Projet de Développement Logiciel

http://mathieuacher.com/teaching/PDL/

Master 1 - MIAGE

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UNIVERSITÉ DE RENNES 1

istic Informatique Électronique

PDL: objectifs pédagogiques

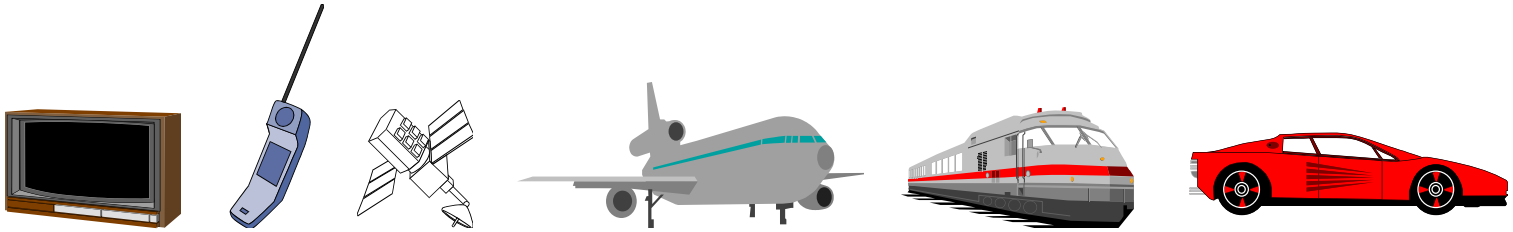
- Pratique et (re-)visite de votre **cursus**
  - Modélisation/UML, Programmation OO, test, design patterns, etc
  - Outils: git, IDE, Maven, intégration continue, documentation
  - Méthodes: travail en groupe, dates limites
- Une **expérience** de la difficulté du développement logiciel
  - indispensable pour votre future vie professionnelle
- **Contribution** à un projet réel, open source

Développer du logiciel ~=

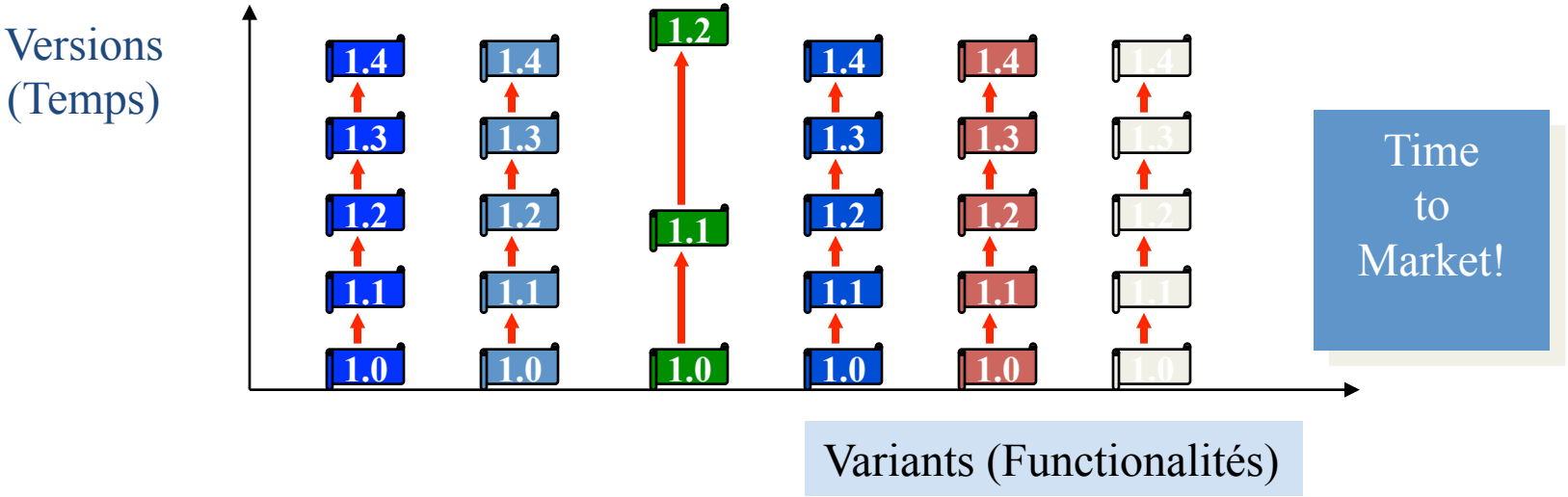
« Multi-Person Construction Of Multi-Versions Programs »

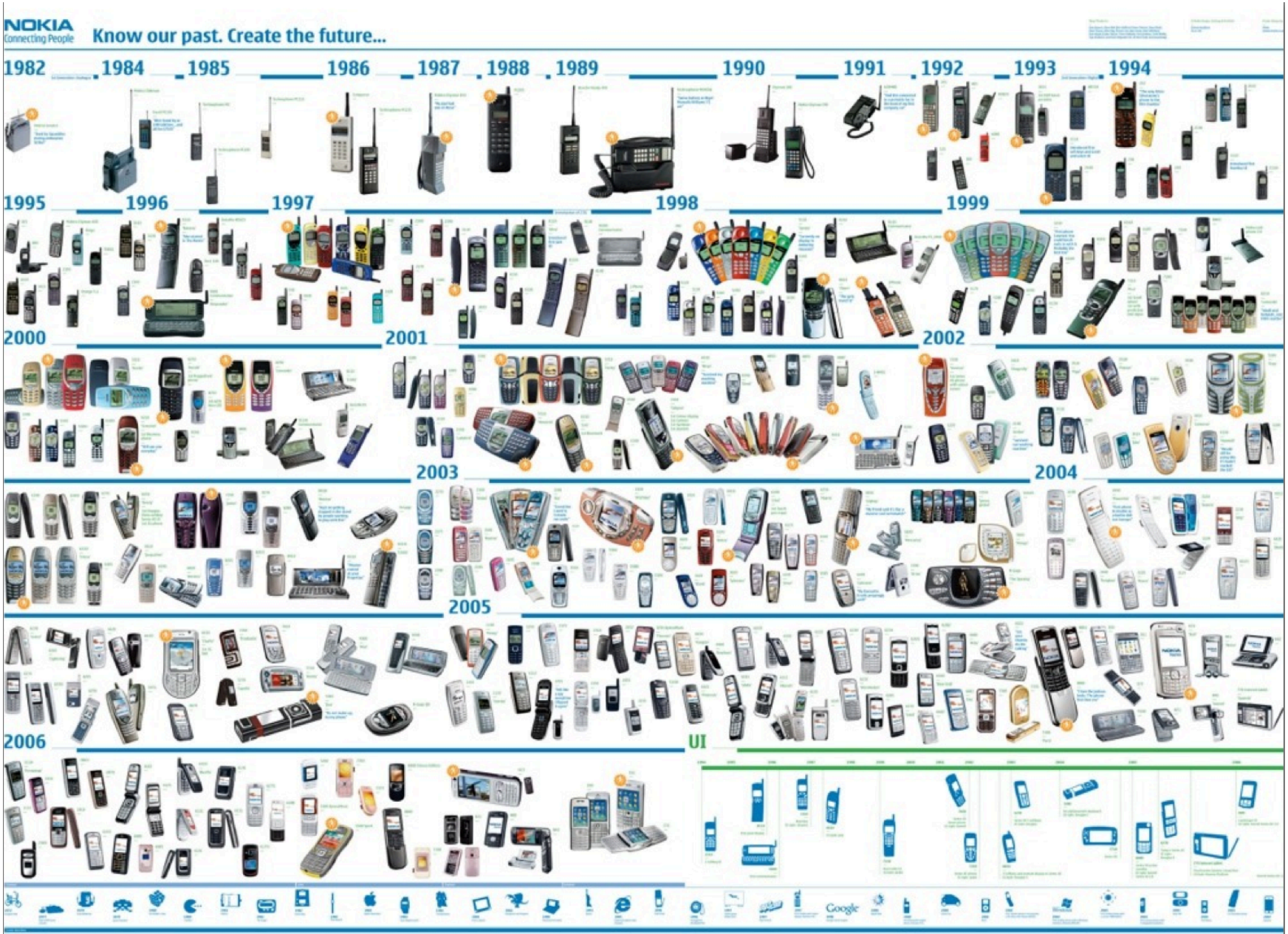
David Parnas, 2014

Ingénierie du logiciel



- De plus en plus complexe
  - Systèmes distribués
  - Qualité de service: performance, sécurité, sûreté, utilisabilité, etc.
- Explosion des fonctionnalités
  - Lignes de produits (espace/temps)




