心理與神經資訊學
(Psychoinformatics & Neuroinformatics)

課號：Psy1007　　教室： 博雅 101

識別碼：20710100　　時間： 四 234


聽說老師徹夜未眠
?

後端技術
(PHP & Node.js)

PHP vs. Django

這兩種後端的方法要學 / 用哪一種？

PHP

- 語法類似 C/Java/Javascript/Perl
- 適合靜態為主動態為輔的網頁
- 易學且使用人口和參考文件都豐富

Django

- Python 語法 (但有很多自己的規定)
- 適合動態為主靜態為輔的網頁
- 難學且使用人口和參考文件都較少

PHP vs. Node.js

這兩種後端的方法要學 / 用哪一種？

PHP

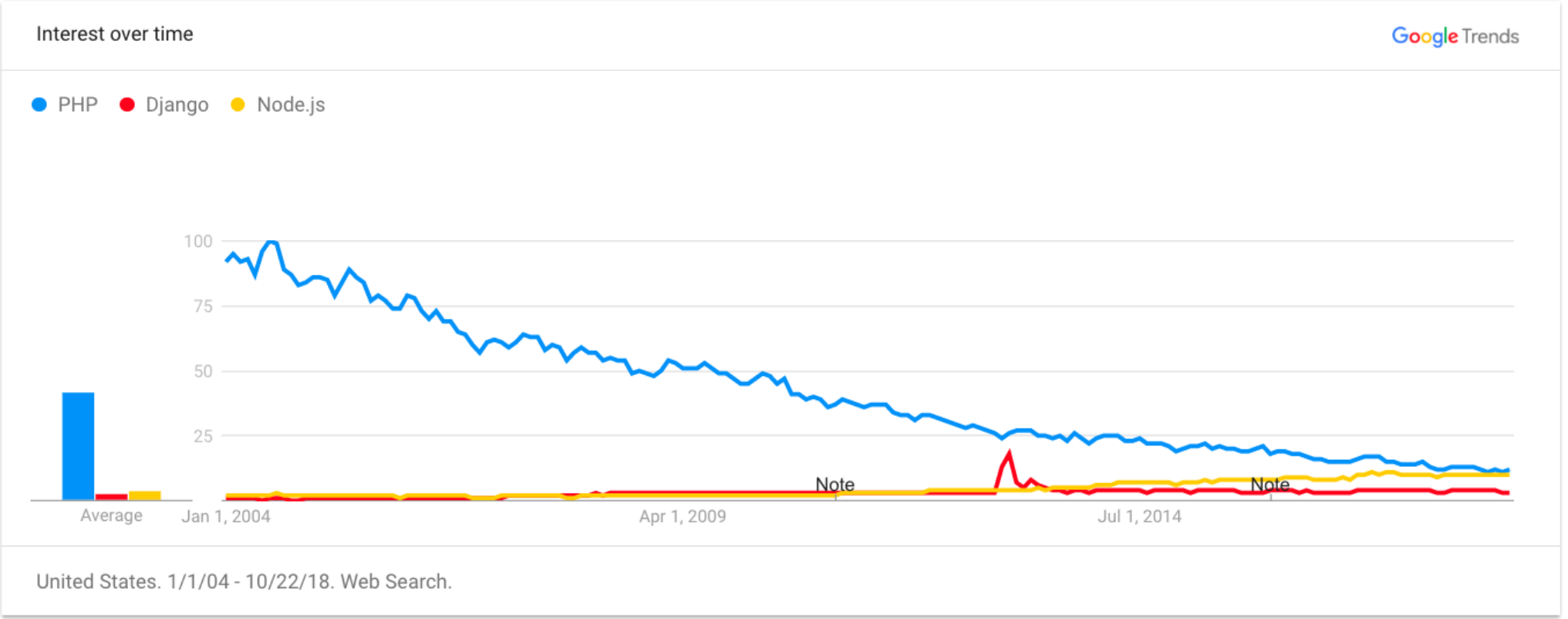
- 語法類似 C/Java/Javascript/Perl
- 效能較差
- 能和 HTML 混搭
- 易學且使用人口和參考文件都豐富

Node.js

- Javascript 語法 (但要處理很多 server events)
- 效能較好 (因 non-blocking I/O)
- 不能和 HTML 混搭
- ~~使用人口較少且~~學習門檻較高

PHP vs. Django vs. Node.js

這三種後端的流行程度為何？

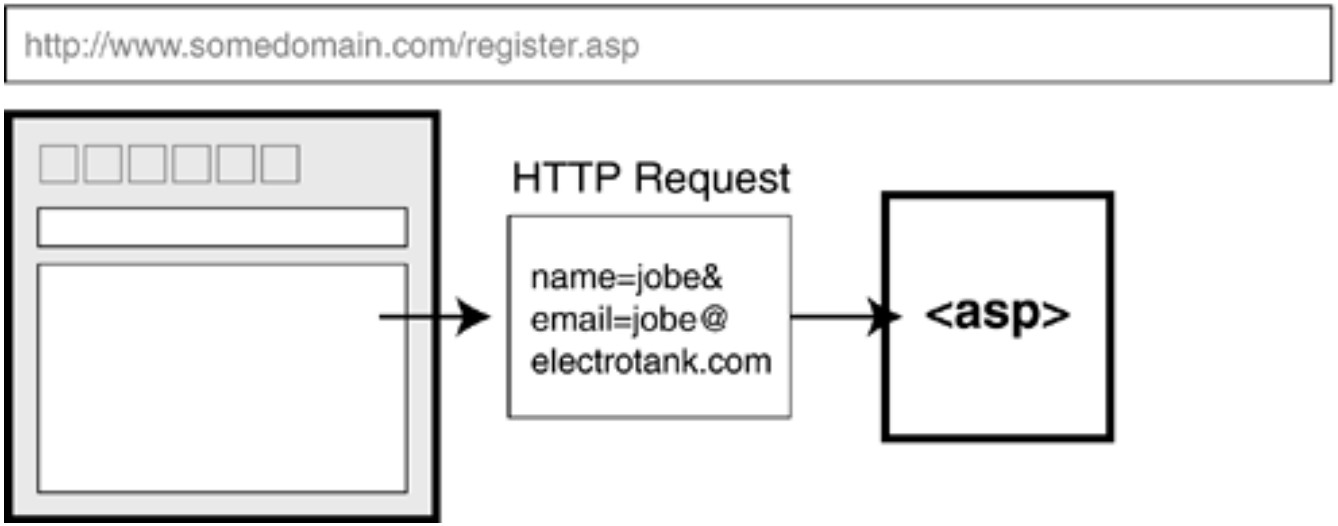


在米國 PHP 和 Node.js 快黃金交叉了

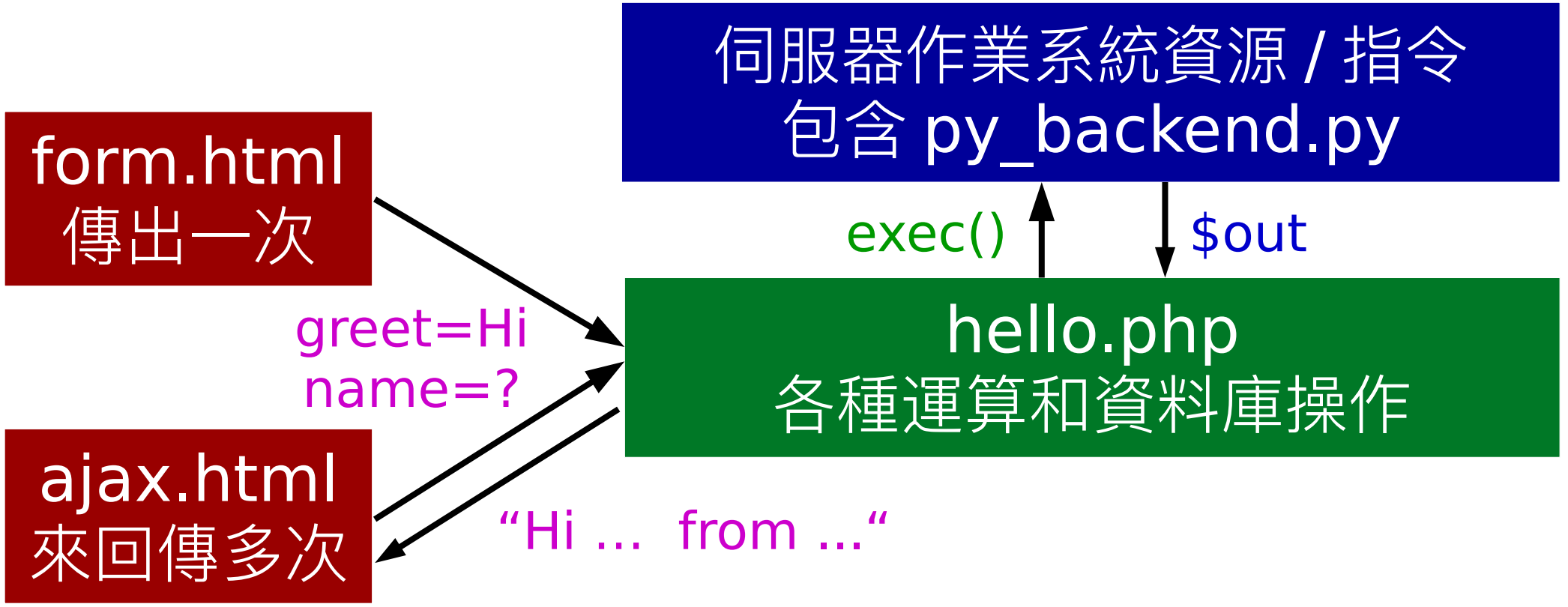
Request 傳送資料方式：Get vs. Post

Using GET

Using POST 比較安全



前後端傳表格 / 文字資料範例 (1/2)



form.html

```
<form name="input" action="hello.php" method="get">
<input type="hidden" name="greet" value="Hi">
Username: <input type="text" name="name">
<input type="submit" value="Submit">
</form>
```

