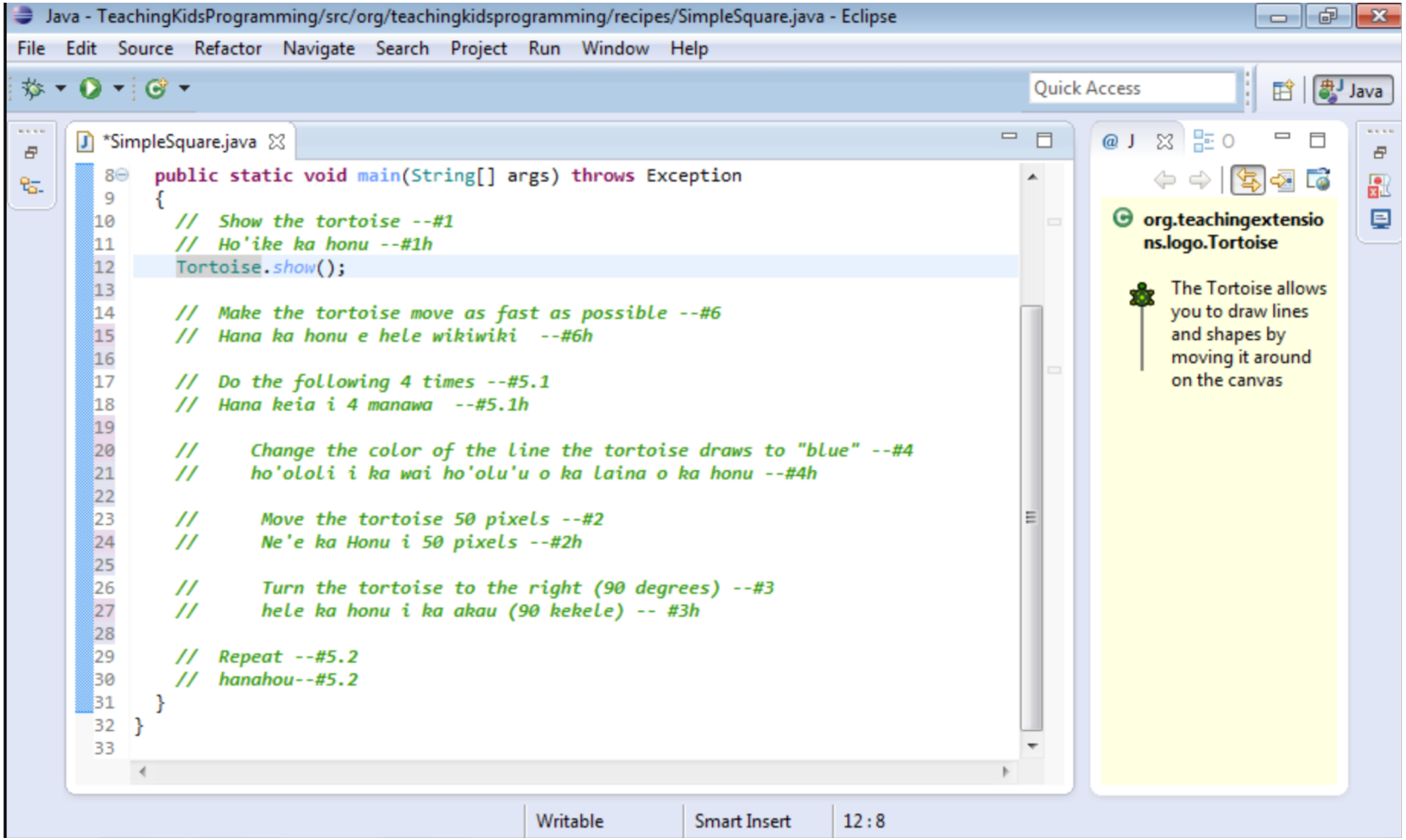
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MOLOKAI, HI