NOKIA
Connecting People
Know our past. Create the future...
1982
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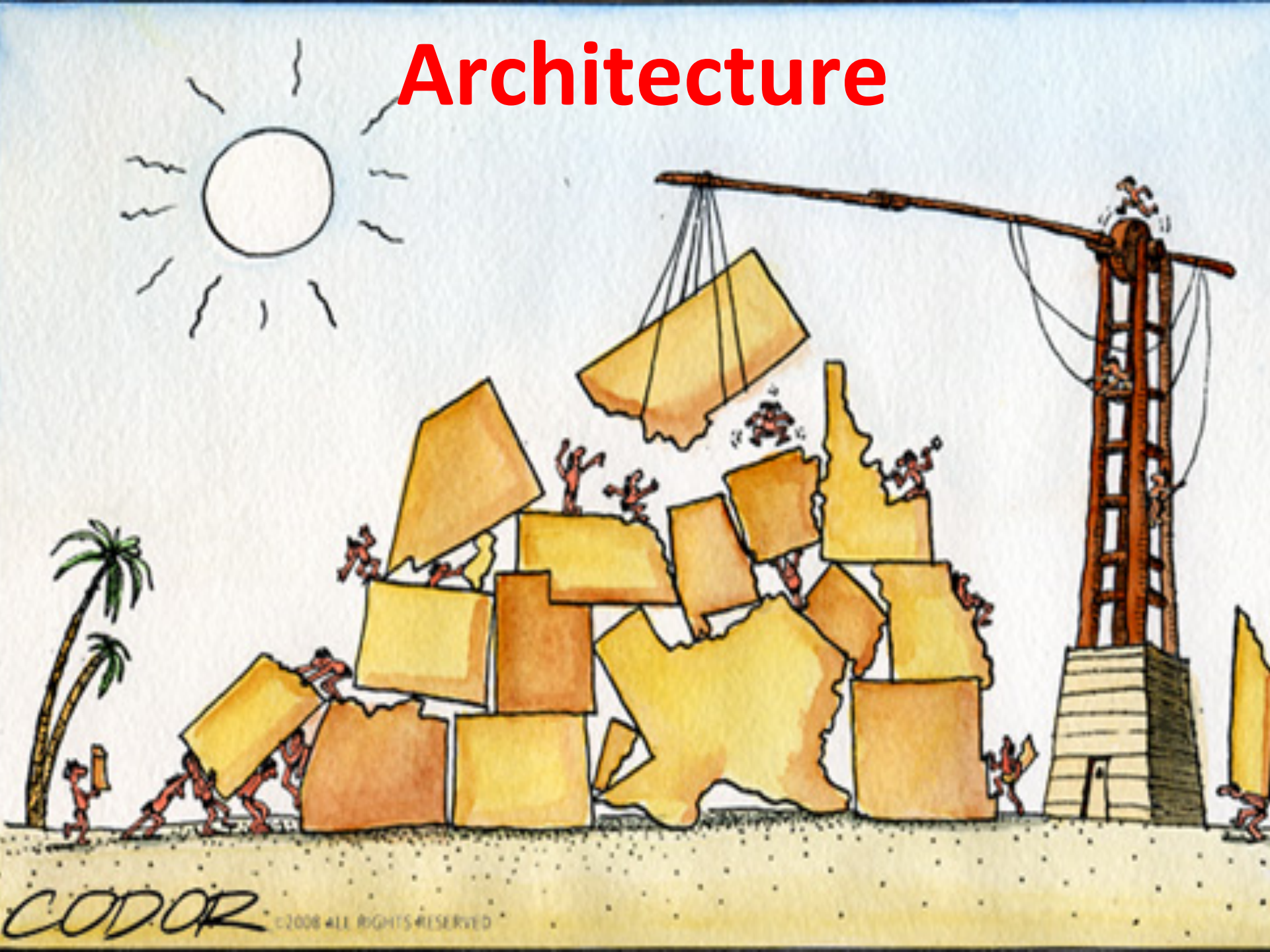
2006
UI


4°C

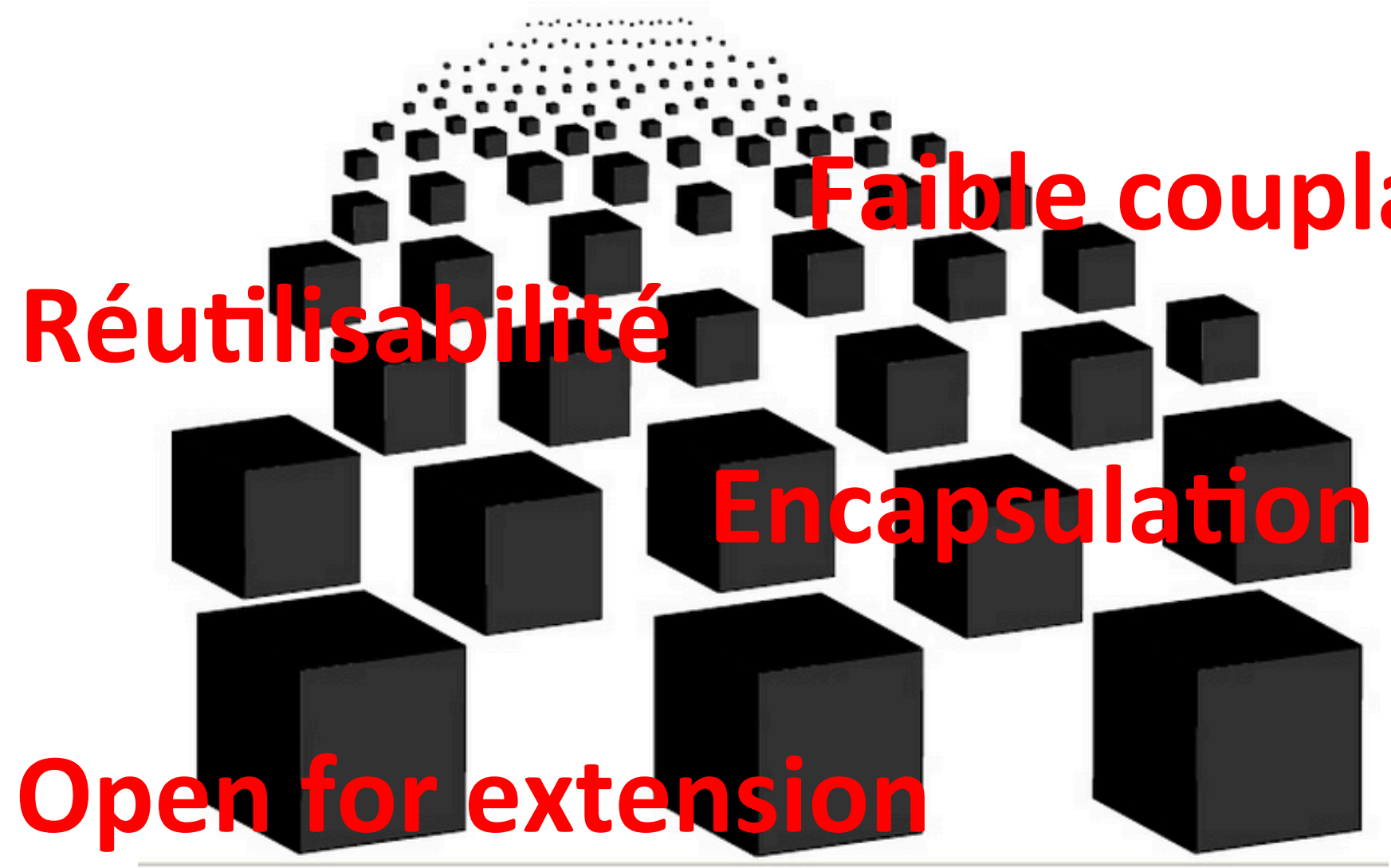
Travail d'équipe

- Organisation
  - Partage des tâches
  - Planification
  - Communication
- Code idéalement…
  - Bien conçu, modulaire, documenté
  - Maintenable, compréhensible
- Outils
  - Collaboratifs (e.g., système de versions)

Architecture



Idéalement:
« modular black boxes »



Faible couplage

Réutilisabilité

Encapsulation

Open for extension

Testing


I don't make mistakes
Microsoft Visual Studio
Package Load Failure
Package 'ArtOfTest.WebAiiVSIP.WebAiiVSIP, ArtOfTest.WebAiiVSIP, Version=1.0.0.0, Culture=neutral, PublicKeyToken=14176981d1873d86' has failed to load properly (GUID = {D5EDEC6D-8025-40CF-987C-B8EABA2C7451}). Please contact package vendor for assistance. Application restart is recommended, due to possible environment corruption. Would you like to disable loading this package in the future? You may use 'devenv /resetskippkgs' to re-enable package loading.
Yes
No

Djikstra

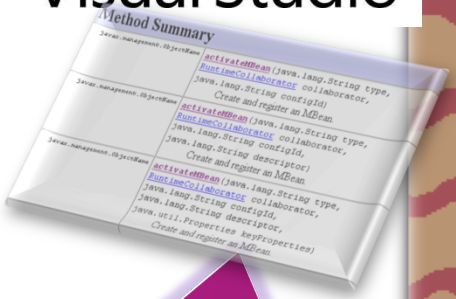

Program testing can be used
to show the presence of bugs, but
never to show their absence!

