the PHYSICAL INTERFACE

josh clark
@bigmediumjosh
a quick trip to the near future
THERE ARE A MILLION WAYS WE COULD GET THIS WRONG
THERE ARE A MILLION WAYS WE COULD GET THIS WRONG so let’s think hard about how we might get it right
CALL RCLASS (AAA:21, MCC:FX3, FX4)
*L
C
CALCULATE STATISTICS ON DATA FROM LOW SPEED READER

SUM=0
SUMSG=0
TYPE 100

100 FORMAT("ENTER THE NUMBER OF VALUES TO CALCULATE STATISTICS ON",/)
ACCEPT 10,N

10 FORMAT(I)
DO 200 I=1,N
READ 1,110,V

110 FORMAT(E)
SUM=SUM + V
SUMSG=SUMSG + V*V
TYPE 120,I,V

120 FORMAT("VALUE",I,"IS",E,/

200 CONTINUE
SAMP=N
AVRG=SUM/SAMP
STD=SQRT(SUMSG/SAMP - AVRG**2)
TYPE 300,N,AVRG,STD

300 FORMAT("NUMBER OF VALUES",I,"MEAN",E,"STANDARD DEVIATION",E,/

END

*.
R FORT
? 
TOUCH DATA like a physical object
2 THE UNRELIABLE SCREEN

THE SCREEN HAS LONG SEEN A TRUTH TO ITS RELATIONSHIP TO OUR VISUAL INTERFACE. FOR MOST OF WEB DESIGN'S SHORT HISTORY, SCREENS WERE SEAMLESSLY INTEGRATED INTO THE USER INTERFACE. WE VIEWED THEM AS A SIMPLE TOOL FOR VISUAL DELIVERY, WITHOUT ENSURING THAT THEY WERE ACTUALLY USED.

However, this is changing. With more and more web content being viewed on mobile devices, the role of the screen is becoming increasingly important. This chapter explores how to design for touch, and what new challenges this presents for designers.

Josh Clark
DESIGNING FOR TOUCH

FOREWORD BY MANDI ROSE
our job is to TRANSLATE INTENT ➔ ACTION
DIGITAL ➔ PHYSICAL

PHYSICAL ➔ DIGITAL
THE SMARTPHONE IS THE FIRST HUGE IOT DEVICE
MOBILE gives COMPUTING POWER to IMMOBILE OBJECTS
Nappy Notifier
bit.ly/diaper-app
THE WEB HAS SENSOR SAVVY, TOO
www.w3.org/standards/techs/js

- RECORD AUDIO & VIDEO
- UNDERSTAND SPEECH
- MAKE & HEAR SOUND
- GPS LOCATION

- VIBRATE
- VIDEO CONFERENCE
- ACCELEROMETER
- AMBIENT LIGHT
www.w3.org/standards/techs/js

DO THIS TODAY
WHERE DO WE GO FROM HERE?
four kinds of physical interfaces

SENSOR INPUT TO THE WEB
four kinds of physical interfaces

SENSOR INPUT TO THE WEB

NOTIFICATION FROM THE WEB
four kinds of physical interfaces

SENSOR INPUT TO THE WEB
NOTIFICATION FROM THE WEB
AVATAR OF DIGITAL INFO
four kinds of physical interfaces

SENSOR INPUT TO THE WEB

NOTIFICATION FROM THE WEB

AVATAR OF DIGITAL INFO

PHYSICAL INTERACTION
the web gets physical

1. SENSOR INPUT TO WEB SERVICES
Generally, you don’t see that kind of behavior in a major appliance.
DO THIS TODAY
the web gets physical

2.

NOTIFICATION FROM WEB SERVICES
THIS IS THE INTERFACE
THIS IS THE APP
THIS IS THE BROWSER
WEB ≠ BROWSER
DESIGN
CALM
TECHNOLOGY
DO THIS TODAY
PHYSICAL INTERFACES FOR DIGITAL APIs
the web gets physical

3. PHYSICAL AVATAR OF DIGITAL INFO
Google has cataloged 1 BILLION ENTITIES, PEOPLE, PLACES & THINGS

https://stratechery.com/2016/googles-go-to-market-gap/
What if a physical store could do all the best things an online store can do?

LIZA KINDRED

@LizaK
Amazon Customer Review

“Lee's debut historical fiction simply made me fall for the history of America, cowboys, the Oregon Trail, unbreakable friendships, first loves, means to survival, racial in-differences and the wild, wild west.”