前後端傳表格 / 文字資料範例 (2/2)

hello.php

```
<?php
 $NAME=$_GET['name'];
 $IP=$_SERVER['REMOTE_ADDR'];
 echo $_GET['greet']." $NAME from $IP <br>";
 exec("python py_backend.py $NAME",$out);
 exec("echo $NAME >> data.txt");  // append to data.txt
 for($i=0;$i<count($out);$i++){
  echo $out[$i].'<br>';
 }
?>
```

py_backend.py

```
import sys
print(str(sys.argv))
```

前後端傳{JSON}資料範例

後端產生 JSON 格式的資料
前端用 jQuery 的 $.getJSON()

test_json.php: 後端產生:
{"name": "John" , "age": 35}
test_json.html: 前端取得上述資料後秀出 John35

test_jsonp.php: 後端產生:
({"name": "John" , "age": 35})
test_jsonp.html: 前端取得上述資料後秀出 John35

flickr.html: 前端取得 Flickr 四張圖片網址各做成 <img src=...> 後加入

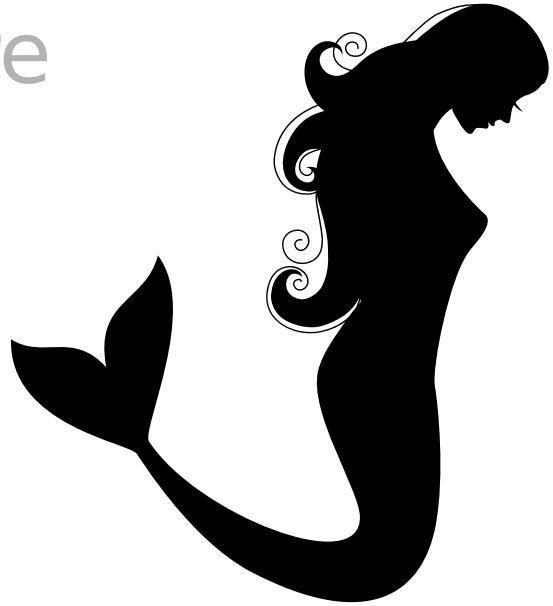
JavaScript 與 PHP 混搭範例

rmet/index.php 用 JS 的 nextPage() 累計次數
並呼叫自己 index.php?i=k 來把圖片換成 k.jpg

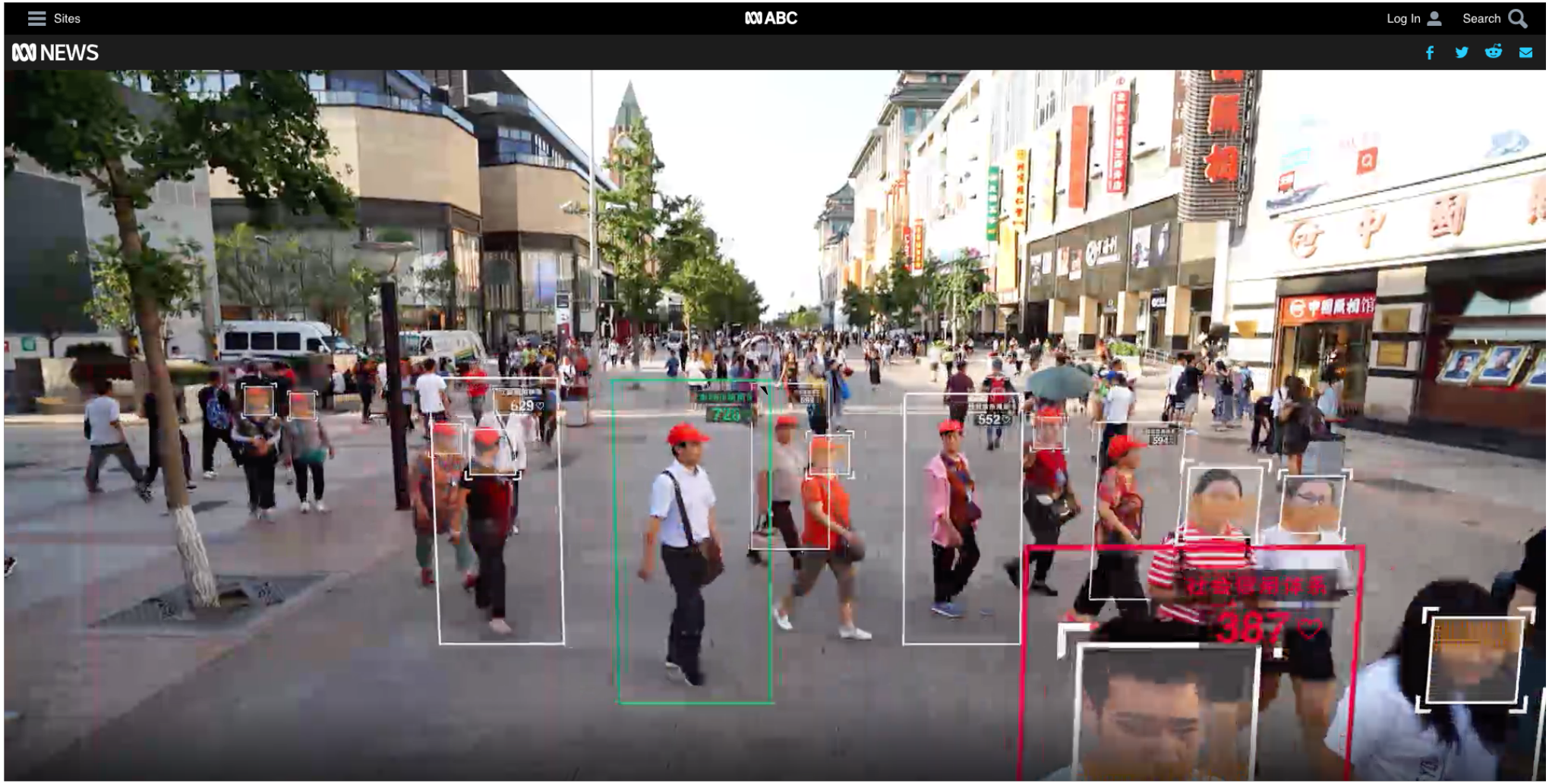
<?=$a?> 是 <? echo $a; ?> 的簡寫

$a=(empty($_GET['i']) ? 1 : $_GET['i']) 可展開為:

```
If(empty($_GET['i'])){  //if not there
  $a=1;
}
else{
  $a=$_GET['i'];
}
```

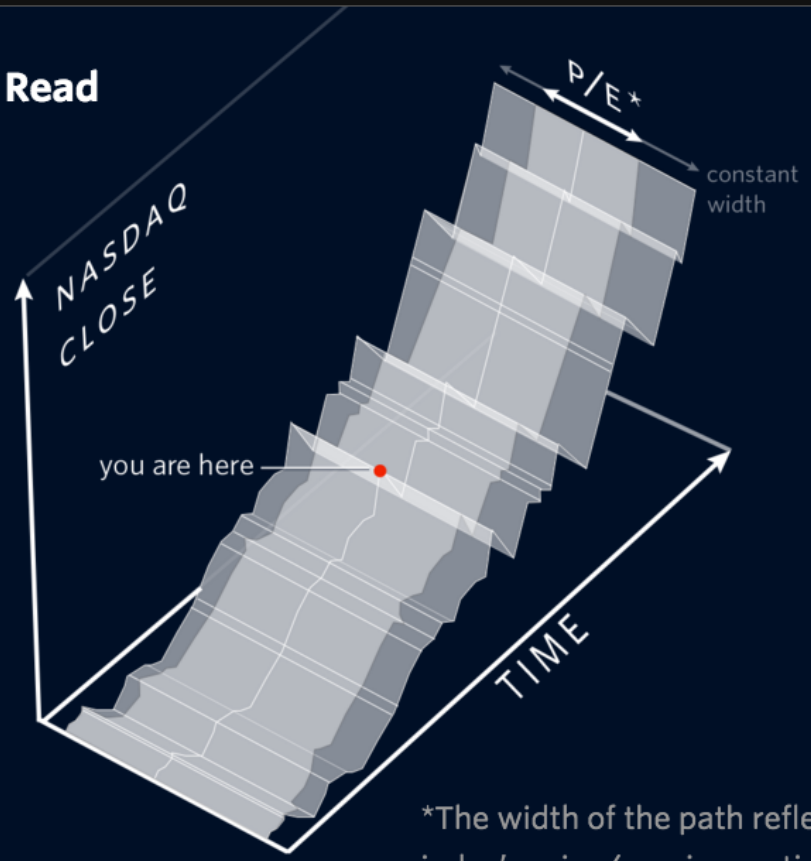


驚人的網頁程式範例 (1/4)