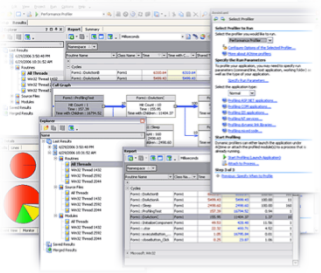
Software Integration

google-guice

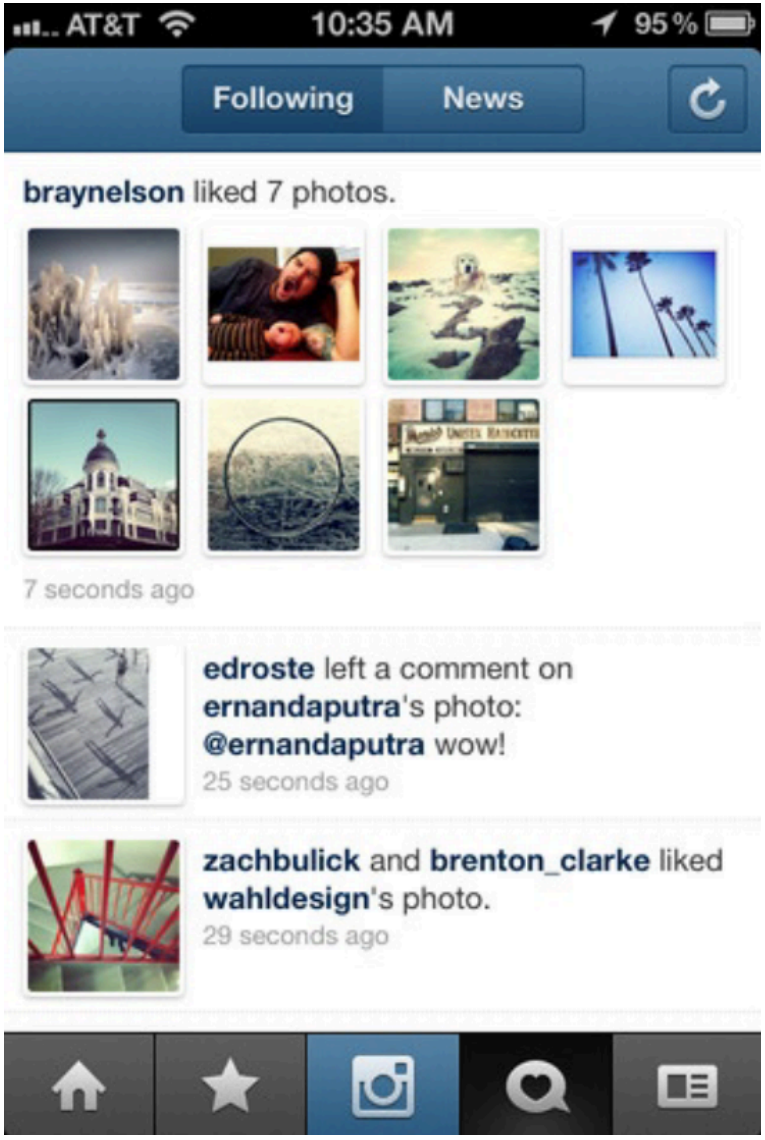
Guice (pronounced 'juice') is a lightweight dependency injection framework for Java 5 and above, brought to you by Goo

Développement Logiciel





Instagram Story



Instagram Story

« Instagram is an app that **only took 8 weeks** to build and ship, but was a product of over a year of work. »

http://www.forbes.com/sites/limyunghui/2012/04/09/inspiring-insights-by-instagram-ceo-kevin-systrom-the-man-who-built-a-1-billion-startup/

Instagram Story

« While I was there working in marketing, I started doing more and more engineering at night on simple ideas that helped me learn how to program **(I don't have any formal CS degree or training) »**

http://www.forbes.com/sites/limyunghui/2012/04/09/inspiring-insights-by-instagram-ceo-kevin-systrom-the-man-who-built-a-1-billion-startup/

Instagram Story

« We spent 1 week prototyping a version that focused solely on photos.
It was pretty awful. So we went back to creating a native version of Burbn. We actually got an entire version of Burbn done as an iPhone app, but it felt cluttered, and overrun with features. It was really difficult to decide to start from scratch, but we went out on a limb, and basically cut everything in the Burbn app except for its photo, comment, and like capabilities. What remained was Instagram. »

http://www.forbes.com/sites/limyunghui/2012/04/09/inspiring-insights-by-instagram-ceo-kevin-systrom-the-man-who-built-a-1-billion-startup/

Instagram Story

« So 8 weeks later, we gave it to our friends, beta tested, bug fixed, etc. and this Monday we decided it was ready to ship. »

http://www.forbes.com/sites/limyunghui/2012/04/09/inspiring-insights-by-instagram-ceo-kevin-systrom-the-man-who-built-a-1-billion-startup/

Instagram Story

« Who is responsible for Instagram's UI design?

For better or for worse, I've done most of the pixel pushing in our app. ;) »

http://www.forbes.com/sites/limyunghui/2012/04/09/inspiring-insights-by-instagram-ceo-kevin-systrom-the-man-who-built-a-1-billion-startup/

Instagram Story

- 30+ millions d'utilisateur en 2 ans
- 25k inscriptions le premier jour
  - « best & worst day of our lives so far »
  - « favicon » cause des milliers d'erreurs 404
    - « 404-ing on Django, causing tons of errors »
- Un seul serveur au lancement
  - Moins puissant qu'un MacBook Pro
- La suite: passage à l'échelle, cloud (EC2) et ingénierie du logiciel

https://speakerdeck.com/mikeyk/scaling-instagram
http://zoompf.com/blog/2012/04/instagram-and-optimizing-favicons

Instagram Story

- Sur la trentaine de composants, 4 seulement ont été écrits à partir de zéro
  - App iOS, App Android, Android Push Notification Service et Redis Query analyzer

