

# Innovate with TouchDevelop

## TouchDevelop Script-On-The-Go



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Microsoft B.V.





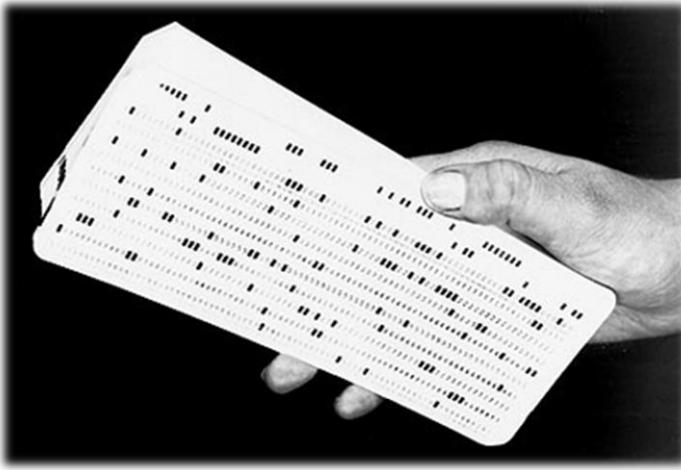
## Innovation Masterclass



For IoT Makers



# input devices shape programming languages

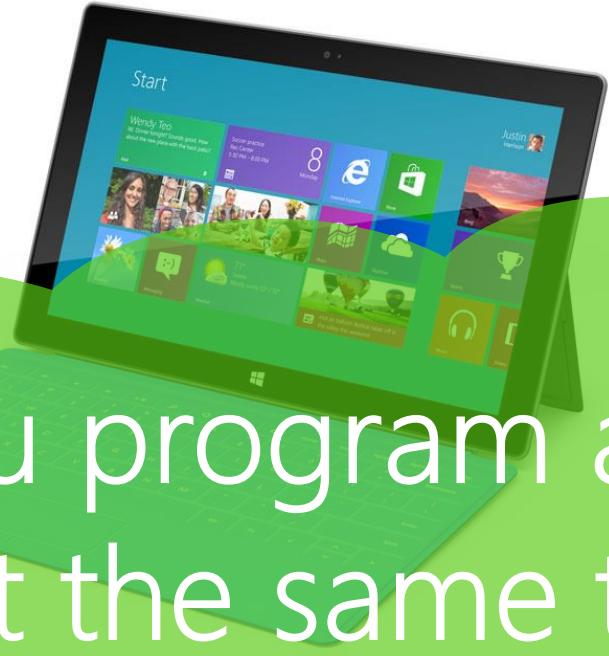




# how many devices can you handle?

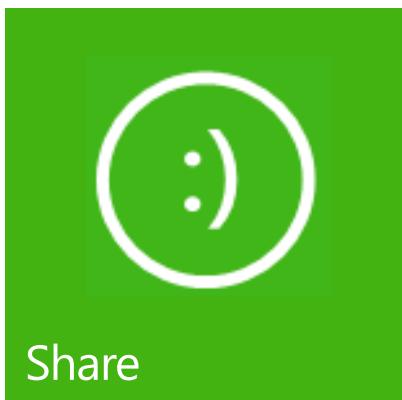
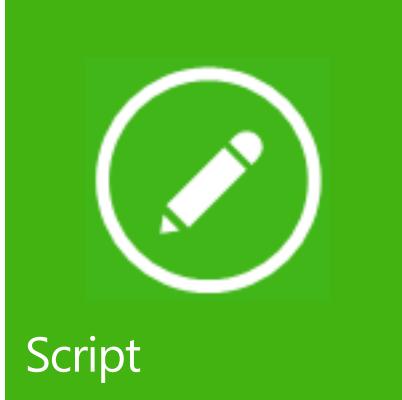
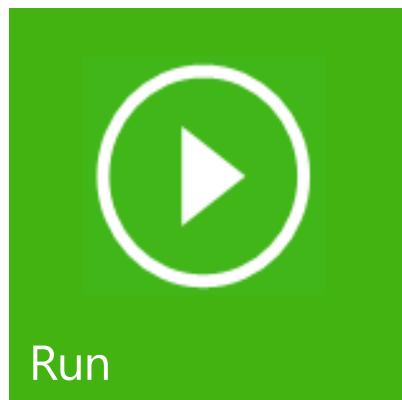


can you program all devices?  
at the same time?  
in interesting way?





# touchdevelop: Script Your Device On the Go





# touchdevelop: a touch-first IDE

Windows Phone app

access to most sensors

web app

PC, Mac, Linux  
iPhone, iPad, Android

The four screenshots illustrate the touchdevelop interface:

- Windows Phone app:** Shows a screen titled "turtle triangle spiral" with a description: "A turtle program that draws triangles into a spiral. No capabilities required." It lists actions like "main", "draw triangle", "initialize", "move", and "move to".
- Code editor (top left):** Displays the code for the "main" action:

```
action main()
Edit this action to create your own turtle drawings.
code → initialize
We are going to draw triangle if increasing sizes and
different colors.
var length := 100
for 0 ≤ i < 64 do
    Turn a little and draw a triangle
    code → turn(360 / 64)
    Increase size
    length := length + 2
    Update color
    code → spiral color((i + 1) / 64)
    Draw a triangle.
    code → draw triangle(length)
```
- Code editor (top right):** Displays the code for the "main" action:

```
action main()
Edit this action to create your own turtle drawings.
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    Update color
    code → spiral color((i + 1) / 64)
    Draw a triangle.
    code → draw triangle(length)
```
- Color picker (bottom right):** A color picker interface with a preview window showing a red square, a color wheel, and a hex color code field containing "#abc". It includes a "tap for more" button.