驚人的網頁程式範例 (2/4)

WSJ

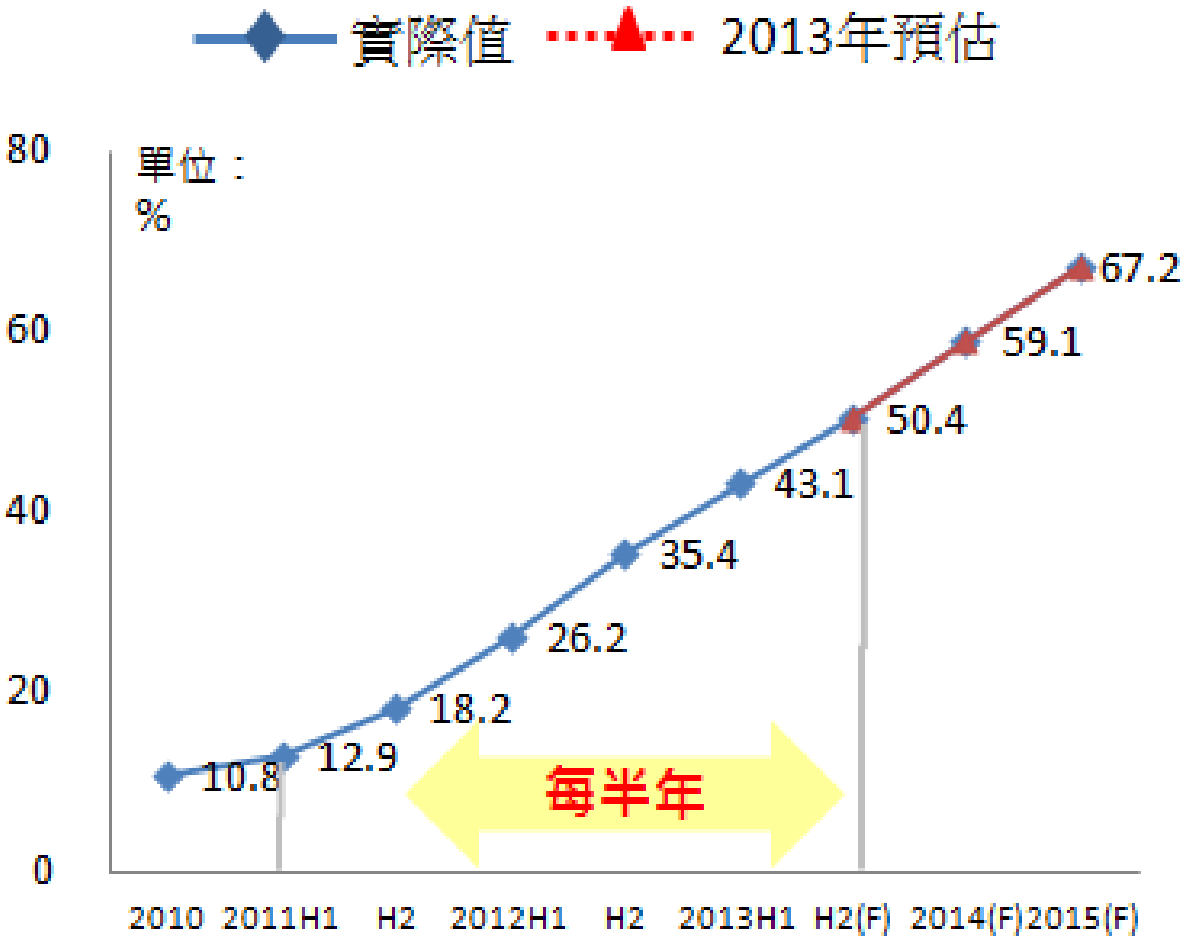


驚人的網頁程式範例 (3/4)

驚人的網頁程式範例 (4/4)

手機研究與技術

台灣智慧型手機市佔率



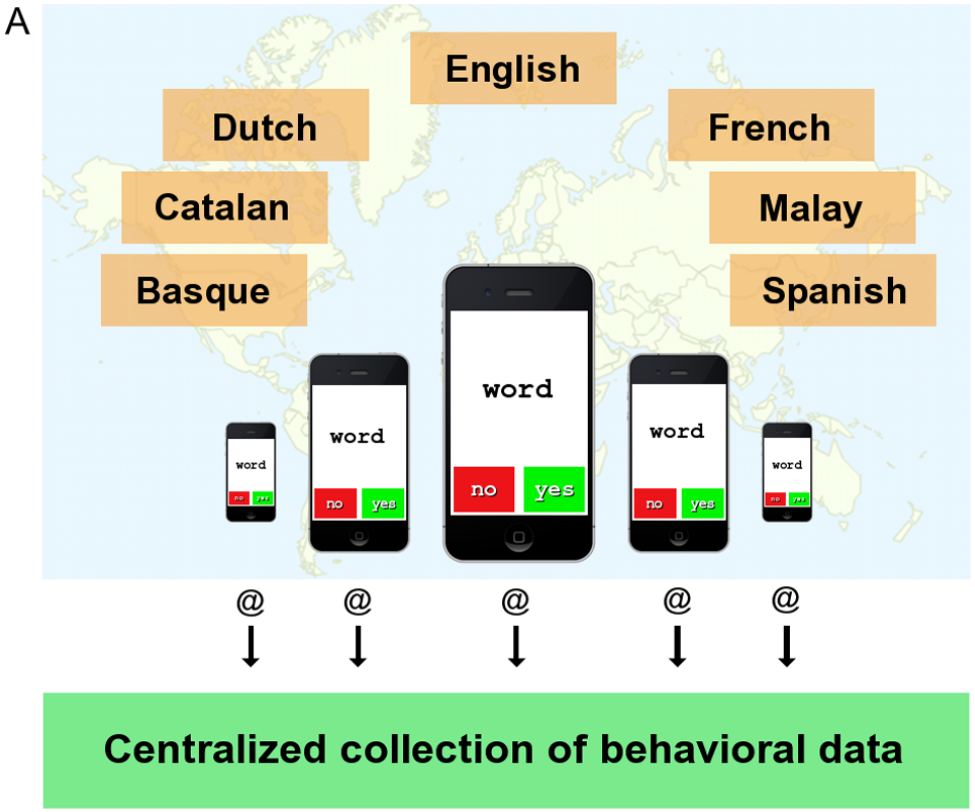
年度	普及率 (%)	推估人口 (千人)
2010	10.8	2,296
2011H1	12.9	2,743
2011H2	18.2	3,870
2012H1	26.2	5,571
2012H2	35.4	7,527
2013H1	43.1	9,165
2013H2(F)	50.4	10,725
2014(F)	59.1	12,563
2015(F)	67.2	14,294