node2dm

Fabric

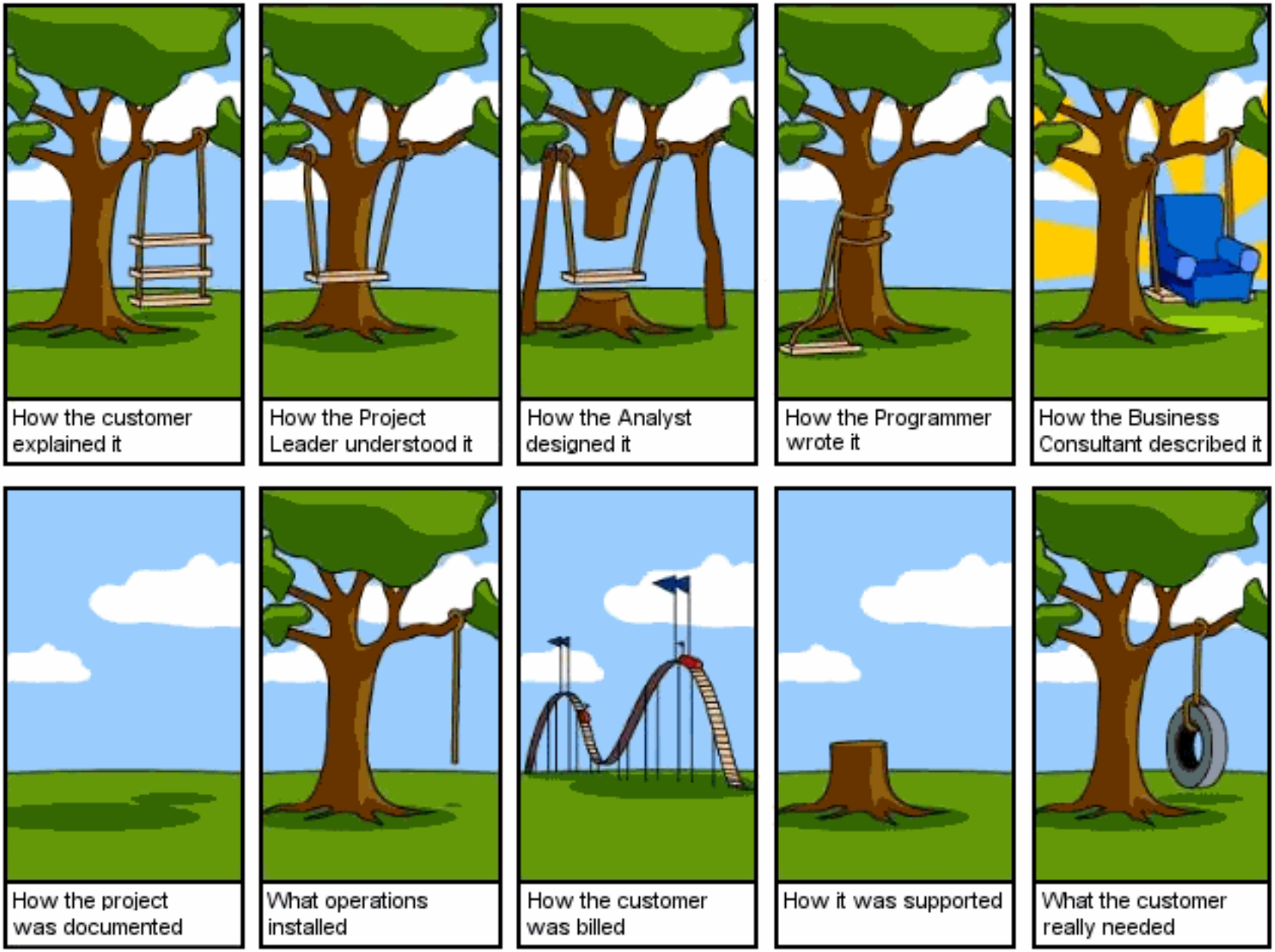
Instagram Story (key lessons)

- Sélection et intégration de multiples librairies

- Open source community
  - Apprendre, partager, demander, répondre, etc.
- Auto-apprentissage
  - « Product guys » sont maintenant à même de rivaliser…

- Agilité, développement incrémental

http://instagram-engineering.tumblr.com/


How the customer explained it
How the Project Leader understood it
How the Analyst designed it
How the Programmer wrote it
How the Business Consultant described it
How the project was documented
What operations installed
How the customer was billed
How it was supported
What the customer really needed

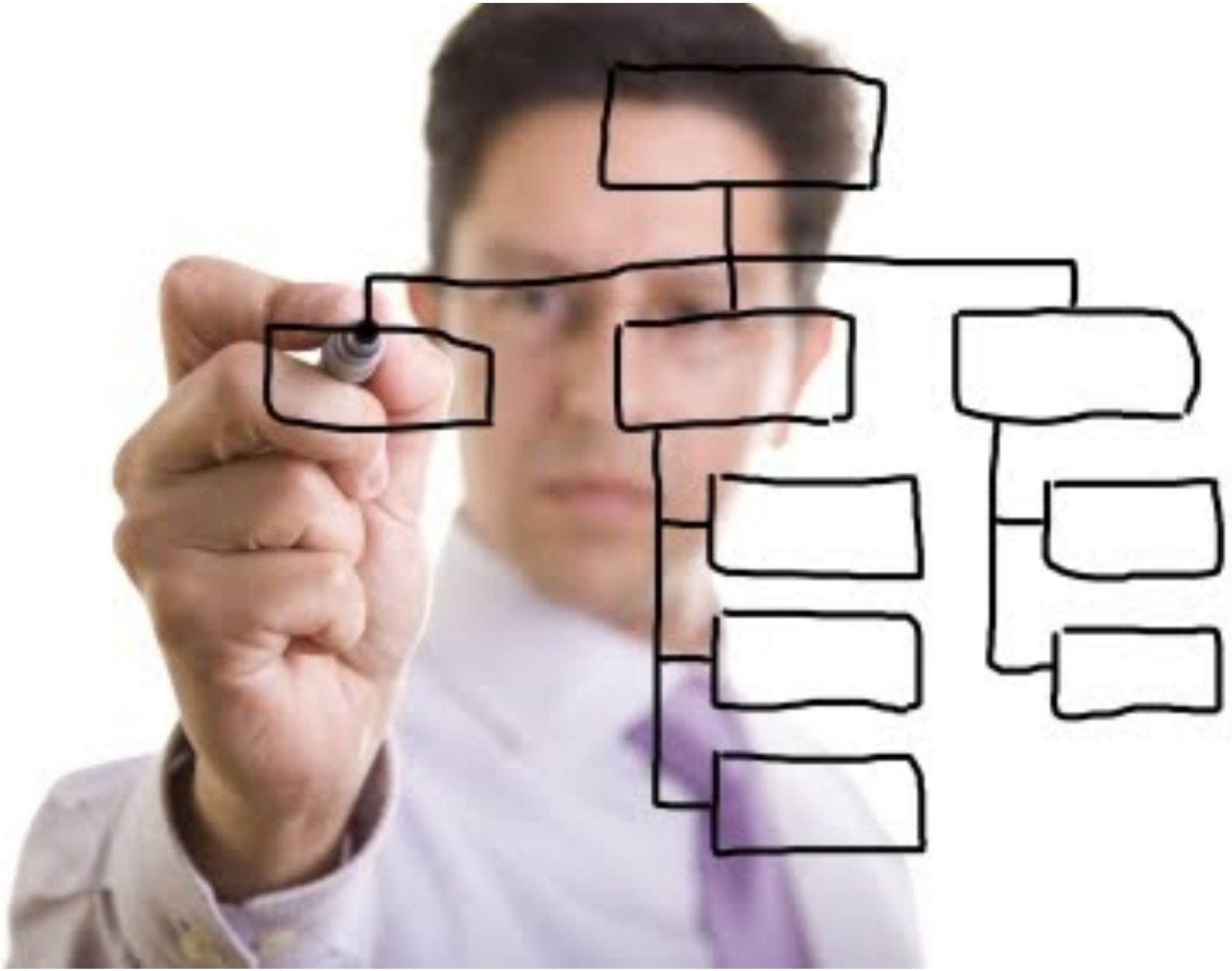
PDL: Objectifs

- Analyse, conception, réalisation, test, par la pratique
  - (Re)visite de votre cursus (UML, Programmation OO, etc.)

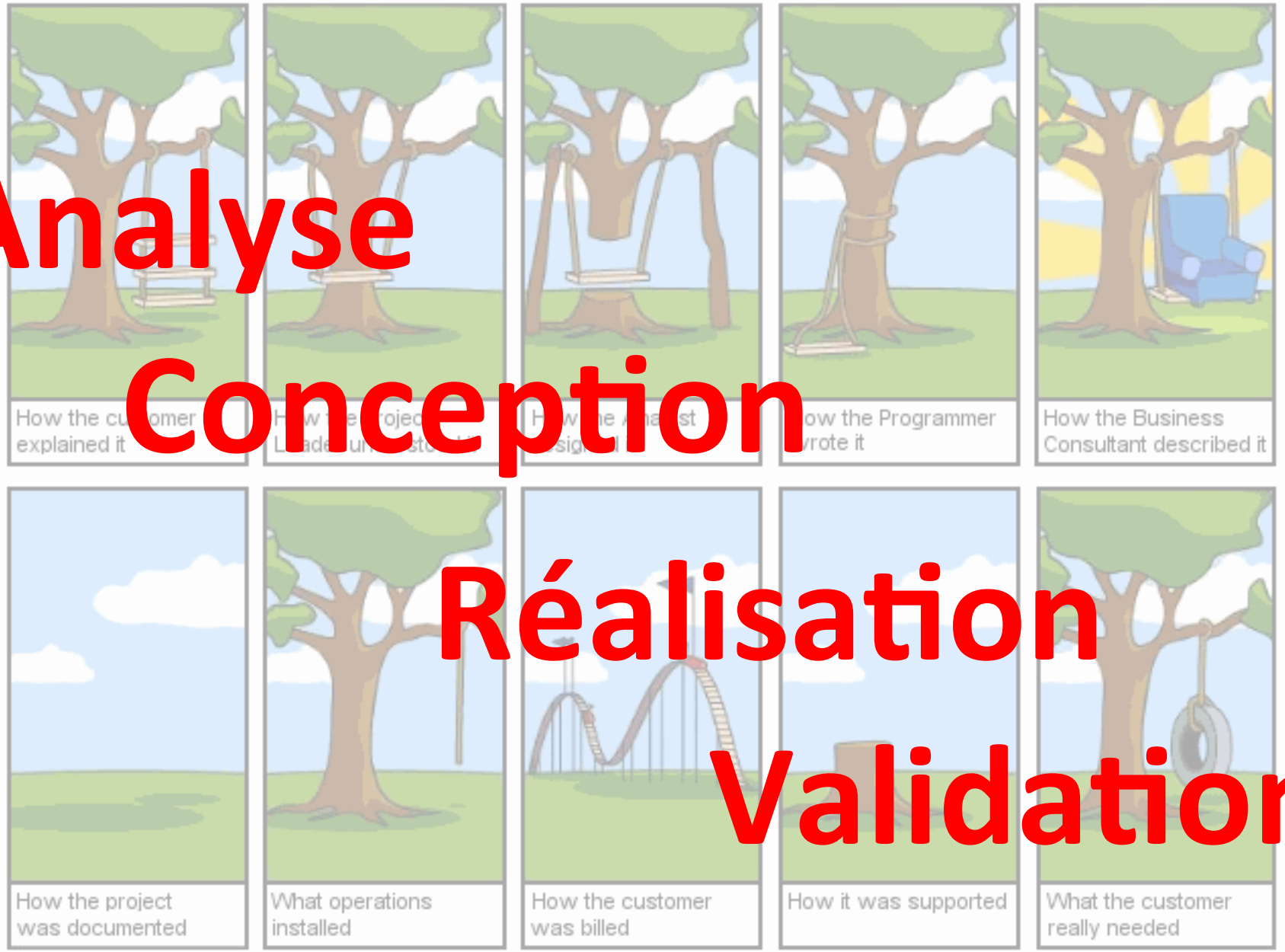
- Gestion de projets
  - Sur un exemple « joué » mais bien réel où des résultats sont attendus
  - Projet en groupe