- ADITI SAHA

Under a Painted Sky
by Stacey Lee

4.8 stars - 78 reviews

as of 2/23/2016
My favorite book. It teaches the dangers and sorrows of life regret better than any nonfiction book ever could.
Top 10 Seattle (Eyewitness Top 10 Travel Guide)

Format: Paperback

List Price: $14.00
Price: $9.33  ✔️Prime
Save: $4.67 (33%)

In Stock.
Ships from and sold by Amazon.com. Gift-wrap available.
Big Magic: Creative Living Beyond Fear

$13.72

List price: $24.95
Save: $11.23
@LizaK asks: what if...

YOU COULD TOUCH A PRODUCT TO GET ITS INFO
@LizaK asks: what if...

YOU COULD TOUCH A ZIPCAR TO RENT IT INSTANTLY
@LizaK asks: what if...

YOU PAID JUST BY WALKING OUT OF THE STORE WITH A PRODUCT
UNLOCK DATA IN PHYSICAL OBJECTS
If I have to launch an app every time I want to use your physical product, or in order for it to be easy to use, you have failed me.
WHERE'S THE UNIVERSAL CONNECTOR NETWORK?
The Physical Web

bit.ly/physical-web
physical-web.org

DO THIS TODAY
THE INTERACTION IS STILL ON SCREEN
the web gets physical

4. PHYSICAL INTERACTION
Using the phone we can manipulate digital content and seamlessly exchange it between devices.
push the possibilities of everyday devices

DO THIS TODAY
it's not a challenge of technology

IT’S A CHALLENGE OF IMAGINATION
Open Hybrid is a platform for interaction with everyday objects.
It combines physical objects with the benefits of a flexible augmented user interface.

It is Open Source and based on Web-Technology and Arduino. Join our Community
Find a simple Arduino Yun example here and the Reality Editor in the iOS App Store

Design Guidelines

Direct Mapping
The need for new visual Paradigms for the Operation of the Internet of Things.

Learn, Setup and Operate
Think about the Reality Editor as a digital multi-tool for physical space.

How to Connect everything
How to connect the functionality of electronic devices.
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SCREENS CONFIGURE

OBJECTS OPERATE
DO THIS TODAY

genhybrid.org
WHAT IF THERE’S NO SCREEN AT ALL?
THIS IS THE
THING BEYOND
THE PHONE
ONE INTERFACE FOR OVER 300 SERVICES
Ready? Let's get started

Read our getting started guide for an overview of how users interact with your Alexa skill and to learn how to conduct a conversation with your customers. You can also follow these steps:

1. Design a Voice User Interface
   - Design an effective voice user interface to give users a great experience
     - See Voice Design Best Practices
   - Create a framework to map user requests to intents your service can handle
     - See Defining the Voice User Interface
   - Build out sample phrases so that your skill responds to user intents
     - See Sample Utterances

2. Build and Host Code
   - Set up your skill in AWS Lambda or another cloud-based hosting service
     - See Creating a Lambda Function
   - Code your skill
     - See Handling Requests
   - Review sample code in Node.js or Java
     - See Alexa Skills Kit Samples

3. Submit Your Skill
   - Add your skill to the developer portal
     - See Registering Skills
   - Test your skill using our service simulator or on Amazon Echo
     - See Testing a Skill
   - Submit your skill for certification
     - See Submission Checklist
developer.amazon.com

DO THIS TODAY
four kinds of physical interfaces

SENSOR INPUT TO THE WEB
NOTIFICATION FROM THE WEB
AVATAR OF DIGITAL INFO
PHYSICAL INTERACTION
WHY
DO WE MAKE IT?
TO WHOSE BENEFIT?
UPDATE

You have 15 pairs of underwear left.
   [Ok] [buy more underwear] [find help online]

Your cat checked in at the litterbox.

Your microwave just heated a lasagna.

Record: You stared out the window for 23 minutes.
   [Ok] [post your score]

Your couch likes your microwave's status update.

It's raining again.
   [Ok]

15 of your things are broken.

You haven't left the house in 5 days.
   [Ok]
the goal is not to make things talk

IT’S TO IMPROVE THE CONVERSATION
SURVEILLANCE CAPITALISM
HOW SMART DOES YOUR BED HAVE TO BE BEFORE YOU’RE AFRAID TO GO TO SLEEP AT NIGHT?

Rich Gold
A robot vacuum tried to eat its sleeping owner's head

By Molly McHugh Follow on February 08, 2015

The future of robots is simultaneously thrilling and terrifying. For every mental image of sweet Wall-E, there's one of Terminator's invincible red eye. Will our robotic overloads be task-oriented, adorable, and friendly... or will they try to murder us in our sleep?
GIVE THE ROBOTS GOOD VALUES & GOOD MANNERS
$deity$ spare us all from bright young things with an algorithm, a data set, and the notion that history, causality, & culture are irrelevant.
AMPLIFY OUR HUMANITY
check the values of your creation

DO THIS TODAY
THANKS!

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