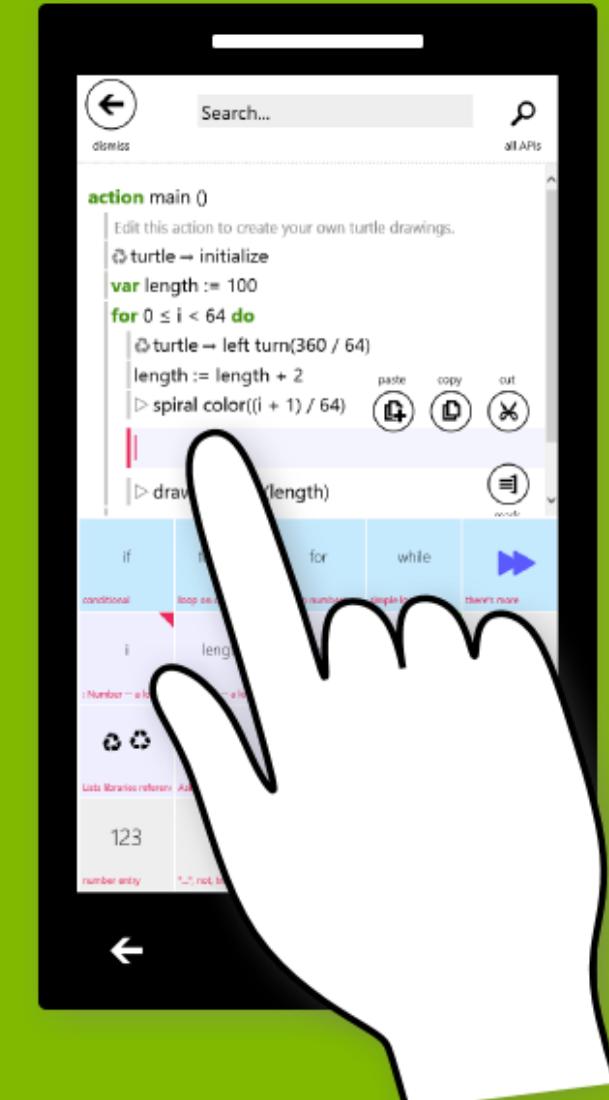
The two screenshots show the touchdevelop web application:

- Code editor:** Shows a script titled "BreakIt! Touch :: drawBricks..." with the following code:

```
var topMargin := 80
var leftMargin := 34
var vpad := 40
var hpad := board → width / cols - 1
for 0 ≤ i < rows do
    var c := colors → rand
    for 0 ≤ i1 < cols do
        total := total + 1
        var sprite := board → create rect
        sprite → set color(c)
        var y := (i * vpad) + topMargin
        var x := (i1 * hpad) + leftMargin
        sprite → set pos(x, y)
        sprite set → add(sprite)
```
- Color palette:** A color palette interface with a color wheel, a preview window showing a green square, and a color selection grid. It includes buttons for "pick color", "from palette", and "color names".



# touchdevelop: BYOD



Bring your own device  
...and TouchDevelop will let you program it!

TouchDevelop uses the latest web technologies in Internet Explorer, Chrome and Safari to bring a **cloud-connected, touch-friendly** app creation environment to your PC, Mac, iPad, iPhone, Android or Windows Phone device. Oh, right, it also **works offline**.



[platforms](#)



# App Day for Schools



Coding exposure: 900 students develop their first programs at App Day

by [Taylor Soper](#) on 5/25/2014 at 4:08 pm | [3 Comments](#)

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An AppDay mentor helps out students with their coding projects.



A dance competition ... at a high school coding hackathon.

<http://www.geekwire.com/2014/puget-sound-app-day/>.



# Hour of Code

<https://www.youtube.com/watch?v=g7EuUc4zJYE>

Computer Science  
Education Week  
**hour of code™**

create your own apps!

on your phone, tablet or laptop  
no sign in or installation required

[educator notes](#) / [2 hour free e-course](#)

**monster slicer**



**start**

[printout](#)

15 minutes

**love me not**



**start**

[printout](#)

[notes](#)

15 minutes



Microsoft Research  
**touchdevelop**

[falling rocks](#)

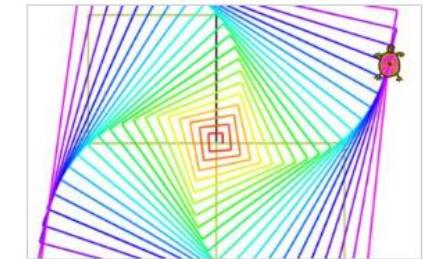


**start**

[printout](#)

20 minutes

**turtle drawings**



**start**

[printout](#)

[notes](#)

10 minutes

**bubble popper**



**start**

[printout](#)

20 minutes

**soundboard**



**start**

[printout](#)