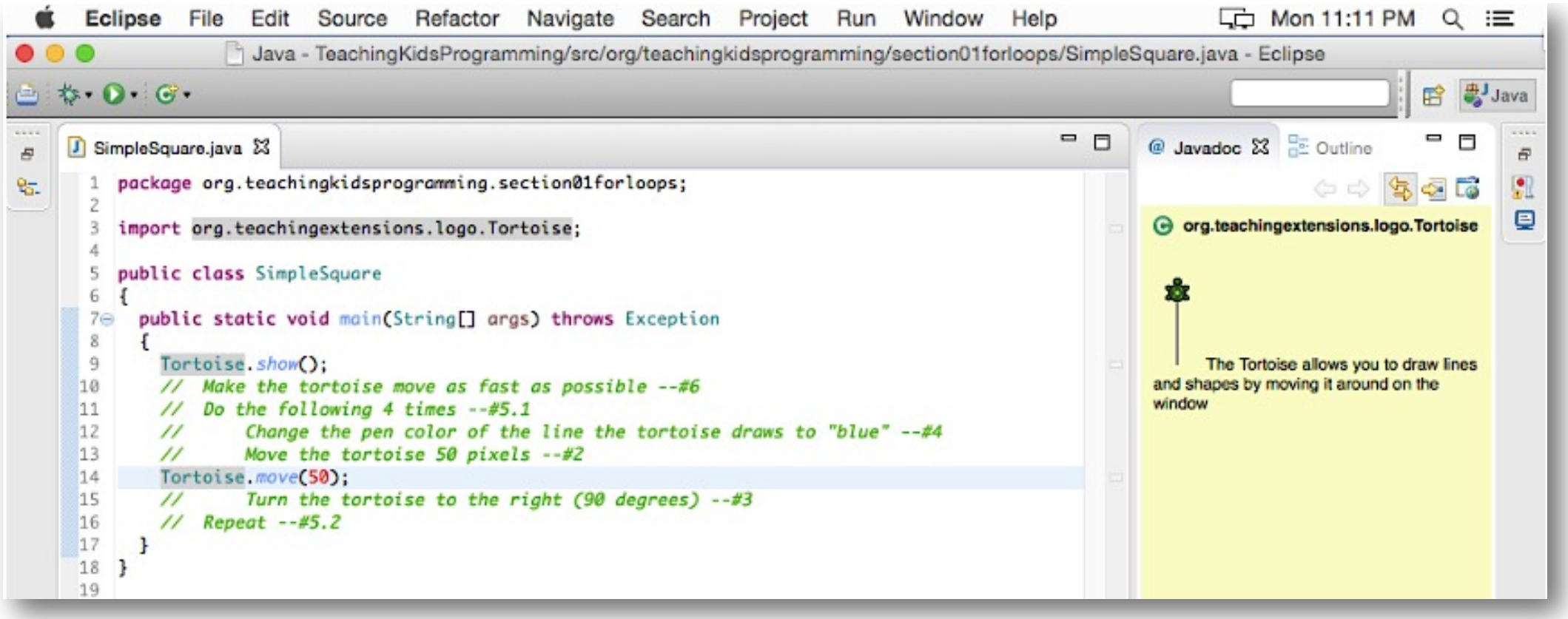
WORDS
PROVIDE THE BRIDGE
For Java

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Java - TeachingKidsProgramming/src/org/teachingkidsprogramming/recipes/SimpleSquare.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
Java
*SimpleSquare.java
8 public static void main(String[] args) throws Exception
9 {
10 // Show the tortoise --#1
11 // Ho'ike ka honu --#1h
12 Tortoise.show();
13
14 // Make the tortoise move as fast as possible --#6
15 // Hana ka honu e hele wikiwiki --#6h
16
17 // Do the following 4 times --#5.1
18 // Hana keia i 4 manawa --#5.1h
19
20 // Change the color of the line the tortoise draws to "blue" --#4
21 // ho'ololi i ka wai ho'olu'u o ka laina o ka honu --#4h
22
23 // Move the tortoise 50 pixels --#2
24 // Ne'e ka Honu i 50 pixels --#2h
25
26 // Turn the tortoise to the right (90 degrees) --#3
27 // hele ka honu i ka akau (90 kekele) -- #3h
28
29 // Repeat --#5.2
30 // hanahou--#5.2
31 }
32 }
33
org.teachingextensions.logo.Tortoise
The Tortoise allows you to draw lines and shapes by moving it around on the canvas
Writable
Smart Insert
12 : 8

"Why Java?"