Q: 請問您是否持有智慧型手機？

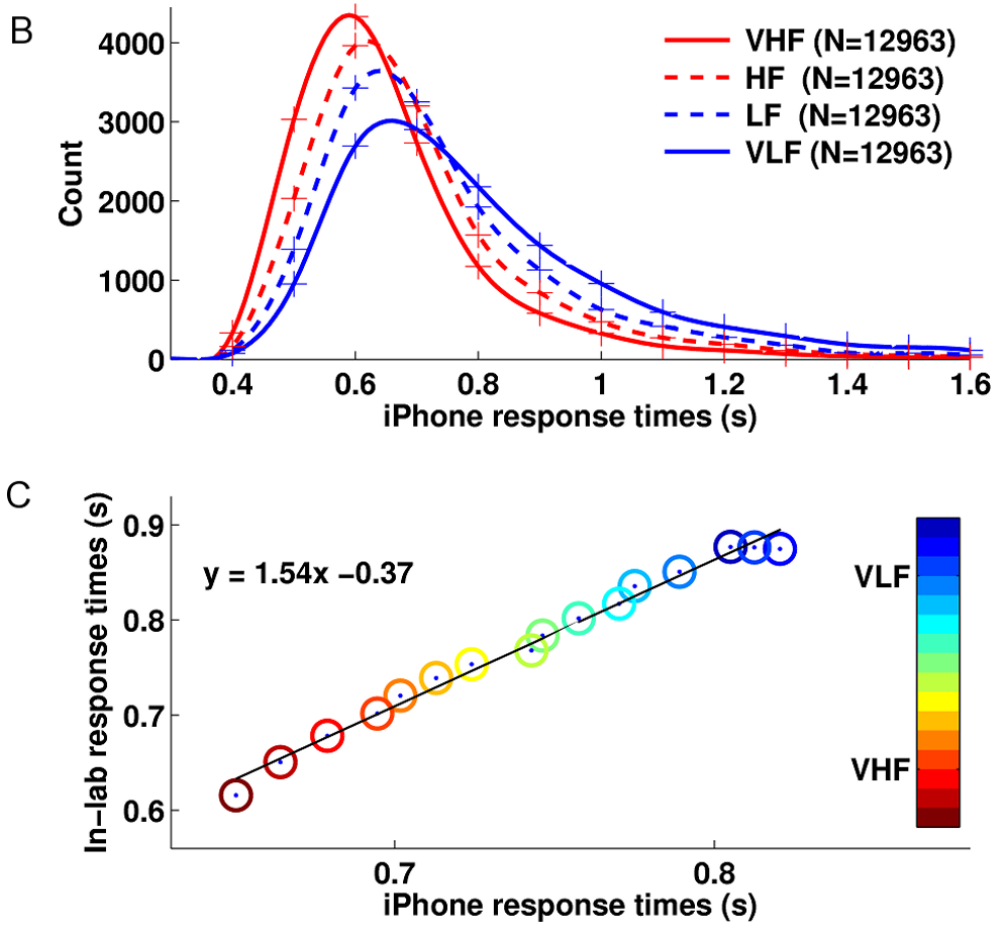
資料來源：資策會FIND(2013)/經濟部技術處「服務創新體驗設計系統研究與推動計畫」

調查時間：2013年3月21日~5月8日，調查有效樣本：970份

手機研究的資料可靠性

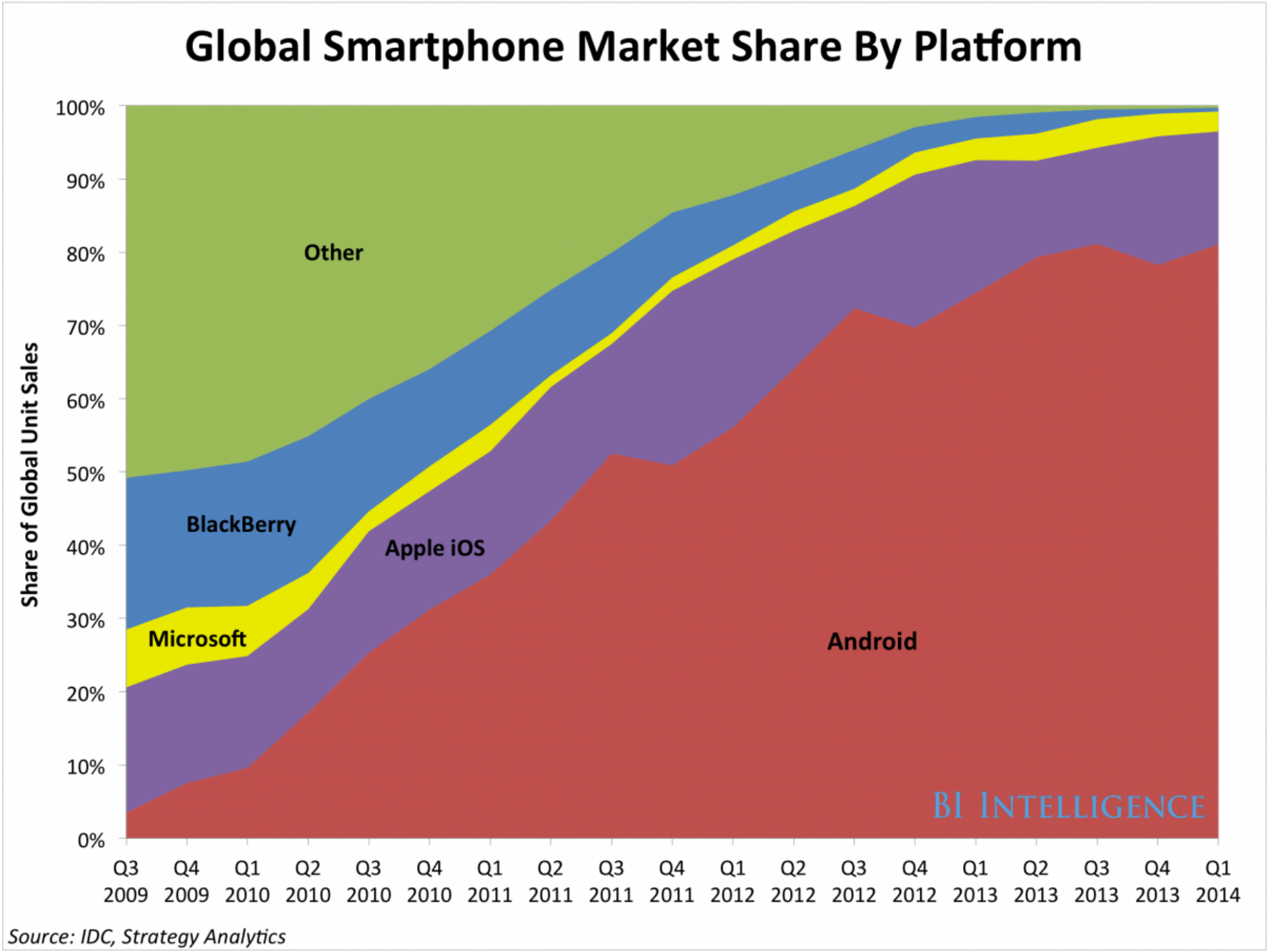


Dufau et al., 2011



這是另一個例子

智慧型手機作業系統

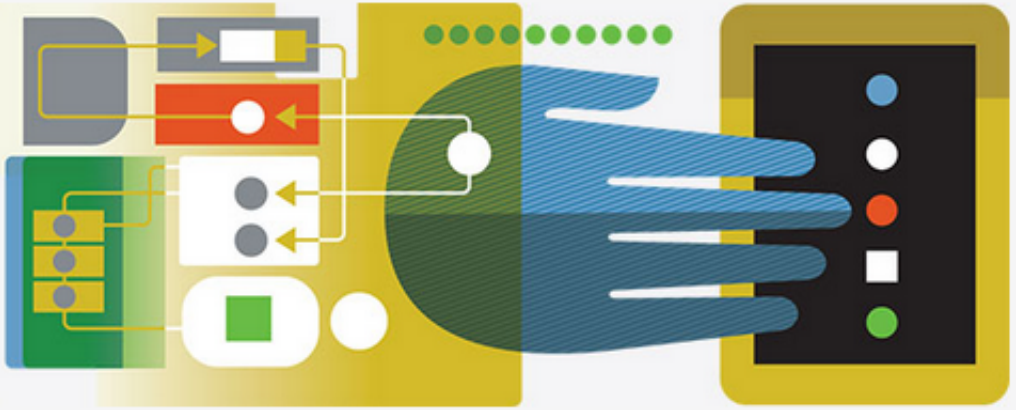

Global Smartphone Market Share By Platform
Share of Global Unit Sales
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Other
BlackBerry
Apple iOS
Microsoft
Android
BI INTELLIGENCE
Q3 2009
Q4 2009
Q1 2010
Q2 2010
Q3 2010
Q4 2010
Q1 2011
Q2 2011
Q3 2011
Q4 2011
Q1 2012
Q2 2012
Q3 2012
Q4 2012
Q1 2013
Q2 2013
Q3 2013
Q4 2013
Q1 2014
Source: IDC, Strategy Analytics