10 minutes

<https://www.touchdevelop.com/hourofcode2>



# touchdevelop.com

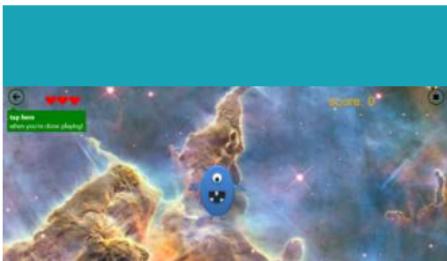


Peter Heldens

/irvi

171 ♀ 436 ♥

## learn



Create your  
own apps



## Tutorials

What's  
new



Export to  
Windows Store

Search  
everything



Settings

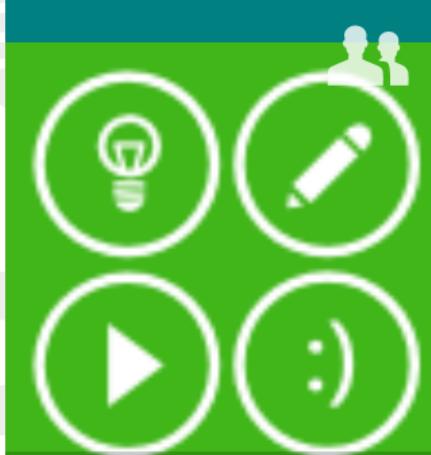
Search  
Help



Getting started  
API Docs



## social



**TouchDevelop Updates**  
TouchDevelop Documentation

Microsoft Research  
**touchdevelop**



[Tweet](#)

[Vind ik leuk](#)

Forums



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Groups



Users



Notifi-  
cations



Give feedback  
Contact us

Join Group

Facebook

Create Group

**beta 66899**

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# Demo's



## Larry Larsen, Rhymes With Orange

Defrag: DVDs sans Sound, Disable Snapping, Watch Mon for Folders | The Defrag Show

Microsoft tech troubleshooter extraordinaire Gov Maharaj and I help walk you through troubleshooting solutions to

1 day ago

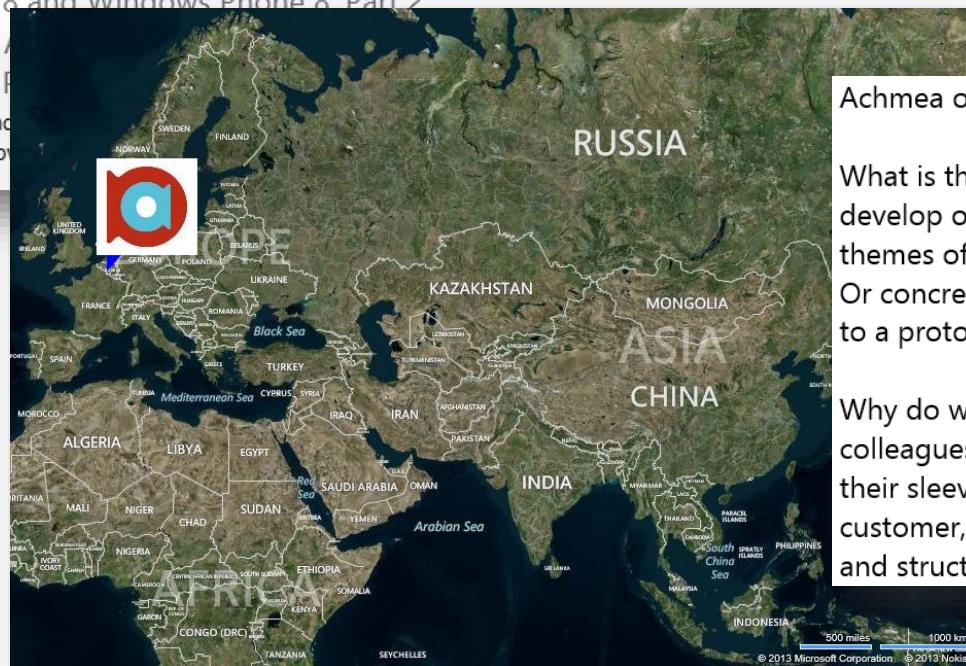


## Ben Riga, JeffKoch

Building Apps for Both Windows 8 and Windows Phone 8: (01b) Comparing Windows 8 and Windows Phone 8, Part 2

| Building Apps for Both Windows 8 and Windows Phone 8: (01c) Comparing Windows 8 and Windows Phone 8, Part 3