- Préparation pour le stage au 2ème semestre
  - Et pour votre future vie professionnelle !


Système



PDL en pratique?



Analyse

Conception

Réalisation

Validation

Quatre objectifs, quatre rendus

- (CD) Comprendre et documenter un projet existant
  - Documentation développeur:
    - comment récupérer le code source? comment exécuter, installer et déployer une application?
    - quelles sont les technologies utilisées? comment exécuter des cas de tests? intégration continue?
    - quelle est l'architecture du projet? comment maintenir et étendre la fonctionnalité Y?
- (SP1) Sprint: effectuer une tâche précise, non triviale sur le projet dans un laps de temps prédéfini
  - ingénierie des exigences: analyse des besoins avec un client (i.e., bien comprendre la tâche demandée)
  - Implémentation, test, mise en production
- (SP2) Deuxième sprint avec une autre tâche
- (PR) Présentation pendant 30' (20' + 10'): expliquer et défendre un travail, synthèse, bilan

PDL: les “projets”

- Trois projets sont proposés:
  - technologies, domaines, besoins différents
- Points communs:
  - Open source
  - Github
  - constante évolution
  - (Très) mal documenté, difficile à tester et déployer
  - Buts
    - améliorer le point précédent (rendu: CD)
    - ~ ajouter des fonctionnalités/tests (2 sprints, SP1 et SP2)

PDL: les “projets”

- Trois projets sont proposés:
  - technologies, domaines, besoins différents
- Groupe de 4 personnes (min)
  - 5 personnes max.
- Les trois projets doivent être idéalement couverts par l’ensemble des groupes
  - maximum 5 groupes par projet
- Un projet ouvre si au moins deux groupes sont en « compétition »

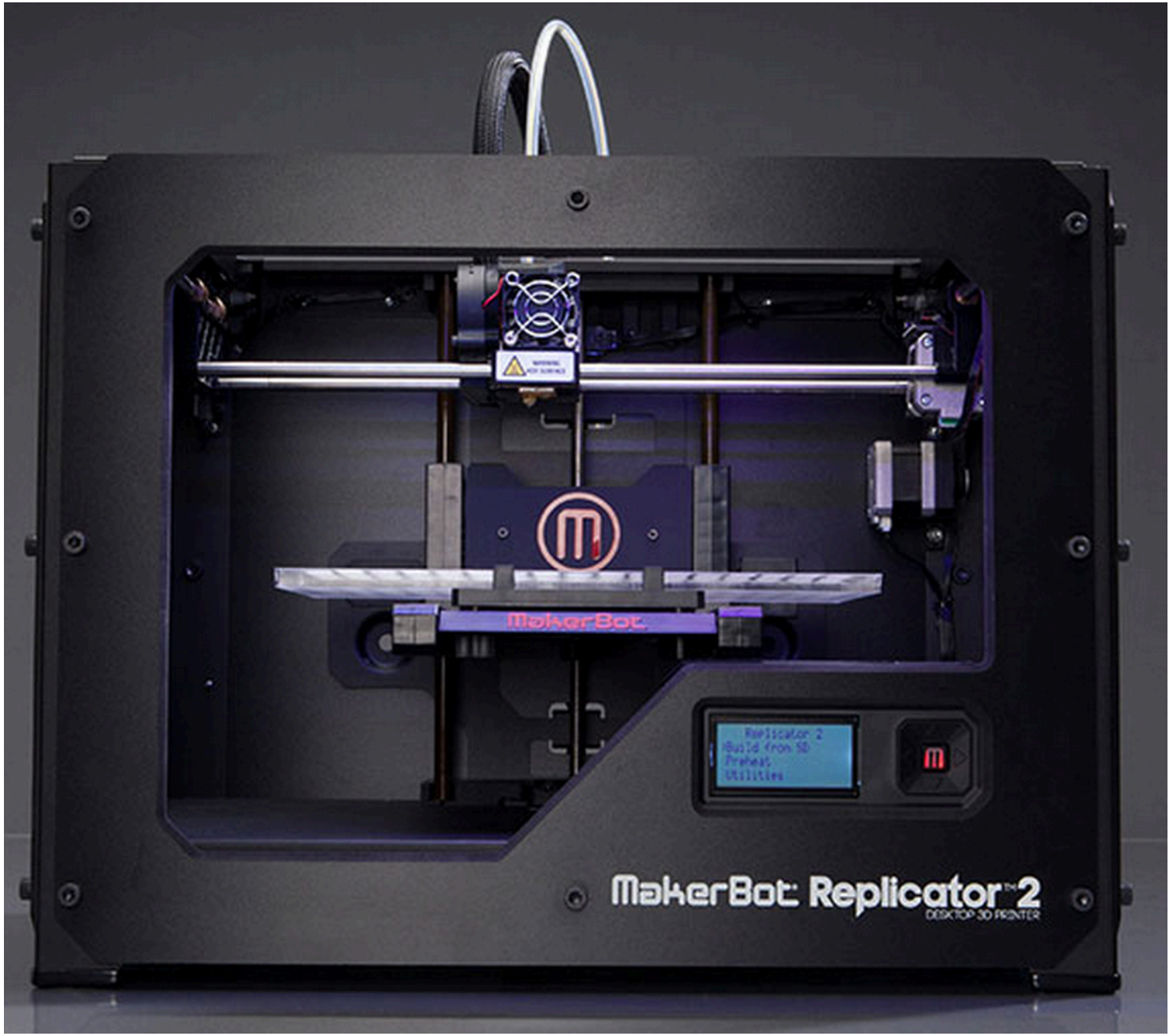
Projet #1
aka 3D

- Domaine
  - Impression 3D, Thingiverse, analyse
- Technologie
  - JavaScript/NodeJS, MongoDB, web
- Projet
  - Analyse de Thingiverse et des « Things » pour produire des statistiques et extraire de l'information

MIAGE (la suite)

- Suite du travail de Ji Young Park
  - Mise en place d'une infrastructure de mining (API Thingiverse)
  - Récupération des données dans MongoDB
  - Miroir « web »
  - Analyse des « Things » (parser scad)
  - …

https://github.com/jiyoungParkKim/openScadScriptAnalyzer


MakerBot
Replicator 2
Build from SD
Preheat
Utilities
MakerBot Replicator™2
DESKTOP 3D PRINTER

Thingiverse Featured

Learn addition, subtraction, multiplication, and division with the Math Spinner Toy, designed by christinachun and remixed by pauloblank.

Learn More

Global Feed

Latest Thingiverse Activity

- Tez_Gelmir commented on Keyboard Key Puller/Remove...
- Narcle collected Motorized Door Lock
- nickswimsfast collected Audio frame for Gopro 3
- ViP started using Customizer
- ChrisWest1231 liked Snap On Portal BooksStand
- Marlins collected Camera Tripod Screw (1/4" -...