Responsive Design

心理學案例研究：CANTAB

貴貴 der

The leading global provider of cognitive assessment software

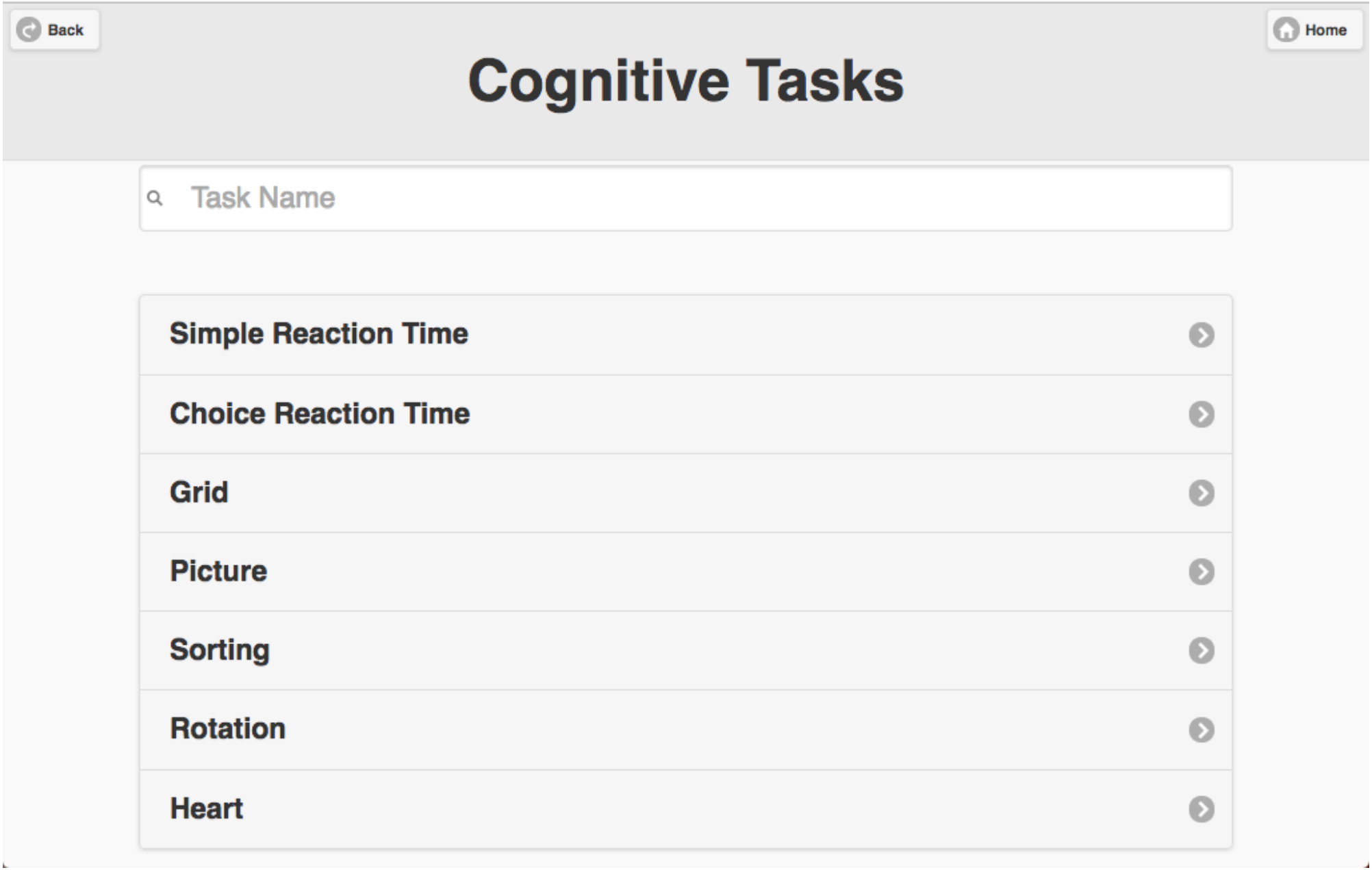


Academic studies

Cognitive Research

Cognitive Research	Cantab Training
Cognitive Tests	Cantab Ignition resources
Funding Support	

心理學案例研究：CAN'TAB



Experience Sampling Method

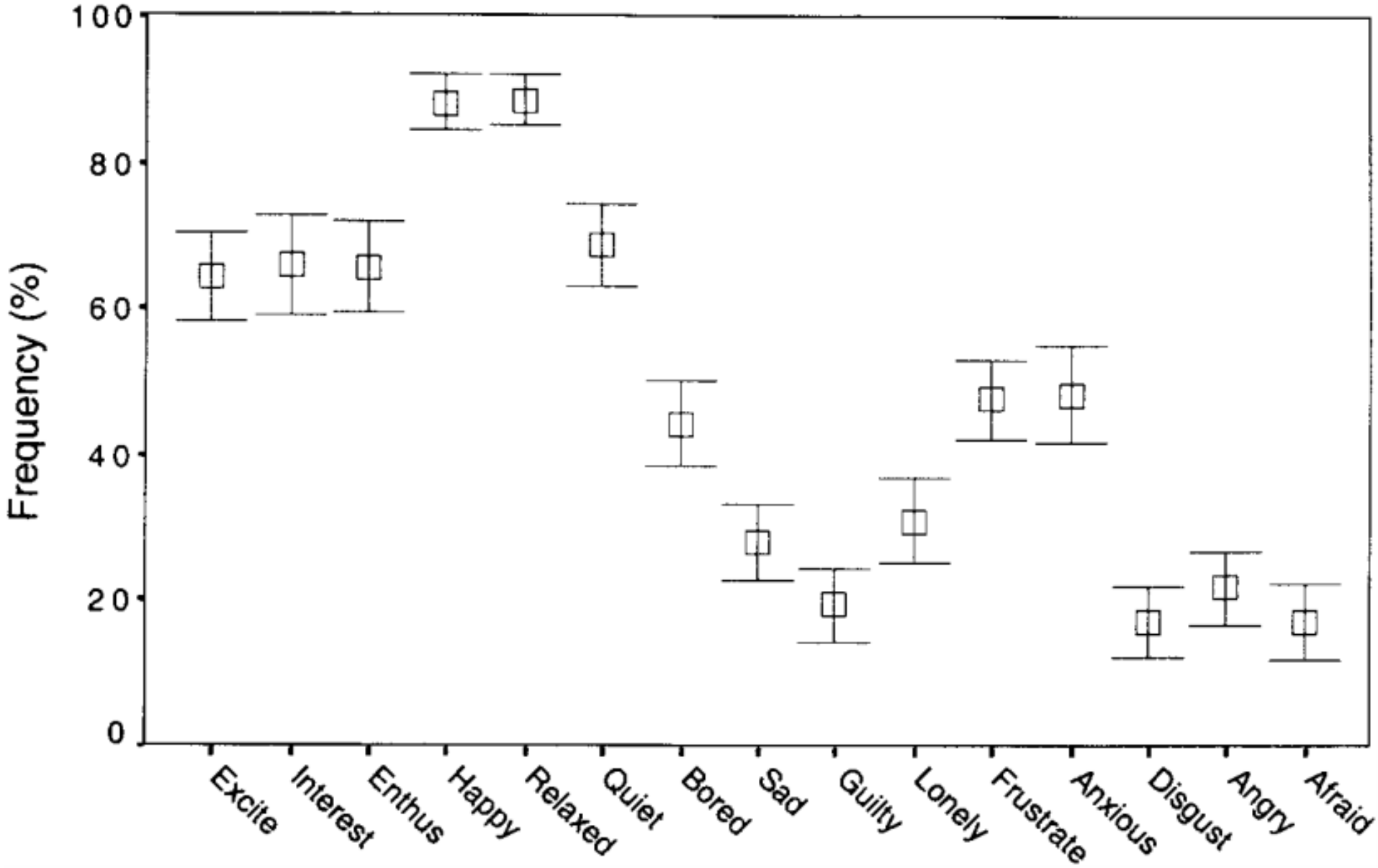
在 70 年代左右由 Csikszentmihalyi與 Larson 所發展

“ 你現在在幹嘛 ?”
“ 你現在的情緒為何 ?”

ESM的信度和效度竟然都不錯

- ~80% 的配合填答率
- 中到高程度的折半信度
- 經驗抽樣結果和人格特質相關

用 ESM 研究情緒


Frequency (%)
100
80
60
40
20
0
Excite
Interest
Enthus
Happy
Relaxed
Quiet
Bored
Sad
Guilty
Lonely
Frustrate
Anxious
Disgust
Angry
Afraid

簡單的 ESM 實作

movisensXS PRICING SIGN IN

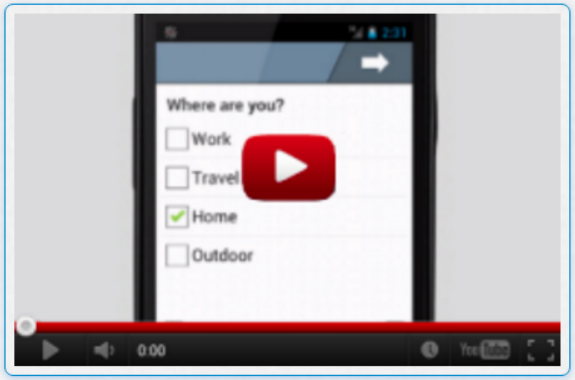
movisensXS

eXperience Sampling for Android!

movisensXS is the next generation research tool for ambulatory assessment. Ambulatory assessment refers to the use of computer-assisted methodology for self-reports, behavior records, or physiological measurements, while the participant undergoes normal daily activities. This approach includes the experience sampling method (ESM) a.k.a. ecological momentary assessment (EMA).