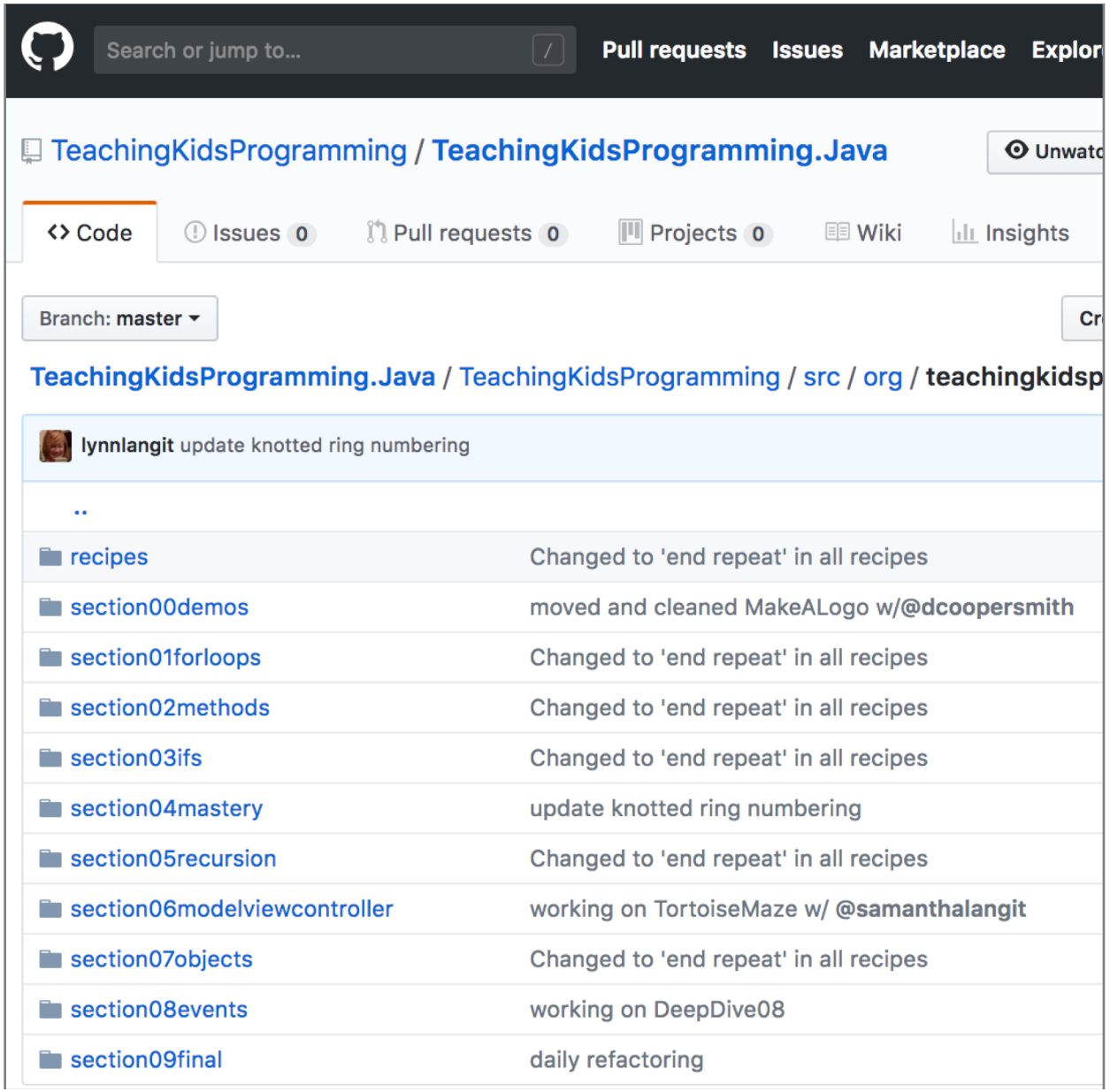




TKP JAVA PATTERN LANGUAGE

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DEMO: TKPJAVA

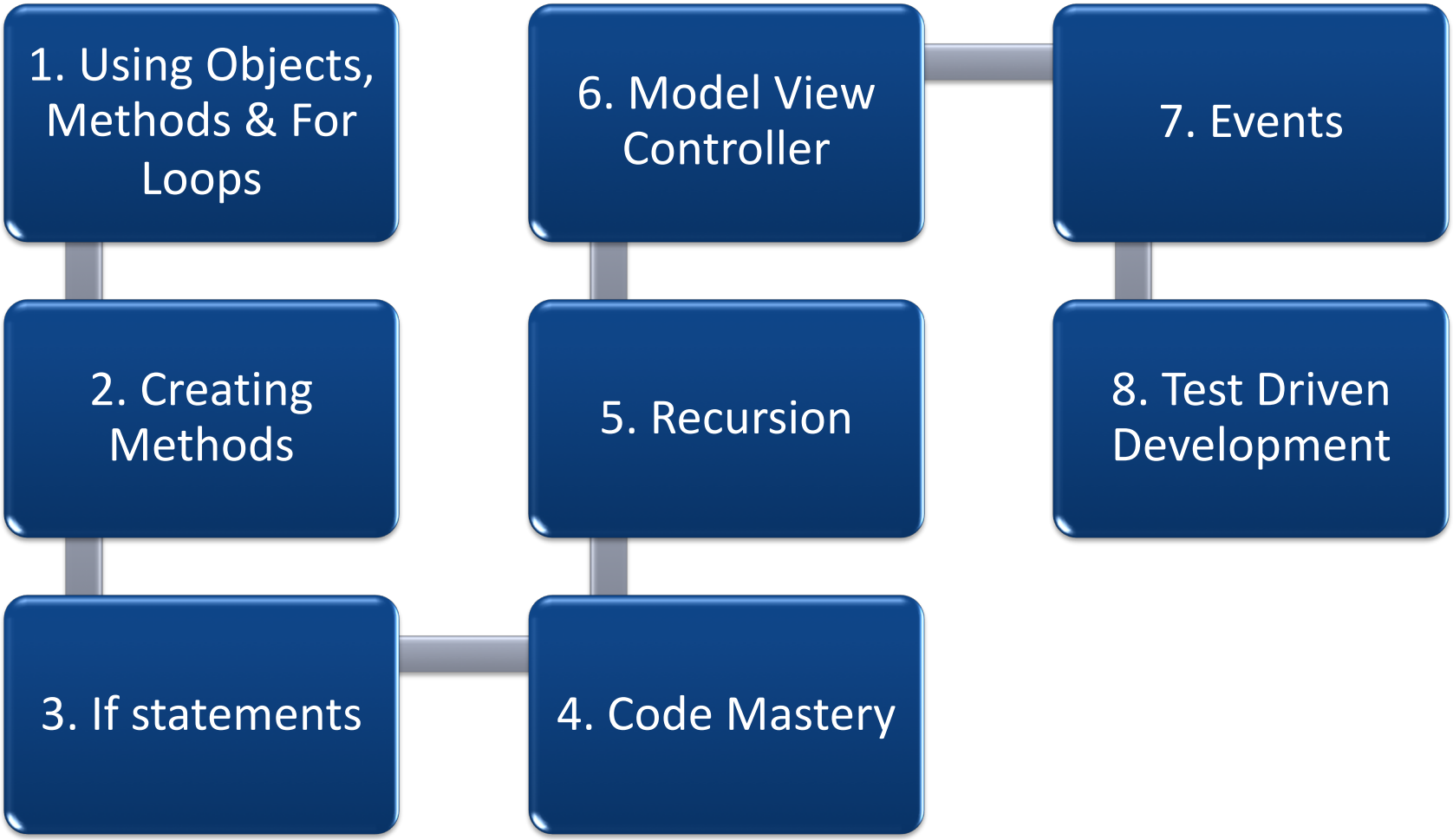


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TKP Repos - link

We taught every child one lesson or more however...

TKP JAVA "COURSEWARE"



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TKP Contributors - link

Code != Courseware

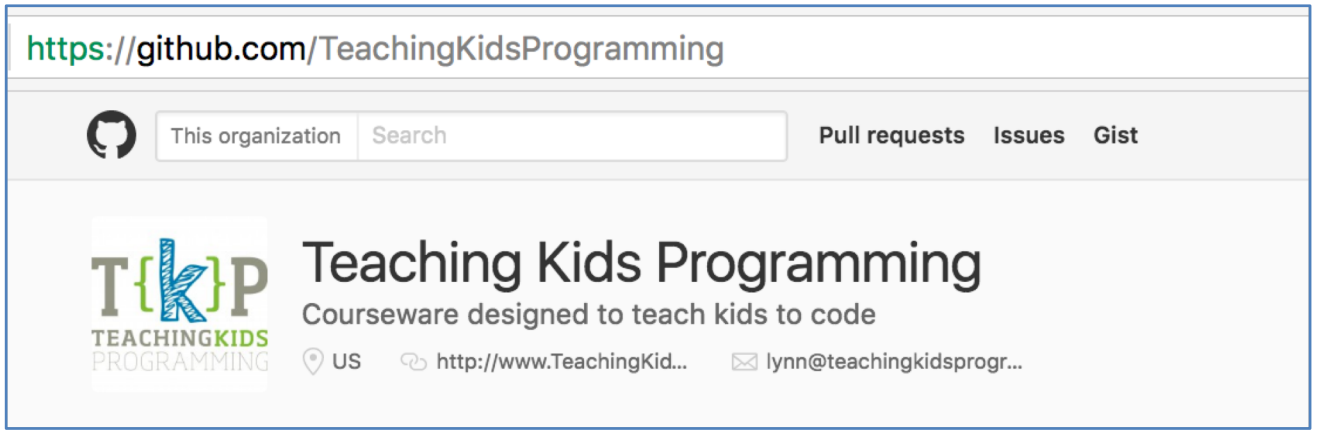
@LynnLangit

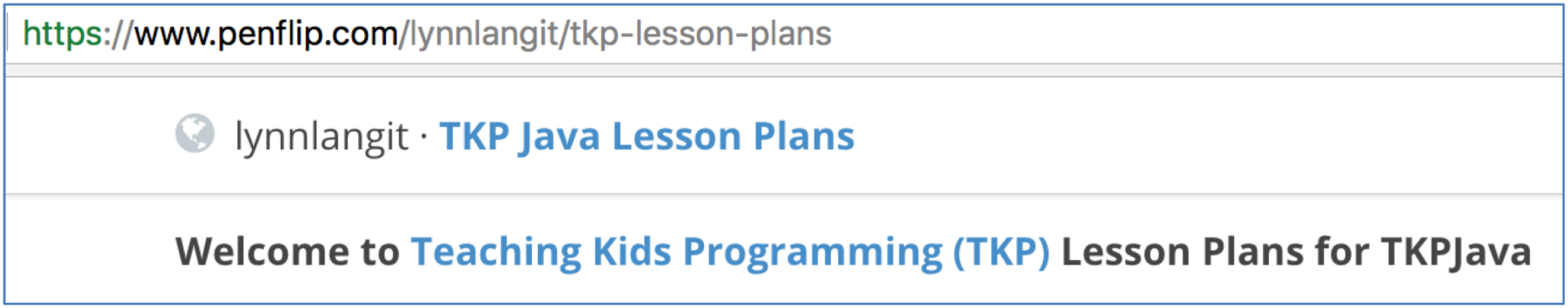


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TKP site - link

We built Courseware, Tools & Docs





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TKP Penflip site - link

We created Screencasts

TKPJava for K-12 Teachers PLAY ALL

Recap videos for TKP Java courses



TKPJava for K-12 Teachers

Teaching Kids Programming • 577 views • 2 years ago

This short video describes what resources are available for K-12 teachers to teach introductory computational thinking with TKPJava.