Featured Collections

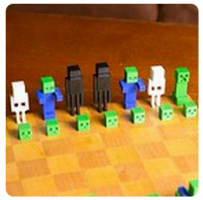
Download and print today

see more


Birdhouses


#WeeklyMake


Cat Patterns

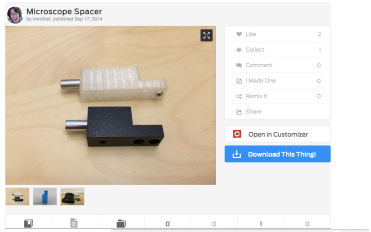

Chess Sets

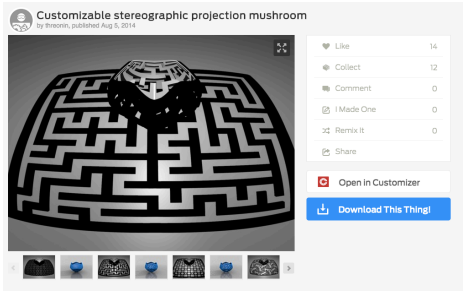

Adorabots

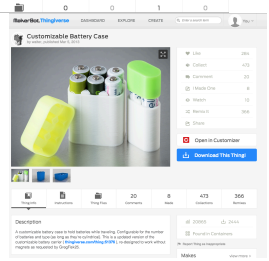

Small Things

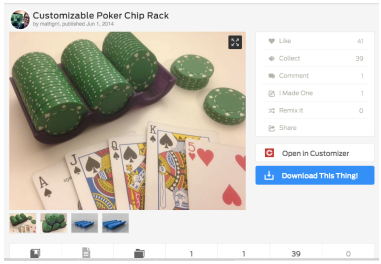

Super Users

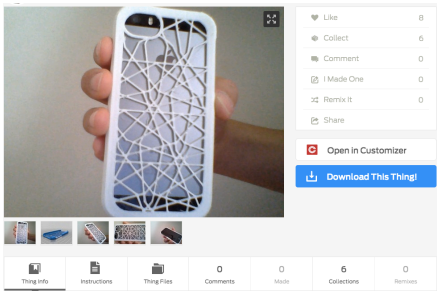

Back To School

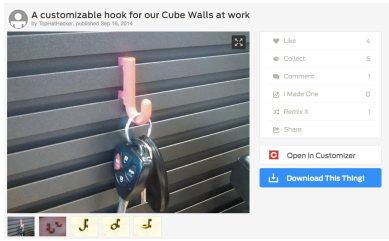

Microscope Spacer
Open in Customizer
Download This Thing!

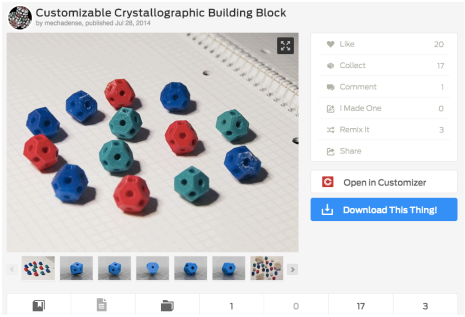

Customizable stereographic projection mushroom
Like
Collect
Comment
I Made One
Remix It
Share
Open in Customizer
Download This Thing!

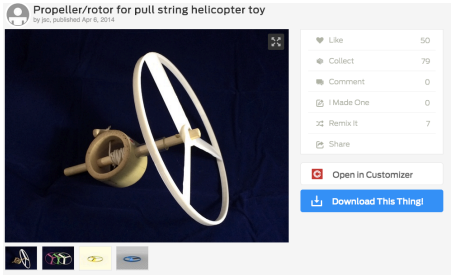

Customizable Battery Case


Customizable Poker Chip Rack
Open in Customizer
Download This Thing!


Like
Collect
Comment
I Made One
Remix It
Share
Open in Customizer
Download This Thing!
Thing Info
Instructions
Thing Files
Comments
Made
Collections
Remixes


A customizable hook for our Cube Walls at work
Open in Customizer
Download This Thing!

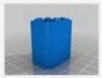

Customizable Crystallographic Building Block
Like
Collect
Comment
I Made One
Remix It
Share
Open in Customizer
Download This Thing!


Propeller/rotor for pull string helicopter toy
Like
Collect
Comment
I Made One
Remix It
Share
Open in Customizer
Download This Thing!

MakerBot Thingiverse DASHBOARD EXPLORE CREATE Enter a search term You

Customizable Battery Case

by walter, published Mar 5, 2013



Like 284
Collect 473
Comment 20
I Made One 8
Watch 10
Remix It 366
Share

Open in Customizer

Download This Thing!

Thing Info | Instructions | Thing Files | 20 Comments | 8 Made | 473 Collections | 366 Remixes

Description

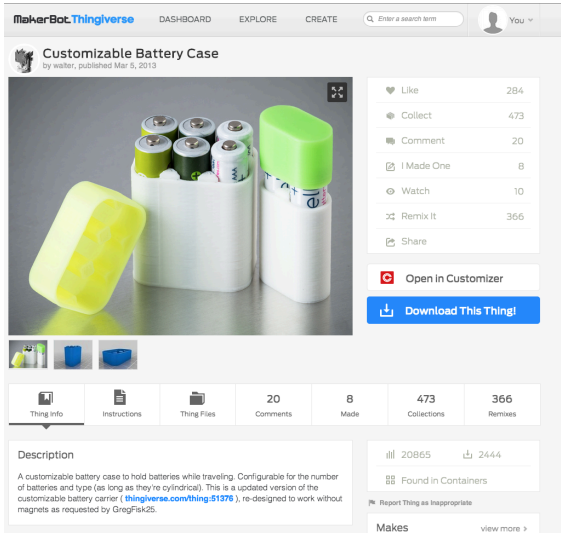
A customizable battery case to hold batteries while traveling. Configurable for the number of batteries and type (as long as they're cylindrical). This is a updated version of the customizable battery carrier (thingiverse.com/thing:51376), re-designed to work without magnets as requested by GregFisk25.

20865 2444

Found in Containers

Report Thing as Inappropriate

Makes view more



File Name	Downloads	Size
6AAA_base.stl Last updated: 13-03-05	2105	584kb
6AAA_lid.stl Last updated: 13-03-05	1930	574kb
battery_carrier_v2-3.scad Last updated: 13-03-12	1775	5kb

Instructions

Create a top and bottom piece (the sum of the heights of the two parts should be equal or slightly larger than the battery height, you can divide it up any way you want).

for reference, here are some common battery heights:
AA - 50.5mm
AAA - 44.5mm
CR123A - 34.5mm
CR2 - 27mm

OpenSCAD

The Programmers Solid 3D CAD Modeller

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Recent News

9 Mar 2014

OpenSCAD release: 2014.03

OpenSCAD 2014.03 has just been released!

The source code, as well as binaries for Mac OS X, Windows and Linux are ready...

24 Feb 2014

Google Summer of Code 2014

OpenSCAD, in collaboration with

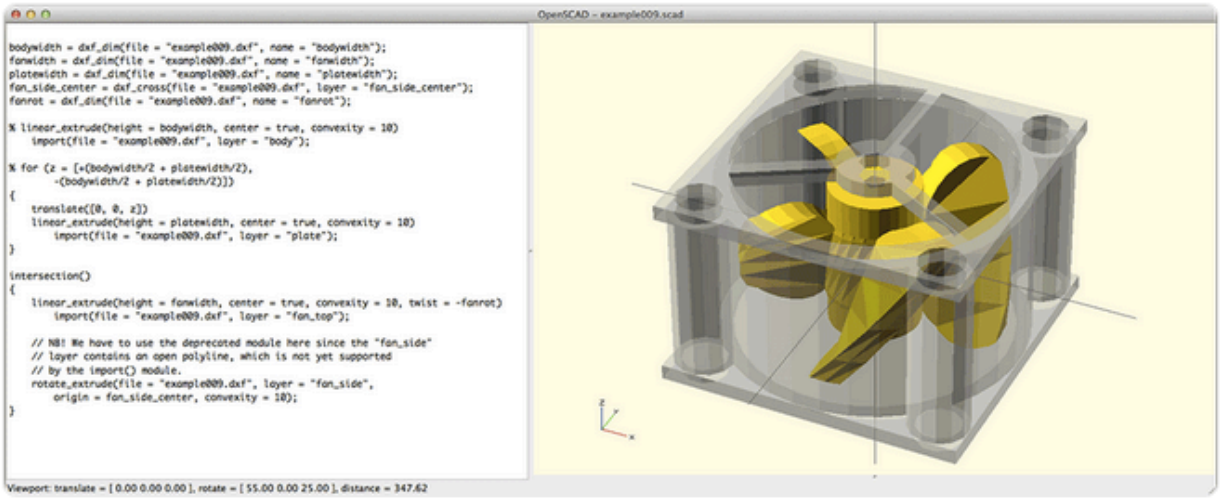
18 Jun 2013

OpenSCAD release: 2013.06

OpenSCAD 2013.06 has just been released!