Windows 8 and Windows Phone 8 module will cover



## BobTabor, Rodriguez,

Part 4: Quick Windows 8 for Beginners

In this lesson we

it can do for our

## Robert Gre

Building Great Windows 8 Apps | Visual Studio Toolbox

Robert for a

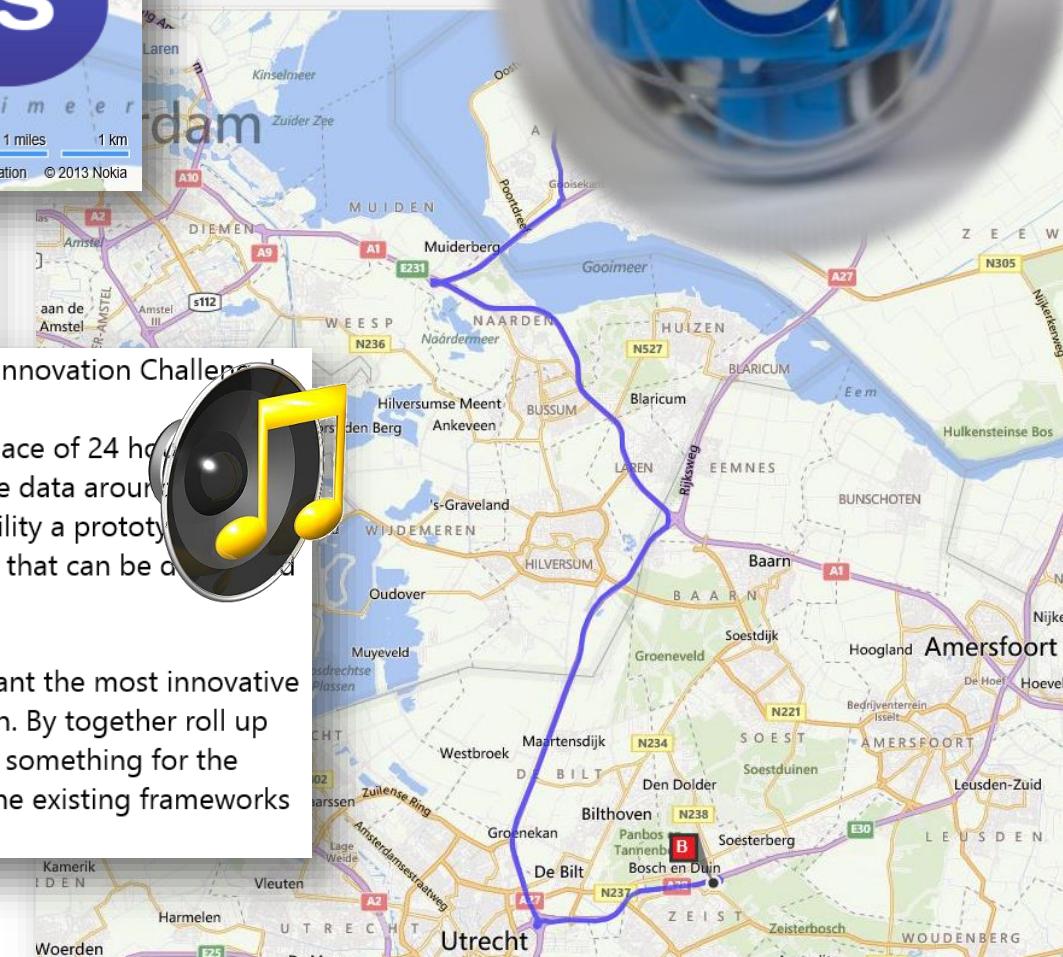
great apps. They



## Achmea organizes the 24 Innovation Challenge

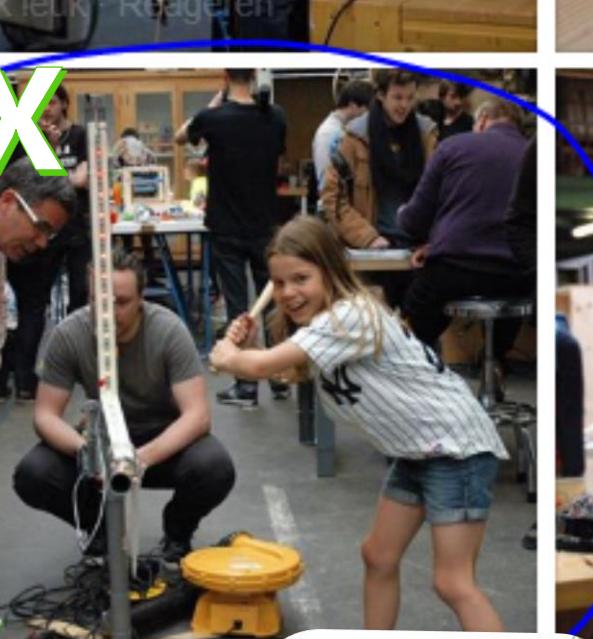
What is the idea? In the space of 24 hours, we want to develop on the basis of the data around us, new ideas. On themes of safety and mobility a prototype can be developed. Or concrete detailed ideas that can be developed directly to a prototype quickly.

Why do we do this? We want the most innovative colleagues within our chain. By together roll up their sleeves and to create something for the customer, separate from the existing frameworks and structures.