SimpleSquare Recap for TKP Java

Teaching Kids Programming • 3.6K views • 4 years ago

recap of Square recipe from the TKP courseware library



SimpleSquare Variation for TKP Java

Teaching Kids Programming • 3.9K views • 3 years ago

Variation for Simple Square recipe from the TKP courseware library



Houses Recap for TKP Java

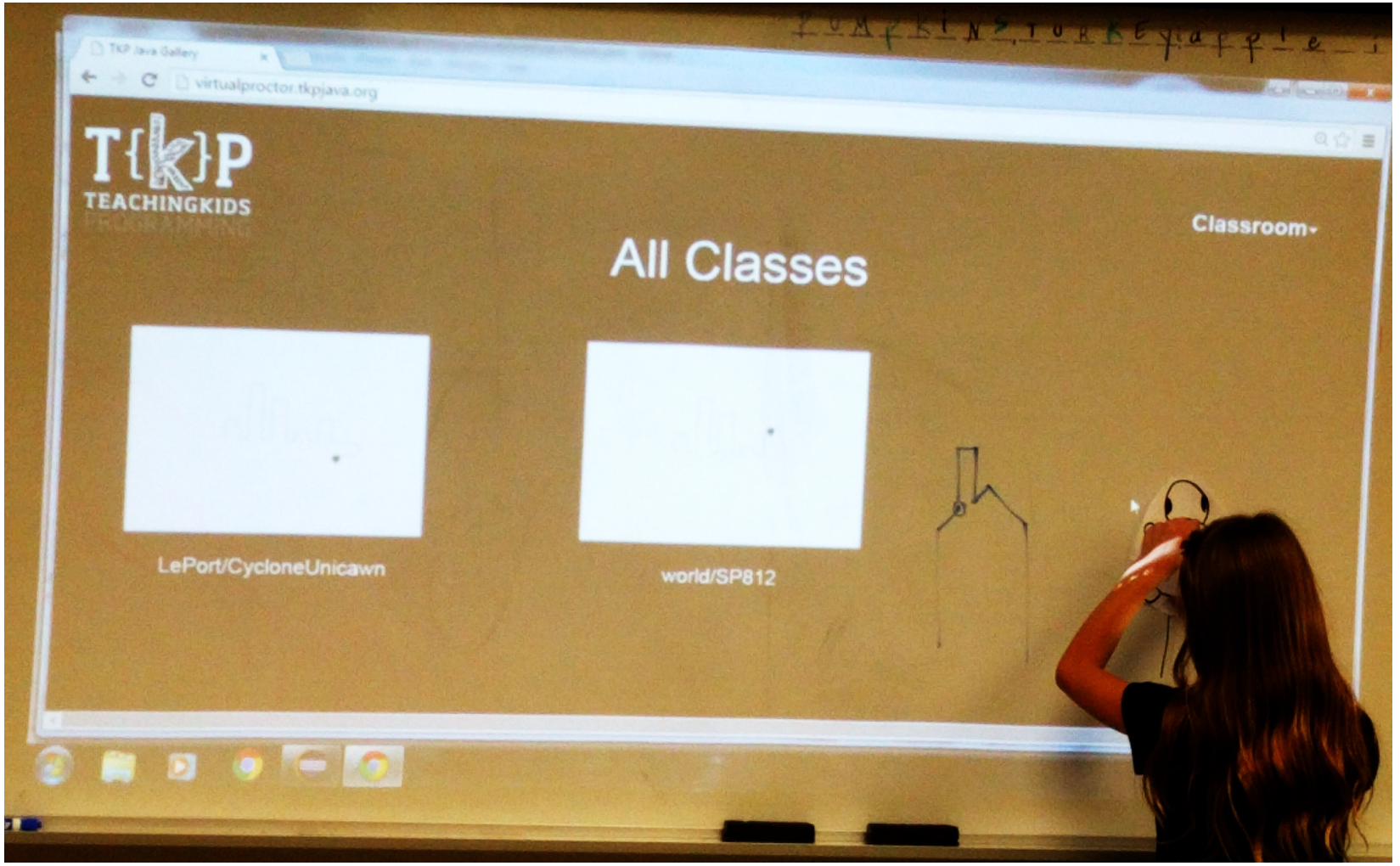
Teaching Kids Programming • 1.6K views • 4 years ago

A recap and deep dive into the second recipe "houses" for TeachingKidsProgramming. Code at https://github.com/TeachingKidsProgramming/TeachingKidsProgramming.Java More at

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TKP YouTube channel - link

We built Utilities



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TKP Virtual Proctor - link

FINDING THE TEACHERS

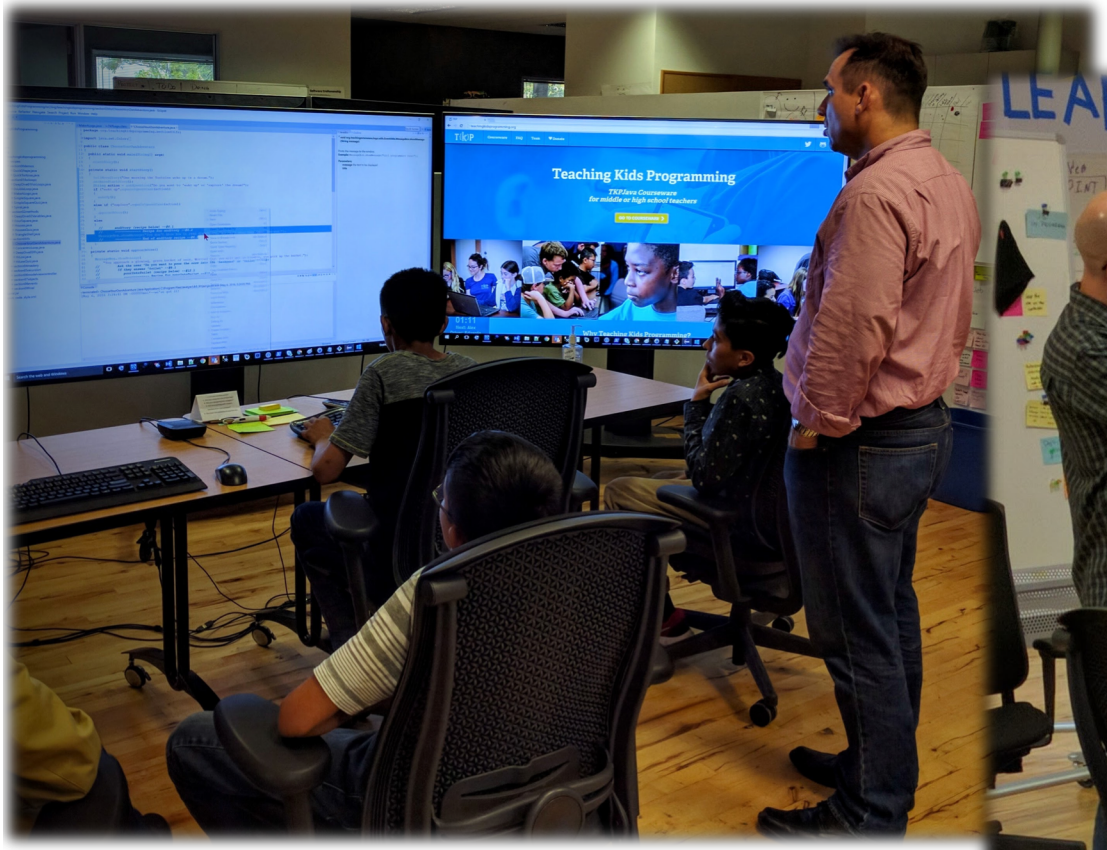
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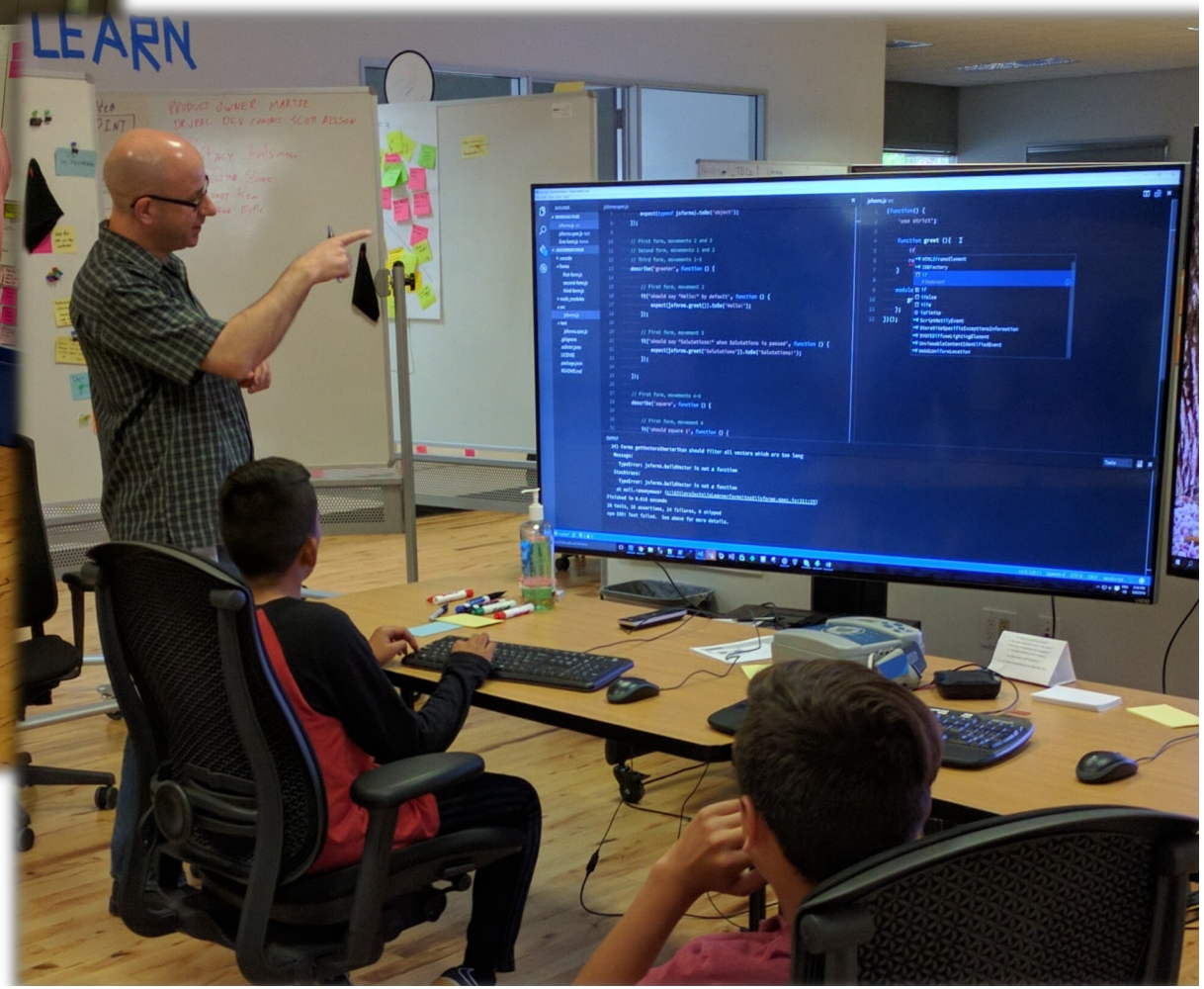
TKP at School → Palm STEAM Academy