OpenSCAD is a software for creating solid 3D CAD objects.

It is free software and available for Linux/UNIX, MS Windows and Mac OS X.



Download OpenSCAD

OpenSCAD 2014.03 Mac OS X

Other OSs and Versions

```
/* [Customize body] */

//Set the outside length of your pencil box.
length=190;//[70:400]
//Set the outside depth of your pencil box.
depth=70;//[50:400]
//Set the total height of your pencil box.  The top of the box is set at 15mm.
//Extra height is added to the body section.
height=40;//[40:150]

//Choose divider orientation.  Long is for the X direction.
long = 1;//[0,1,2]
//Short is for the Y direction.
short = 2;//[0,1,2,3]
//When you have 2 long dividers,
// picking yes here will put short dividers in the center section.
center = 0;//[1:Yes,0:No]
 .
 .
 .

module body(fn=20) {
    difference(){
        union(){
            case(z-15,fn);
            hinge(0,z-15,180,fn);
            translate([0,-y/2+5.75+wall,(z-10)/2+t])
                cube([13,12,z-20-2*t],center=true);
            intersection(){
                translate([0,-y/2+5.75+wall,5])
                    cube([13,12,10],center=true);
                translate([0,-y/2+rout+wall,rout/1.5])
                    rotate([0,90,0])
                        cylinder(r=rout,h=13,center=true,$fn=fn);
            }
            if (long>0){
                translate([0,-(long-1)*yin/6,0]){
                    for (i=[1:long])
                        translate([0,(i-1)*yin/3,0])
                            divider(xin,z-15,2,fn);
                }
                if (short>0){
                    translate([-(short-1)*xin/6,-yin/(long+1)*(long/2),0])
                        for (i=[1:short])
                            translate([(i-1)*xin/3,0,0])
                                rotate([0,0,90])
                                    divider(yin/(long+1),z-15,1,fn);
                }
            }
```

1

2

.scad

.scad

```
/* [Customize body] */

//Set the outside length of your pencil box.
length=190;//[70:400]
//Set the outside depth of your pencil box.
depth=70;//[50:400]
//Set the total height of your pencil box.  The top of the box is set at 15mm.
//Extra height is added to the body section.
height=40;//[40:150]

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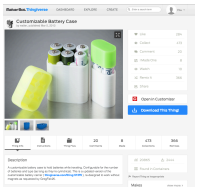
//Short is for the Y direction.
short = 2;//[0,1,2,3]
//When you have 2 long dividers,
// picking yes here will put short dividers in the center section.
center = 0;//[1:Yes,0:No]
 .
 .
 .
module body(fn=20) {
    difference(){
        union(){
            case(z-15,fn);
            hinge(0,z-15,180,fn);
            translate([0,-y/2+5.75+wall,(z-10)/2+t])
                cube([13,12,z-20-2*t],center=true);
            intersection(){
                translate([0,-y/2+5.75+wall,5])
                    cube([13,12,10],center=true);
                translate([0,-y/2+rout+wall,rout/1.5])
                    rotate([0,90,0])
                        cylinder(r=rout,h=13,center=true,$fn=fn);
            }
            if (long>0){
                translate([0,-(long-1)*yin/6,0]){
                    for (i=[1:long])
                        translate([0,(i-1)*yin/3,0])
                            divider(xin,z-15,2,fn);
                }
                if (short>0){
                    translate([-(short-1)*xin/6,-yin/(long+1)*(long/2),0])
                        for (i=[1:short])
                            translate([(i-1)*xin/3,0,0])
                                rotate([0,0,90])
                                    divider(yin/(long+1),z-15,1,fn);
                }
            }
```

①

②



(1) Statistiques

(2) Extraction d'information

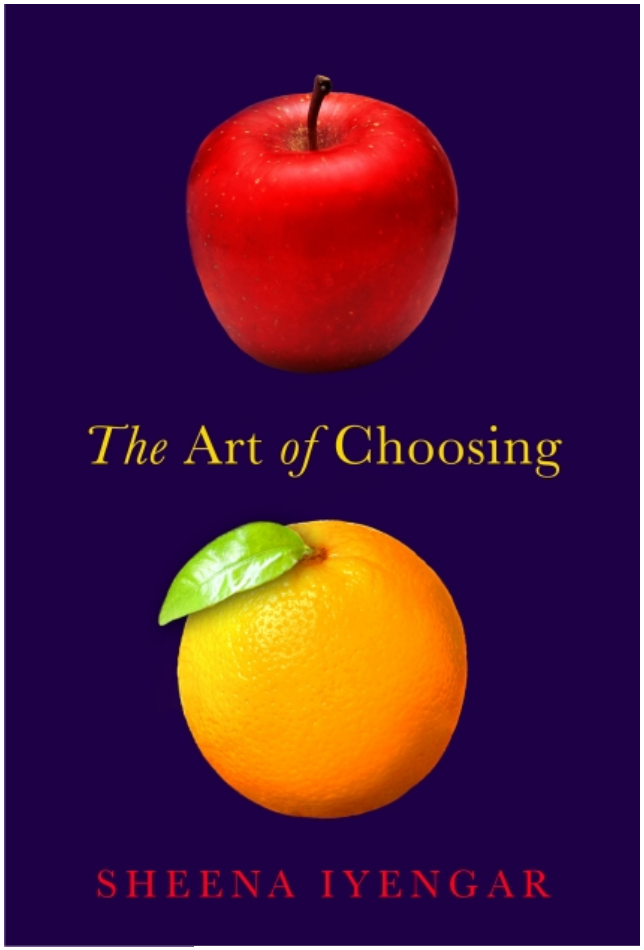
Projet #2
aka PCM

- Domaine
  - Matrice de Comparaison de Produits (PCMs)
- Technologie
  - Java, JavaScript, web
- Projet
  - « Mining » de Wikipedia et d'autres sources de PCMs

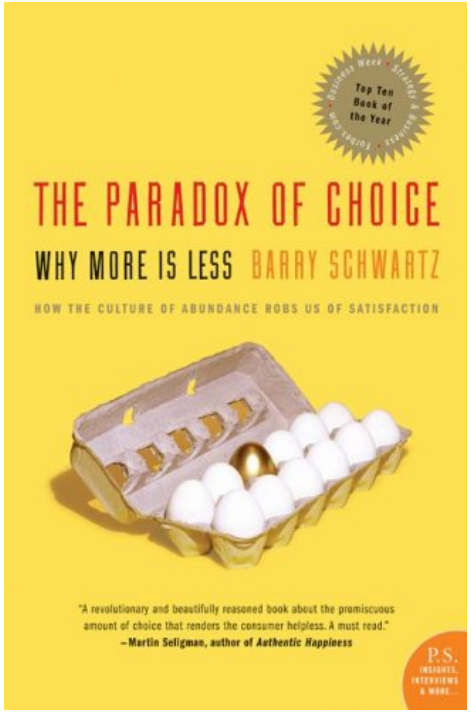
M1 (la suite)

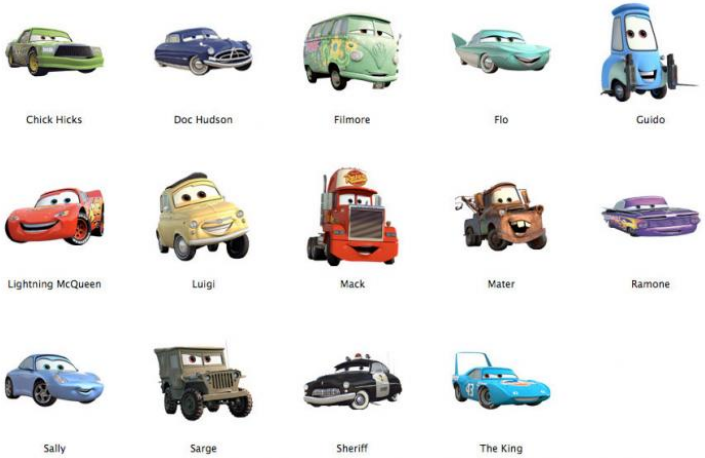
- Un autre groupe de M1 (GL) travaille sur le projet, partie « éditeur »

https://github.com/gbecan/PCM


The Art of Choosing
SHEENA IYENGAR


Canon
Nikon
COOLPIX
Canon
Canon


Top Ten Book of the Year
THE PARADOX OF CHOICE
WHY MORE IS LESS BARRY SCHWARTZ
HOW THE CULTURE OF ABUNDANCE ROBS US OF SATISFACTION
"A revolutionary and beautifully reasoned book about the promiscuous amount of choice that renders the consumer helpless. A must read."
–Martin Seligman, author of Authentic Happiness
P.S.