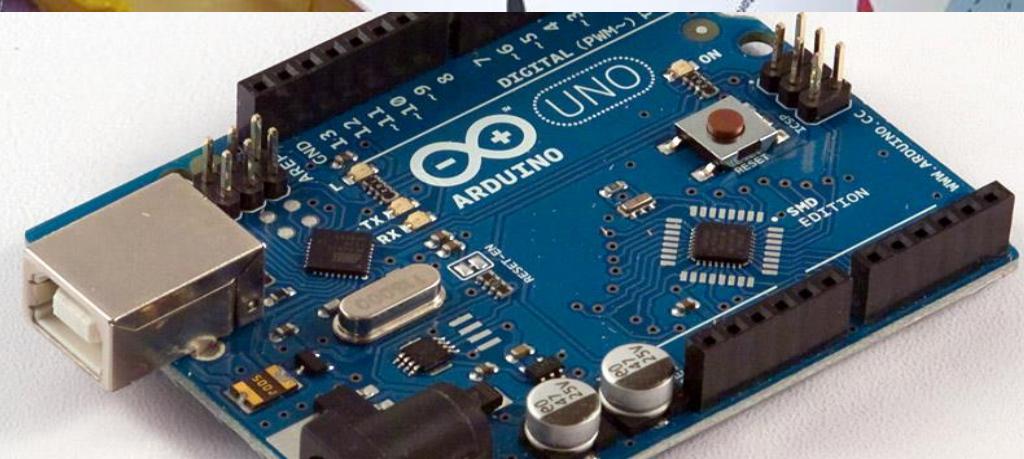
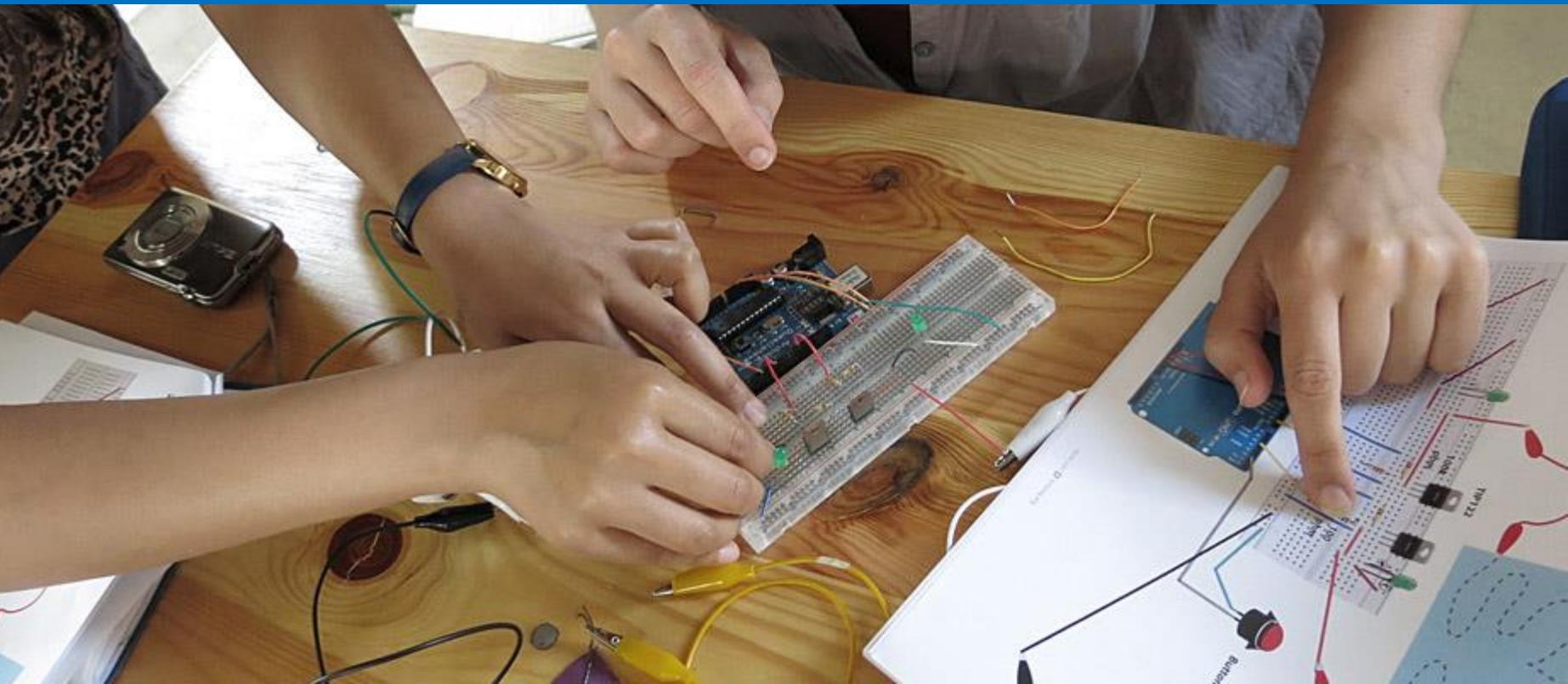