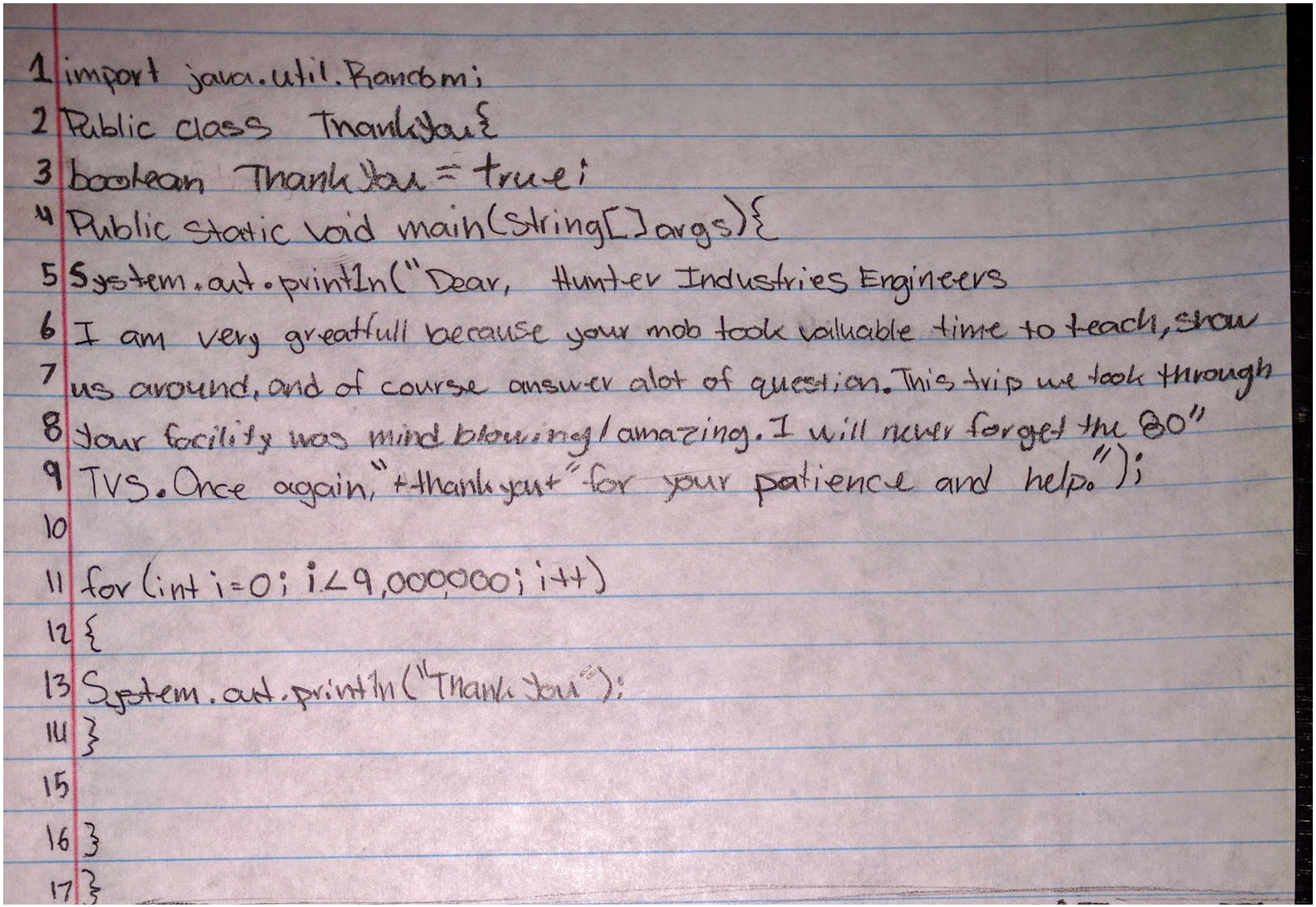
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TKP at Work → Hunter Industries