Launch your free study today!

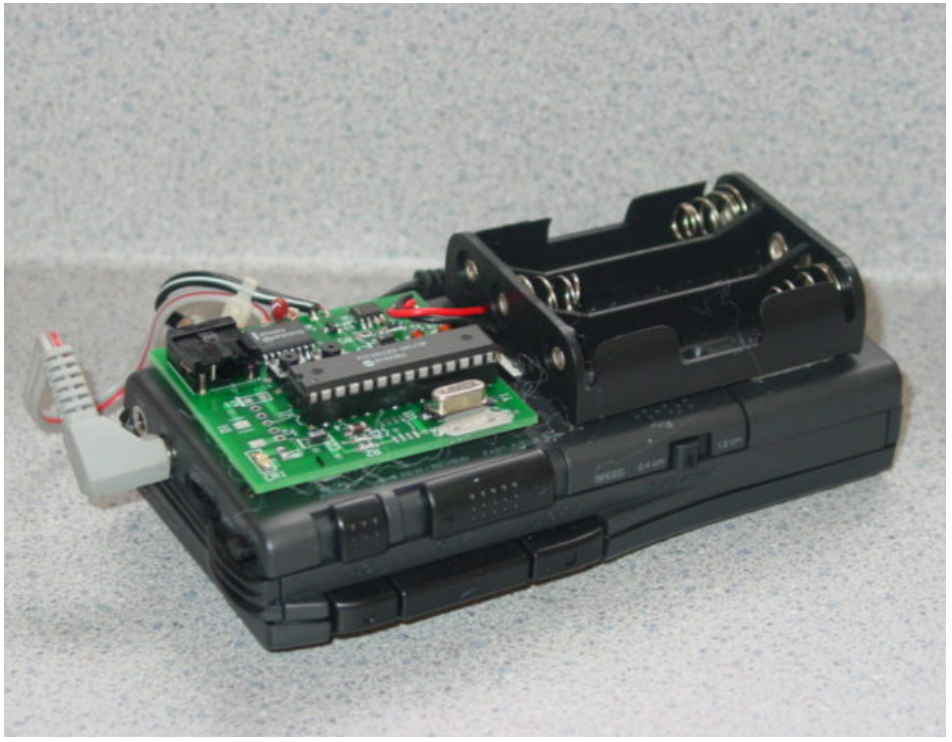
Start now »

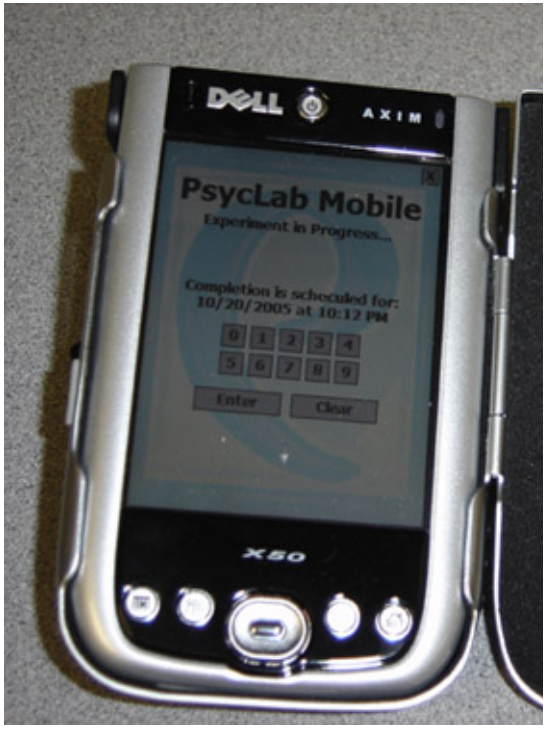


Demo: Launch your study in 2 minutes!

Electronically Activated Recorder

EAR 由 Matthias Mehl發展





幾天內，每隔 12 分"主動"錄音 30 秒

用EAR來研究大學生都在幹嘛

Mapping Students' Social Environment: Judges' Reliabilities and Base Rates for the Electronically Activated Recorder Ratings of Participants' Daily Interactions, Activities, and Locations Across 4 Days of Monitoring

Category	Judges' reliability	Base rate (%)			
		M	*SD*	Min	Max
Interaction					
Alone	.93	68.6	15.0	37.0	97.6
Talking	.99	27.9	12.8	1.7	56.1
To others	.99	24.2	12.3	1.7	55.4
On the phone	1.00	3.8	3.2	0.0	13.3
Laughing	.86	5.9	3.9	0.0	15.8
Activity					
Music on	.89	13.5	9.7	0.0	41.4
TV on	.95	14.6	12.2	1.1	47.5
Computer	.96	8.5	7.4	0.0	38.5
Reading	.12	11.3	10.2	0.0	34.0
Working	.95	5.1	9.7	0.0	37.0
Eating	.64	2.6	2.2	0.0	11.8
Lecture	.98	11.3	6.5	0.0	29.0
Amusement	.71	14.1	18.0	0.0	71.4
Location					
Apartment	.97	56.2	17.9	11.4	86.5
Outdoors	.90	7.2	5.2	1.0	32.9
In transit	.85	4.1	4.2	0.0	16.0
Restaurant	1.00	2.1	3.7	0.0	24.7
Other public places	.86	27.7	14.4	5.3	70.0

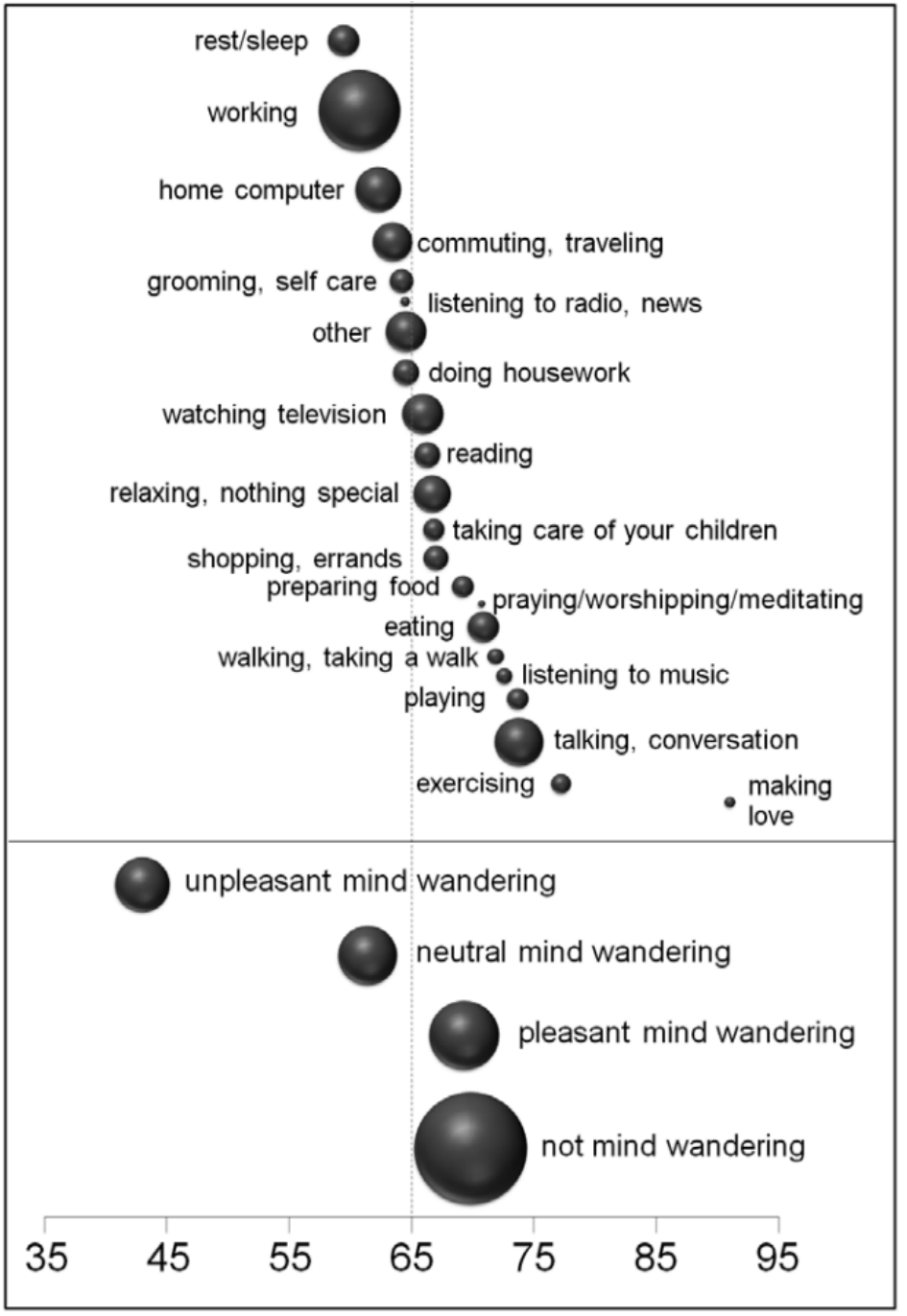
Note. $N = 49$; reliability coefficients are Cronbach's alphas based on six transcribers scoring 88 intervals. Min = minimum; Max = maximum.