# Innovate to the MAX with Azure !

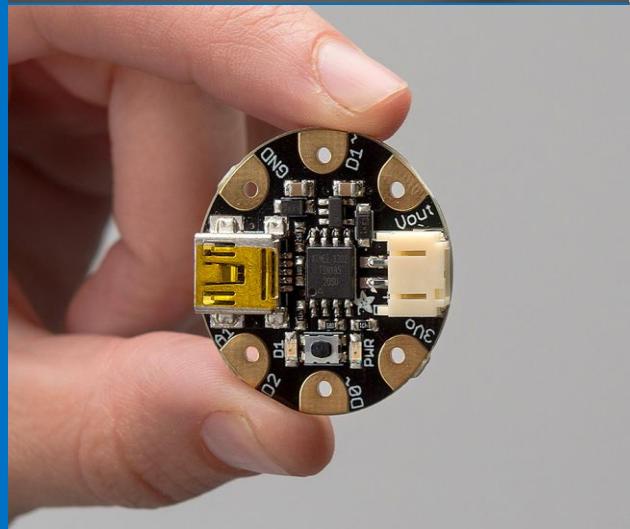
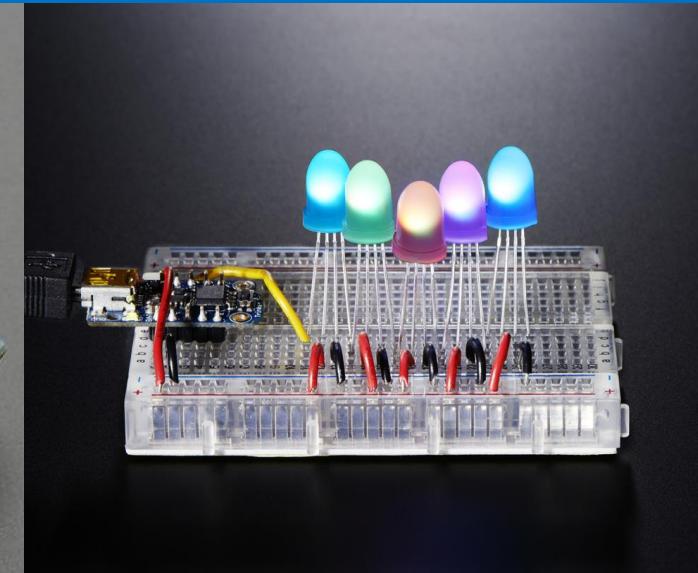
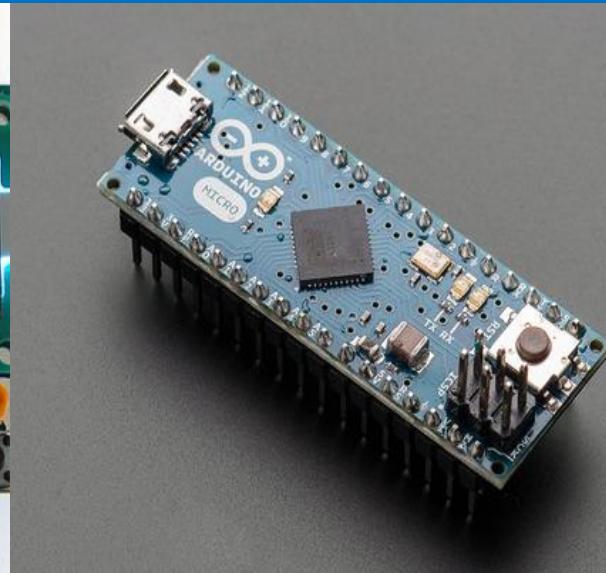
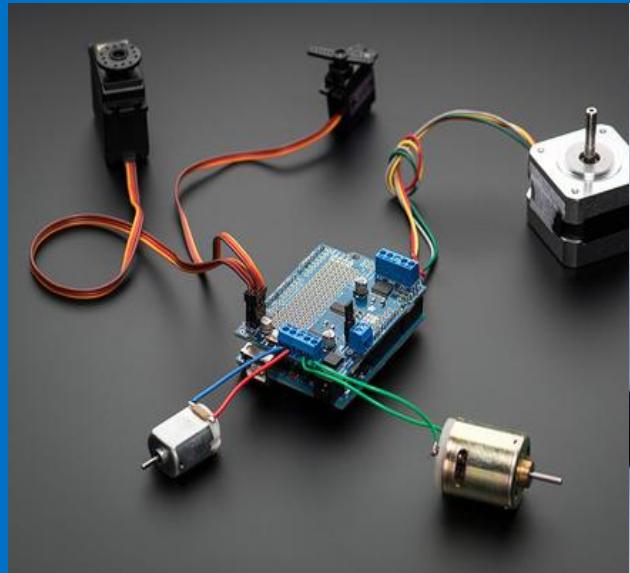
How to build a  
Baseball Pitching Machine  
Remote Controlled by Azure  
Cross platform  
Windows / Phone, I-Pad, Android



# Arduino Microcontroller Platform



# Components





# Appendix

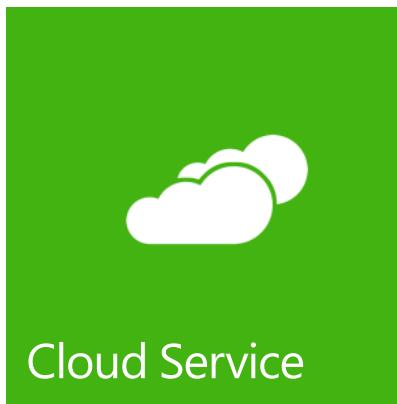
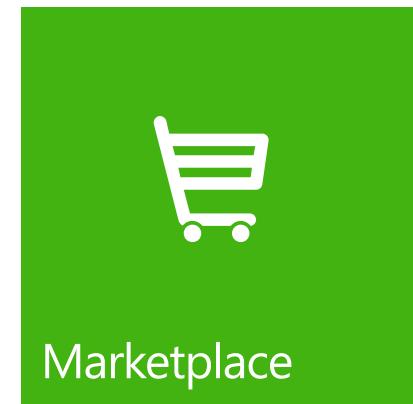
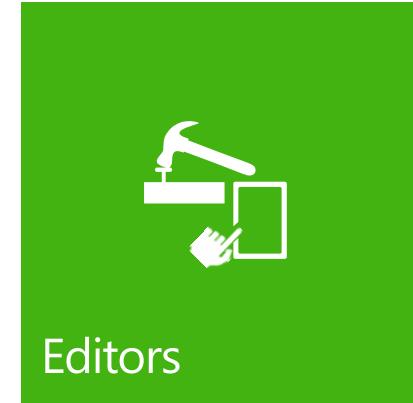
[touchdevelop.com](https://touchdevelop.com)