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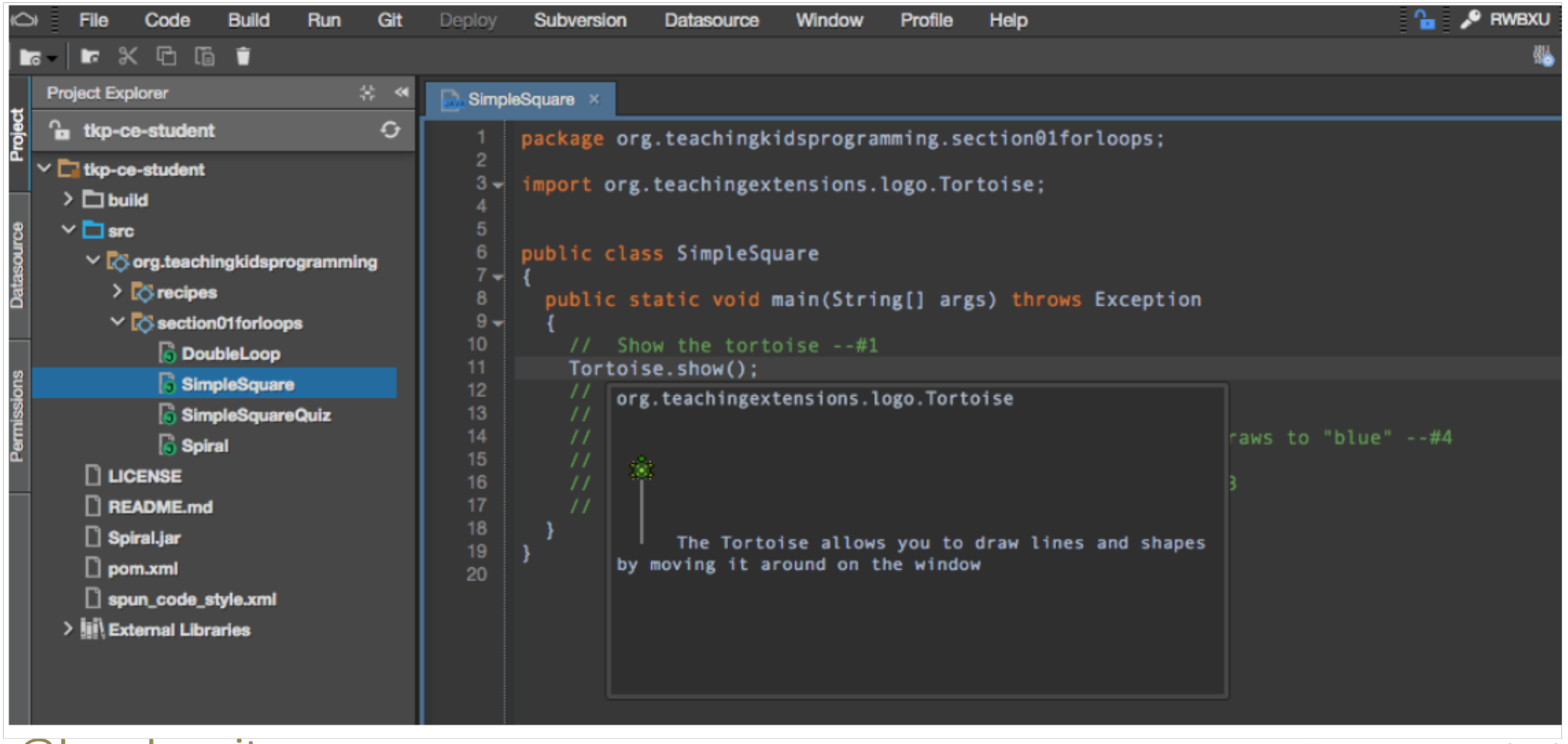


```
1 import java.util.Random;
2 Public class ThankYou{
3 boolean ThankYou = true;
4 Public static void main(String[] args){
5 System.out.println("Dear, Hunter Industries Engineers
6 I am very greatfull because your mob took valuable time to teach, show
7 us around, and of course answer alot of question. This trip we took through
8 your facility was mind blowing/amazing. I will never forget the 80"
9 TVS. Once again," +thankyou+ "for your patience and help.");
10
11 for(int i=0; i<9,000,000; i++)
12 {
13 System.out.println("Thank You");
14 }
15
16 }
17 }
```

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50%
could NOT
install it

We built a custom IDE



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TKP Codenvy IDE- link

Developers
can’t solve this problem
by ourselves

TKP MODELS

TKP - COURSEWARE

- Free, Open Source
- TKPJava
- Teachers teach themselves to code



THE FARM…THE HACKATHON





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#1
NO ASSUMING

WHAT TO DO?