心理學案例研究：男女誰多話？

Sample	Year	Location	Duration	Age range (years)	Sample size (*N*)		Estimated average number (SD) of words spoken per day	
					Women	Men	Women	Men
1	2004	USA	7 days	18–29	56	56	18,443 (7460)	16,576 (7871)
2	2003	USA	4 days	17–23	42	37	14,297 (6441)	14,060 (9065)
3	2003	Mexico	4 days	17–25	31	20	14,704 (6215)	15,022 (7864)
4	2001	USA	2 days	17–22	47	49	16,177 (7520)	16,569 (9108)
5	2001	USA	10 days	18–26	7	4	15,761 (8985)	24,051 (10,211)
6	1998	USA	4 days	17–23	27	20	16,496 (7914)	12,867 (8343)
					Weighted average		16,215 (7301)	15,669 (8633)

Mehl et al., 2007, *Science*

心理學案例研究：何時較開心？



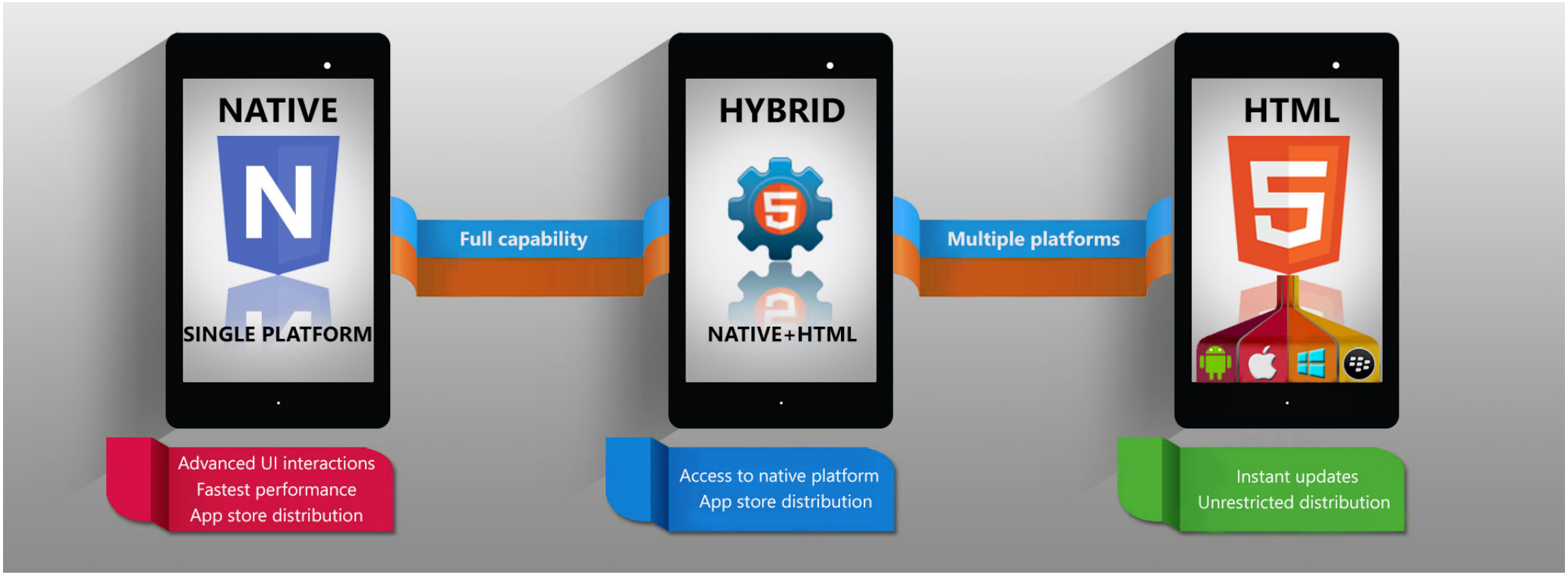
Killingsworth & Dilbert, 2010, *Science*

智慧型手機革命

Figure 1. *An off-the-self iPhone 4, representative of the growing class of sensor-enabled phones. This phone includes eight different sensors: accelerometer, GPS, ambient light, dual microphones, proximity sensor, dual cameras, compass, and gyroscope.*

Lane et al., 2010

手機程式的分類

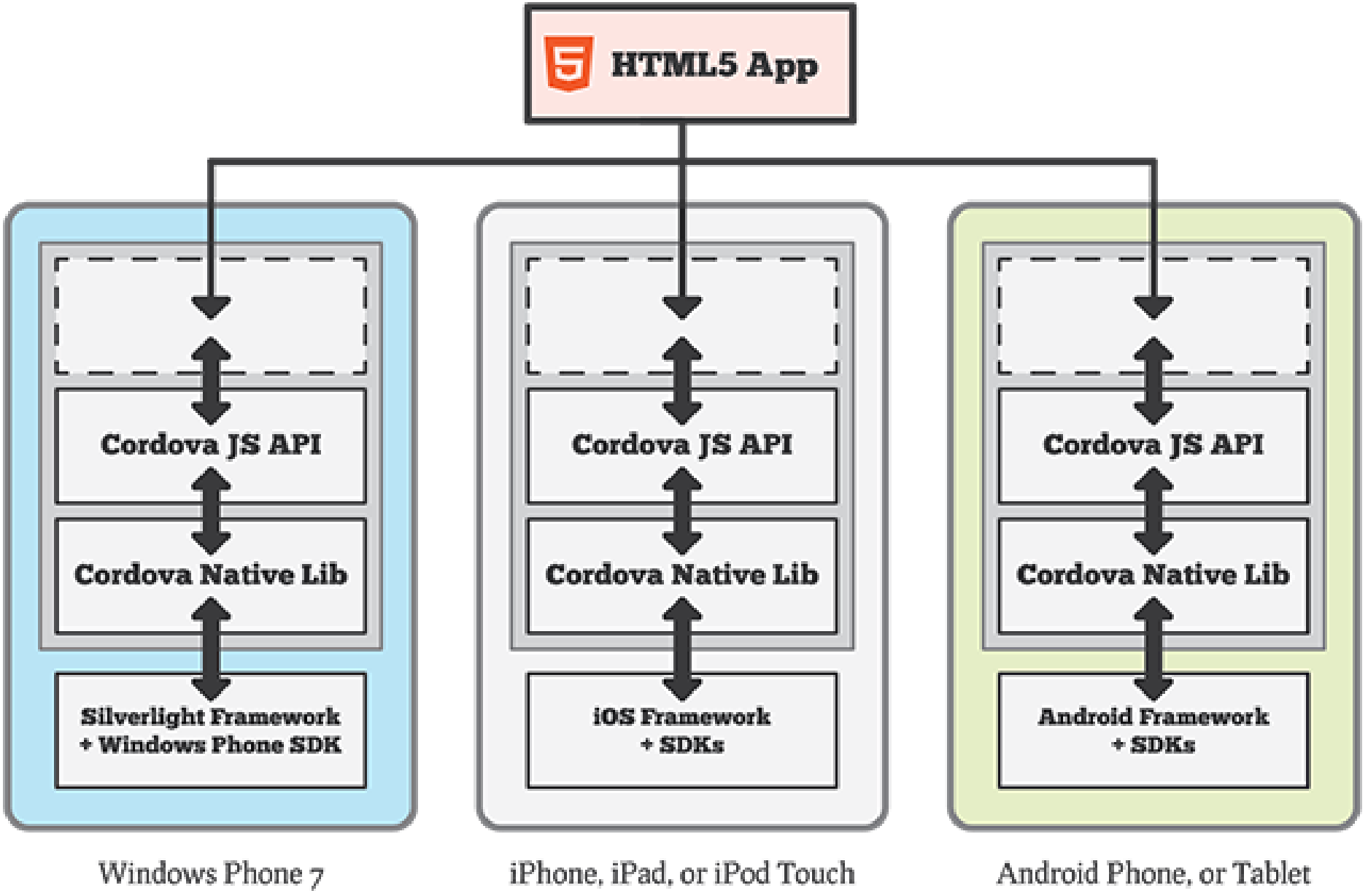


Native App: Android SDK (JAVA) + Xcode (Objective C)

Web App: HTML5 + CSS3 + Javascript/jQuery

Hybrid App: Web App + PhoneGap/Cordova (Javascript)