[research.microsoft.com/touchdevelop](https://research.microsoft.com/touchdevelop)



# touchdevelop: Product Overview





sell apps, get famous and rich

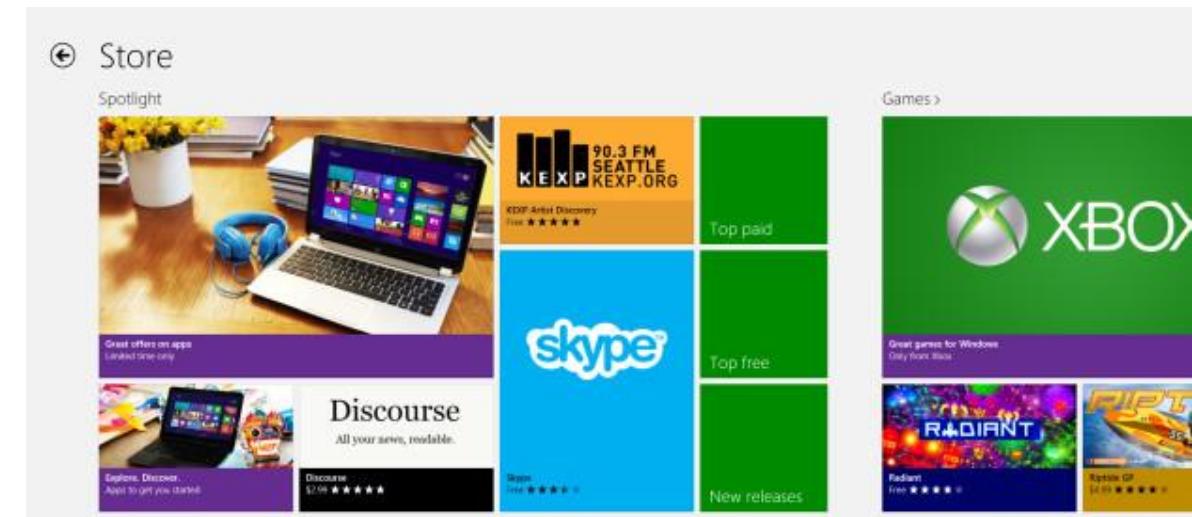
submit your scripts as real apps

Windows Store

Windows Phone Store

Web App

Android Google Play



[touchdevelop.com/apps](http://touchdevelop.com/apps)



# available APIs

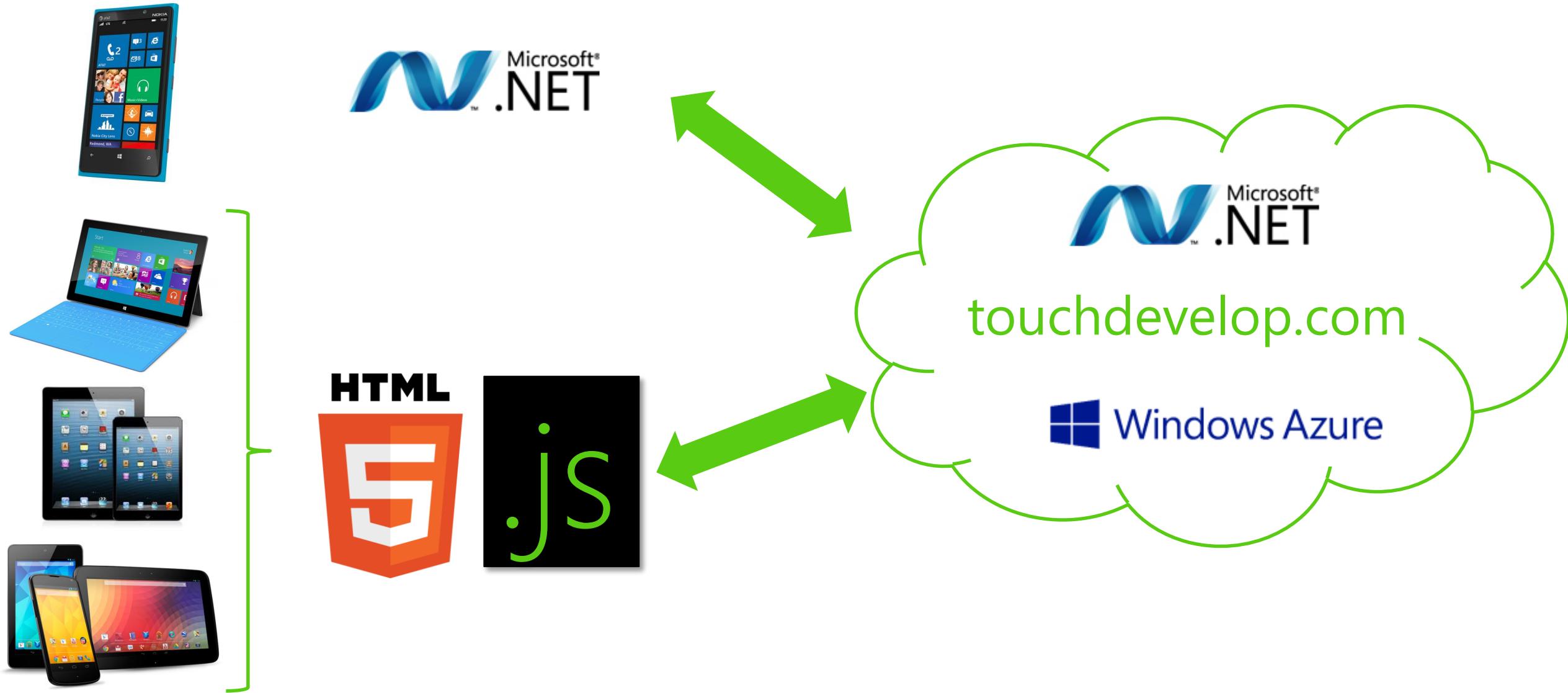
touch**develop** Windows Phone app  
exposes all features