GOAL

- Boys and Girls together
- 20 hours of coding in one week
- 11-14 year olds

Cooking & Coding Summer Camp

- TKPJava
- Other technical info
- Greek Cuisine

THE TEACHERS







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60% RETURNED NEXT YEAR







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#1 NO ASSUMING

#2
WORK IN GROUPS

Focus on the effort
Safe to Fail

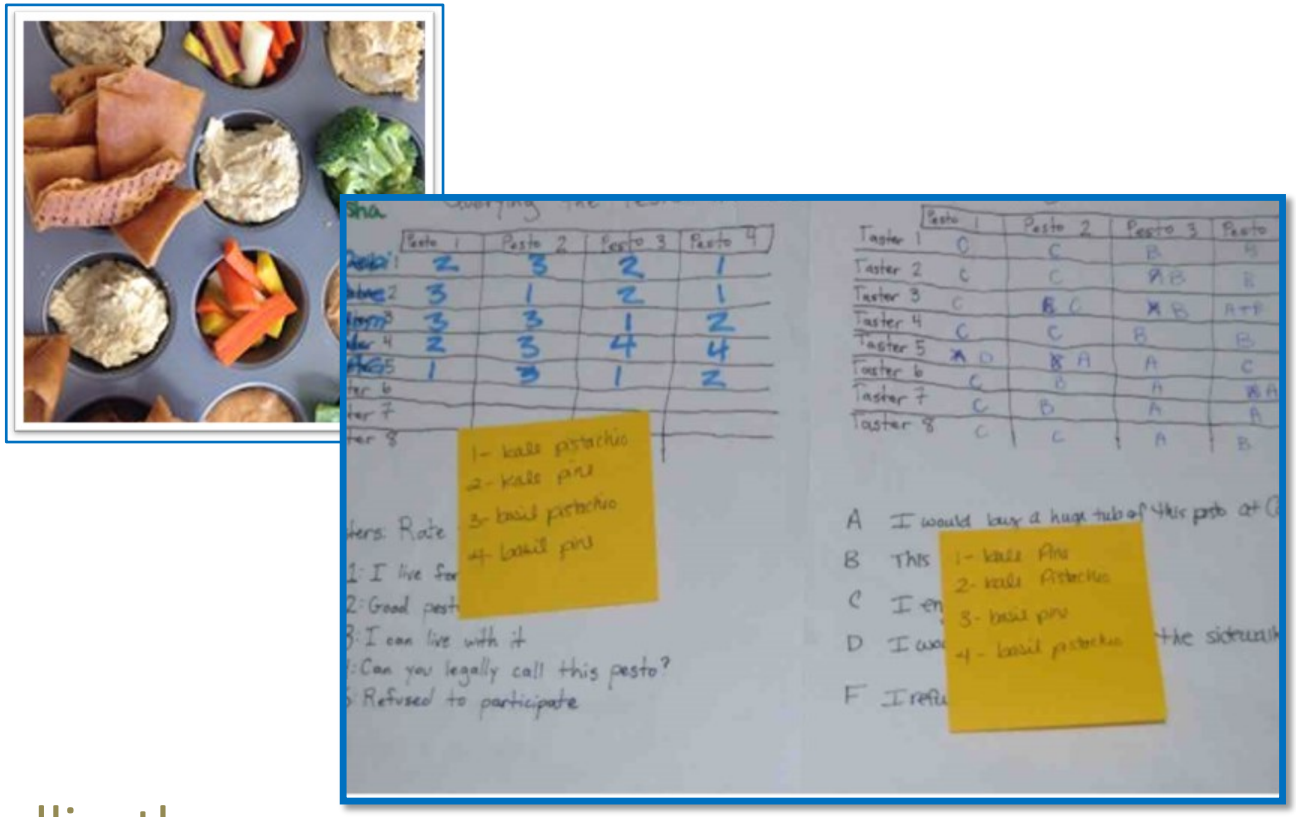
NO RULES





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“THE HUMMUS ARGUMENTS”
DATA SCIENCE UNPLUGGED



Garlic:

Raw vs Roasted

Chickpeas:

Peeled vs Unpeeled

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Information is Beautiful - [link]

#1 NO ASSUMING
#2 WORK IN GROUPS

#3
ALLOW SURPRISES

Taking risks and choosing difficult task increases Growth Mindset

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Carol Dweck – TED Talk


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Teen User Group



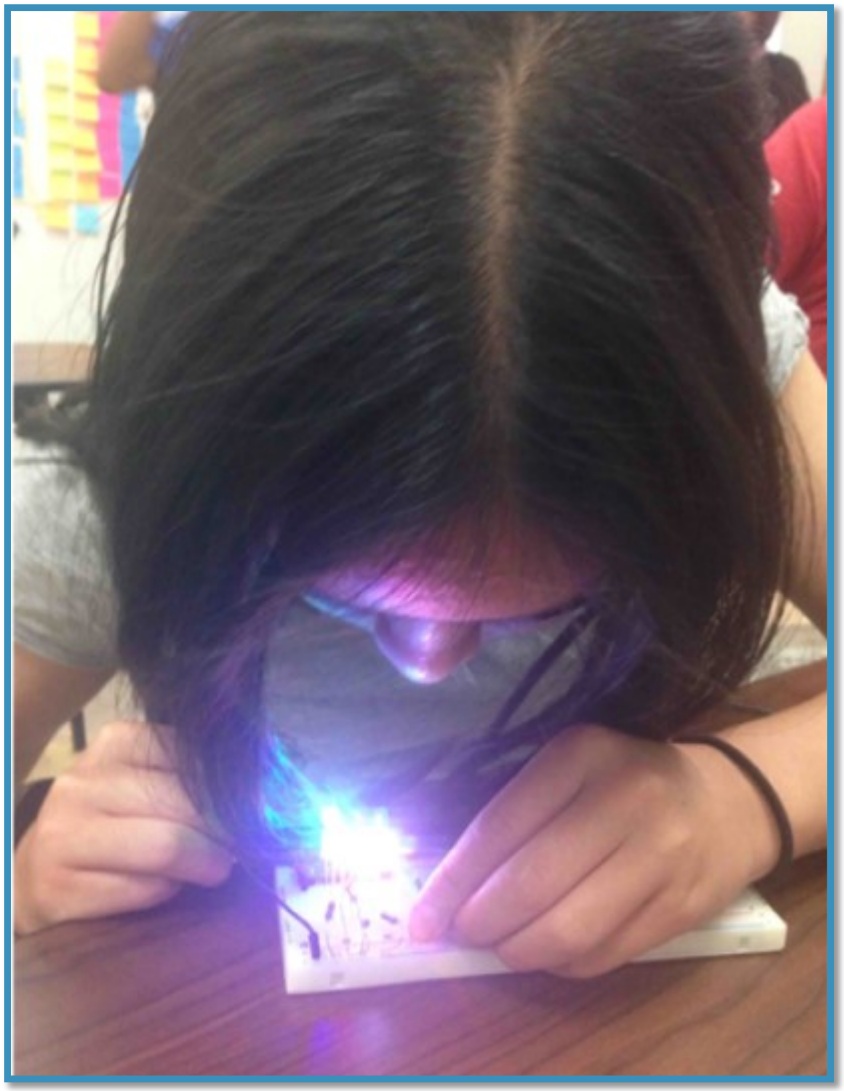
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PI DAY VIDEO on YouTube