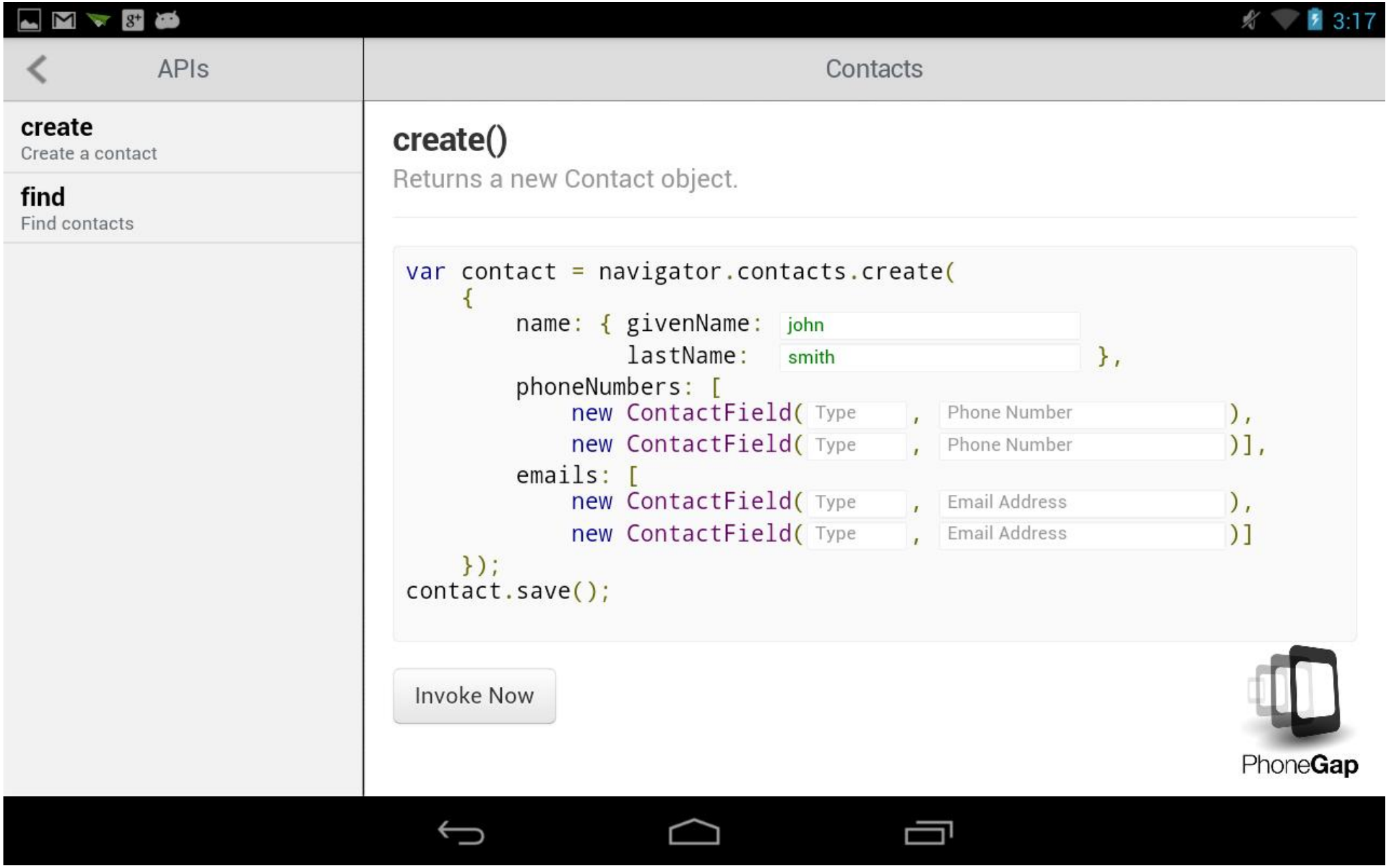
PhoneGap/Cordova Framework



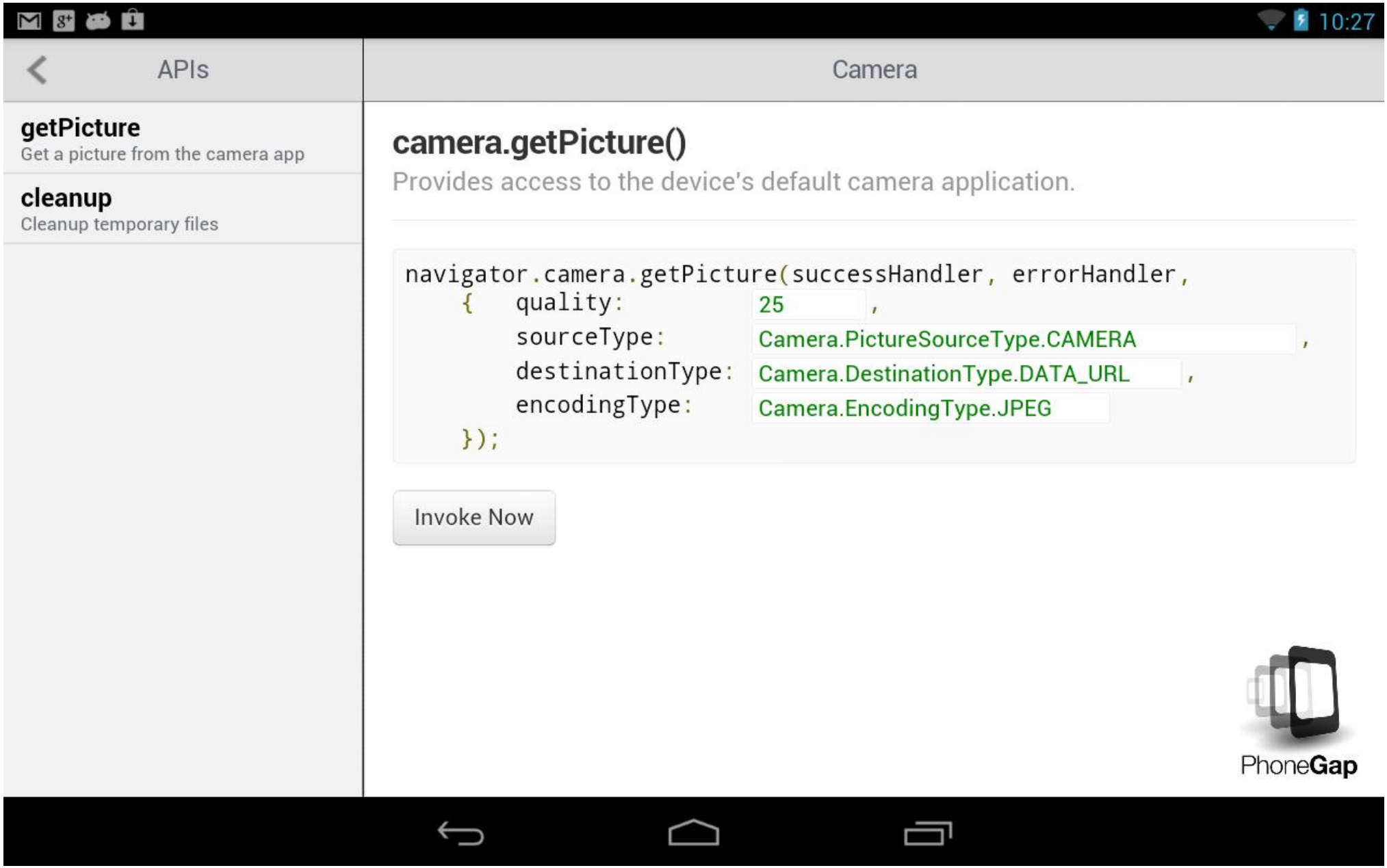
PhoneGap/Cordova APIs

	iOS iPhone / iPhone 3G	iOS iPhone 3GS and newer	Android	OS 4.6-4.7	OS 5.x	OS 6.0+	WebOS	WP7	Symbian	Bada
ACCELEROMETER	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
CAMERA	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓
COMPASS	✗	✓	✓	✗	✗	✗	✗	✓	✗	✓
CONTACTS	✓	✓	✓	✗	✓	✓	✗	✓	✓	✓
FILE	✓	✓	✓	✗	✓	✓	✗	✓	✗	✗
GEOLOCATION	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MEDIA	✓	✓	✓	✗	✗	✗	✗	✓	✗	✗
NETWORK	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOTIFICATION (ALERT)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOTIFICATION (SOUND)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NOTIFICATION (VIBRATION)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
STORAGE	✓	✓	✓	✗	✓	✓	✓	✓	✓	✗

PhoneGap/Cordova Example 1



PhoneGap/Cordova Example 2



本週作業

學習前後端傳輸資料

1. 修改 07_Codes 中的 colors 程式，使其 submit 後能將作答結果送到自己開發，能秀出平均正確率與反應時間給受試者的 scores.php 。

---------- 這是隨你 / 妳要不要做的分隔線 ----------

2. 把 Facebook Login加入到 colors 的程式中，使受試者分數能以具名的方式儲存在後端。

Game Over