camera, touch, accelerometer,  
compass, gyroscope, microphone, ...  
contacts, calendar, email, pictures, songs, ...  
web queries, search, **maps**, social networks  
graphics with physics engine  
tiles





# architecture





# script sharing

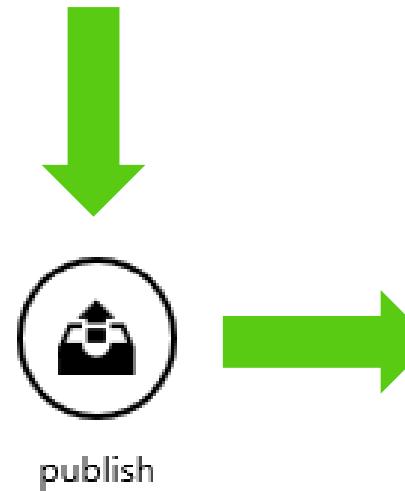
## script bazaar

central repository in cloud  
anyone can publish scripts  
you can discover other scripts  
scripts come with source code

### Create script

my cool game

create



new

- |  |   |
|--|---|
|  | my cool game<br>Nikolai@TouchDevelop<br>30 seconds ago :: /fbuy |
|  | my script<br>User3332<br>8 minutes ago :: /uupy                 |
|  | Dice Roller<br>David McMillan<br>12 minutes ago :: /yatj        |
|  | Bittu<br>NeoTheOne<br>an hour ago :: /uruy                      |
|  | Miles2Kilometers<br>SchraySoft                                  |



# be social

## programming: a social experience

user profile

discuss in forum

screenshots

give ❤ to scripts

notifications

The screenshot shows a forum interface for 'touchdevelop by Microsoft Research'. At the top, there are statistics: 466 posts, 222 comments, 416 likes, and 15 users. Below this is a search bar with the word 'text'. The main area displays several posts:

- pushpin test** by Pedro DeRose, posted 11 days ago. It includes a small globe icon.
- general discussion** by peli@touchdevelop, posted about 13 days ago. It includes a landscape photo icon.
- i am jay wye** by i am jay wye, posted about 13 days ago. It includes a user icon.
- text sprite test** by i am jay wye, posted about 13 days ago. It includes a red box icon.

On the right side of the interface, there is a watermark that reads 'touchdevelop by Microsoft Research'.



# Distributed state

sharing data in the cloud  
makes apps more social,  
fun, and convenient.

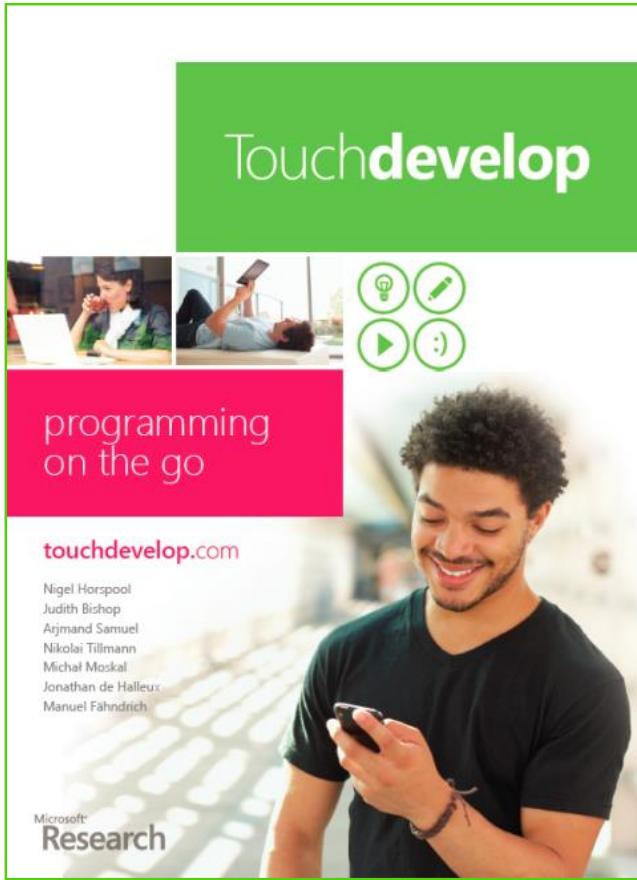
examples: games, settings,  
chat, favorites, ratings,  
comments, grocery list...

just tag your data as 'cloud',  
we synchronize and merge





# book, slides



available for free online

[touchdevelop.com/teach](https://touchdevelop.com/teach)

[touchdevelop.com/book](https://touchdevelop.com/book)

[touchdevelop.com/slides](https://touchdevelop.com/slides)



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