#1 NO ASSUMING
#2 WORK IN GROUPS
#3 ALLOW SURPRISES

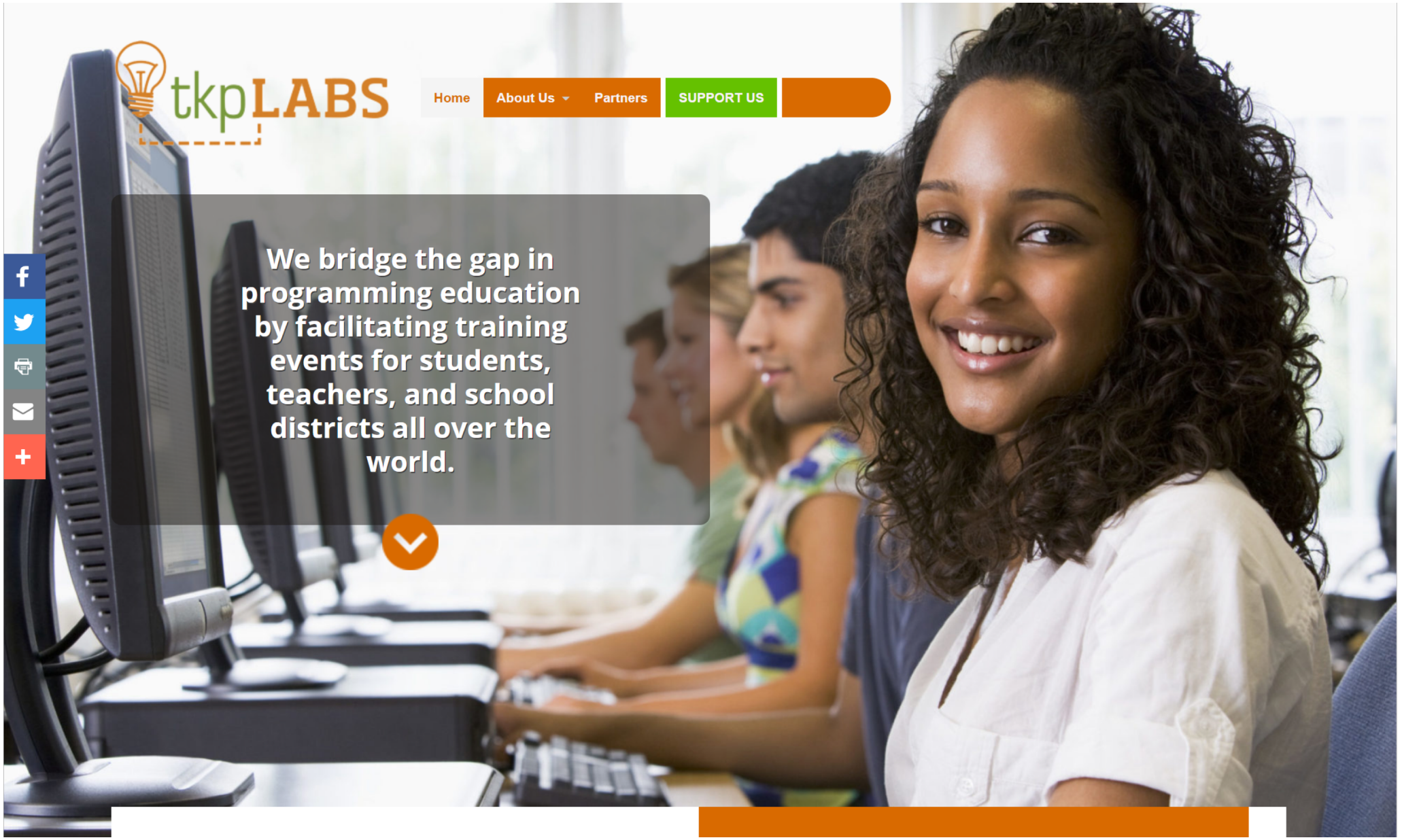
#4

SHOW YOUR WORK



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1. IoT Lab
2. Pair Programming
3. We got funded!


tkpLABS
Home
About Us
Partners
SUPPORT US
We bridge the gap in programming education by facilitating training events for students, teachers, and school districts all over the world.

#1 NO ASSUMING
#2 WORK IN GROUPS
#3 ALLOW SURPRISES
#4 SHOW YOU RULES

#5

TAKE RISKS



Partners for Sustainable Development
شركاء في التنمية المستدامة





تدريب - مدربين حول جافا وإنترنت الأشياء

Train-the trainer in Java & Internet of Things

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Teacher Training Manual

TKPLabs.org

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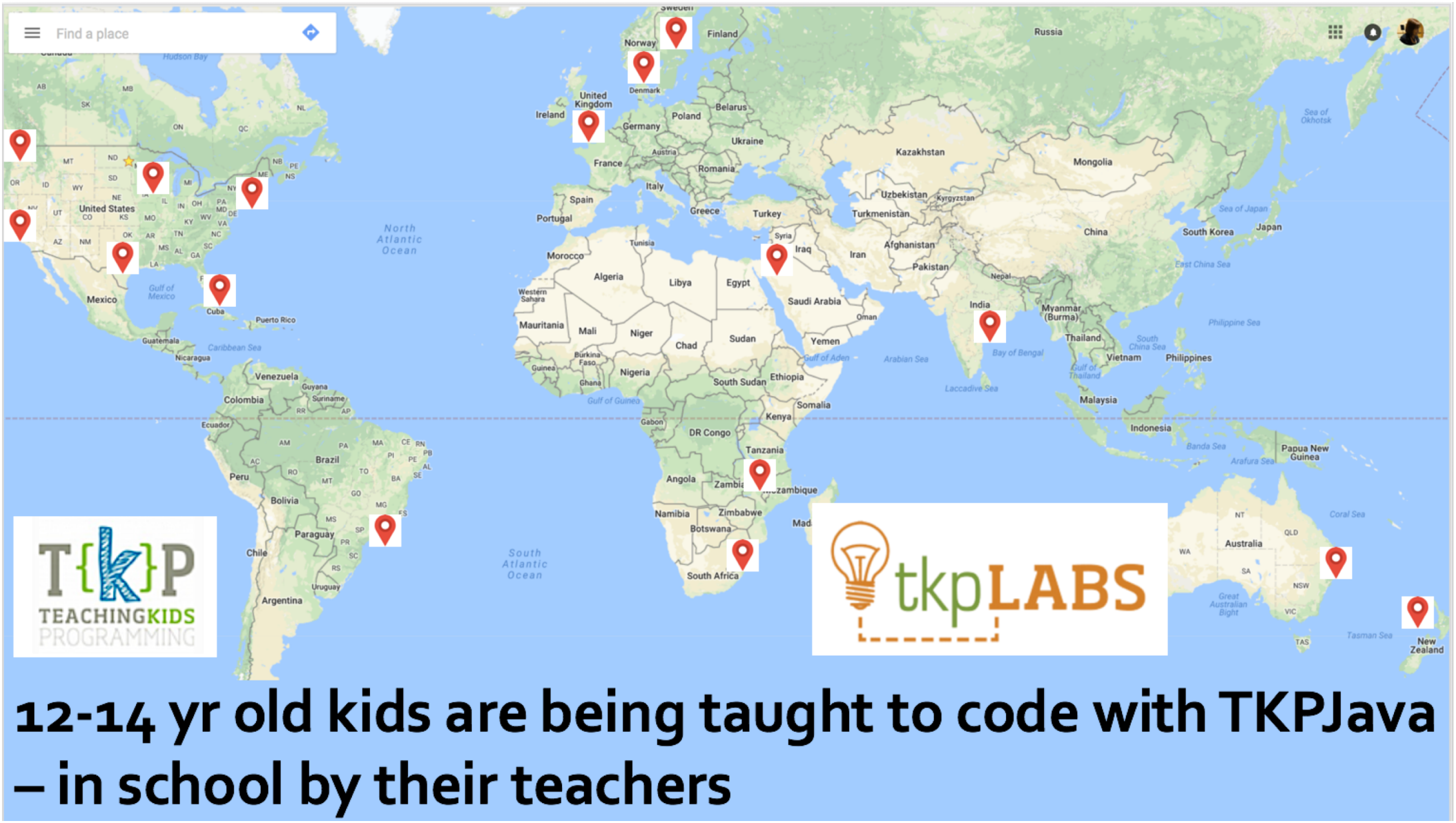




- 3 weeks
- 24 teachers trained
- Over 400 students taught



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Find a place
TKP
TEACHINGKIDS
PROGRAMMING
tkpLABS
12-14 yr old kids are being taught to code with TKPJava
– in school by their teachers

SIX YEARS AGO



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TWO MODELS

TKP - COURSEWARE

- Free, Open Source
- TKPJava
- Teachers teach themselves to code



@LynnLangit

TKP Labs – TEACHER-TRAINING

- Non-profit, Fee-based
- TKPJava, TKPIoT and Data Science
- Lead trainers teach teachers



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