Chick Hicks
Doc Hudson
Filmore
Flo
Guido
Lightning McQueen
Luigi
Mack
Mater
Ramone
Sally
Sarge
Sheriff
The King

Product Comparison Matrices (PCMs) Everywhere

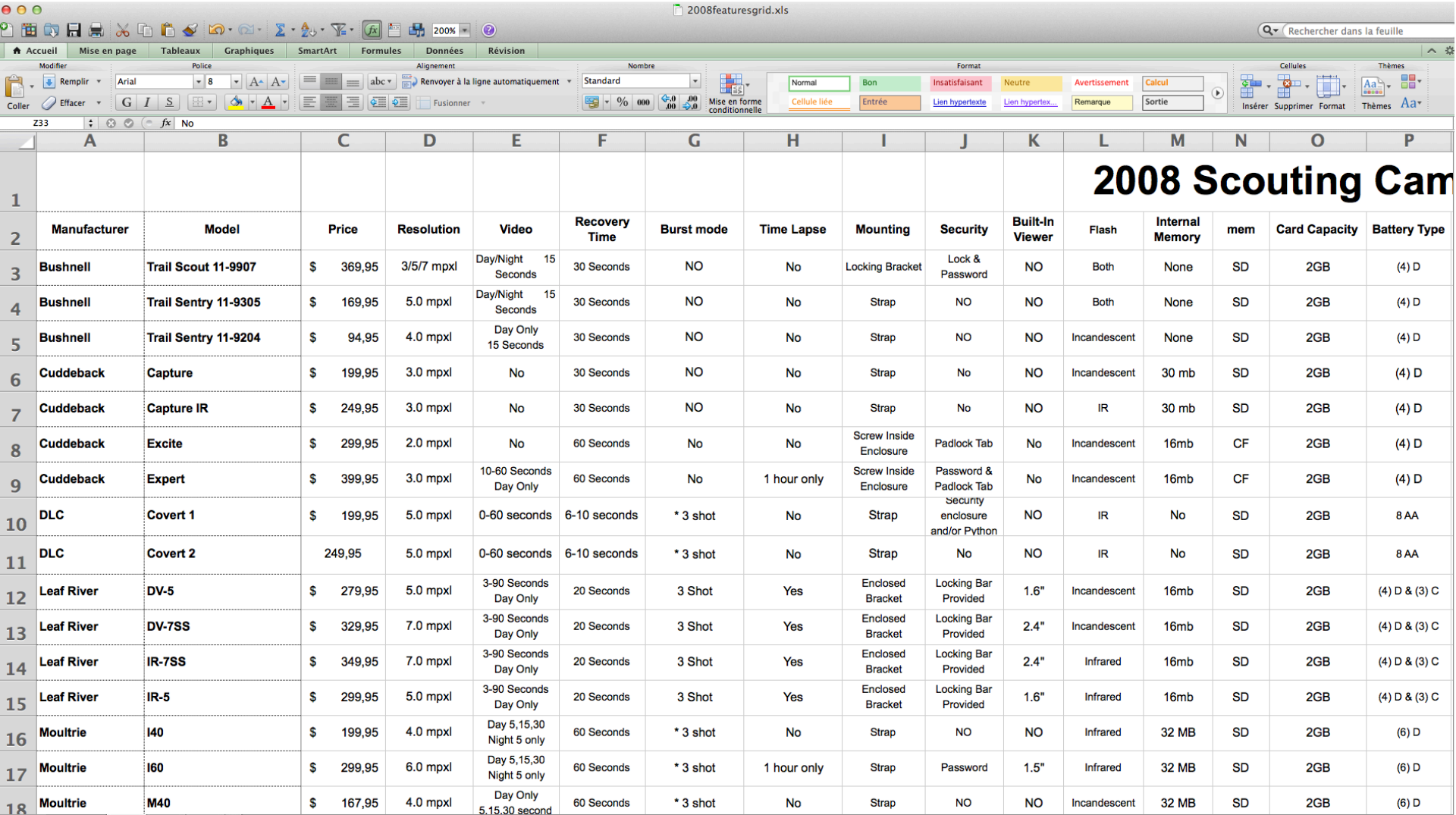
4 produits				
Cliquez sur les flèches pour trier par caractéristique	Samsung ATIV Book 2 NP270E5E-X06FR	Asus R510CC-XX577H - Blanc	Dell Inspiron 15R-5537 - i5 - Radeon HD (Argent)	Toshiba Satellite Pro C70-A-12C
Notation	Pas encore noté	★★★★★	Pas encore noté	Pas encore noté
Processeur et chipset	Samsung ATIV Book 2 NP270E5E-X06FR	Asus R510CC-XX577H - Blanc	Dell Inspiron 15R-5537 - i5 - Radeon HD (Argent)	Toshiba Satellite Pro C70-A-12C
Modèle	Processeur Intel® Core™ i5-3230M (2,60 GHz)	Processeur Intel® Core™ i5-3337U (1,80 GHz)	Processeur Intel® Core™ i5-4200U (1,60 GHz)	Processeur Intel® Core™ i3-3120M (2,50 GHz)
Nombre de cœurs	2	2	2	2
Mode Turbo	3,10 GHz	2,70 GHz	2,60 GHz	-
Northbridge	Intel® HM75	Intel® HM76	-	-
Mémoire	Samsung ATIV Book 2 NP270E5E-X06FR	Asus R510CC-XX577H - Blanc	Dell Inspiron 15R-5537 - i5 - Radeon HD (Argent)	Toshiba Satellite Pro C70-A-12C
Capacité mémoire	4096 Mo	4096 Mo	6144 Mo	4096 Mo
Barrette(s) installée(s)	1	1	2	1
Emplacement(s) disponible(s)	1	1	-	1
Type	SO-DIMM DDR3	SO-DIMM DDR3	SO-DIMM DDR3L	SO-DIMM DDR3
Fréquence	1600 MHz	1600 MHz	1600 MHz	1600 MHz
Maximum	-	8192 Mo	-	16384 Mo
Affichage	Samsung ATIV Book 2 NP270E5E-X06FR	Asus R510CC-XX577H - Blanc	Dell Inspiron 15R-5537 - i5 - Radeon HD (Argent)	Toshiba Satellite Pro C70-A-12C
Écran	15,6"	15,6"	15,6"	17,3"
Résolution	WXGA (1366 x 768)	WXGA (1366 x 768)	WXGA (1366 x 768)	WSXGA (1600 x 900)
Dalle	-	Color Shine avec technologie LED	-	Rétro-éclairage LED
Aspect de la dalle	Mat / Anti-reflets	Brillant	Brillant	Mat / Anti-reflets
Carte graphique	nVidia® GeForce™ 710M	NVIDIA® GeForce™ GT 720M	AMD Radeon HD 8670M	nVidia® GeForce™ 710M
Type GDDR	-	GDDR3	-	-
Mémoire totale	2048 Mo	2048 Mo	2048 Mo	1024 Mo
Stockage	Samsung ATIV Book 2 NP270E5E-X06FR	Asus R510CC-XX577H - Blanc	Dell Inspiron 15R-5537 - i5 - Radeon HD (Argent)	Toshiba Satellite Pro C70-A-12C
Nombre d'unité de stockage	1	1	1	1
Espace disque total	750 Go	1000 Go	1000 Go	500 Go
Type	HDD	HDD	HDD	HDD
Vitesse HDD (trs/min)	5400	5400	5400	5400
Stockage optique	Samsung ATIV Book 2 NP270E5E-X06FR	Asus R510CC-XX577H - Blanc	Dell Inspiron 15R-5537 - i5 - Radeon HD (Argent)	Toshiba Satellite Pro C70-A-12C
Lecteur optique	Graveur DVD±RW DL	Graveur DVD±RW DL	Graveur DVD±RW DL	Graveur DVD±RW DL

Product Comparison Matrices (PCMs) Everywhere

			
Vehicle			
Number of Passenger Doors		4	
Brakes			
Brake Type	Pwr	Pwr	Pwr Regenerative
Brake ABS System	4-Wheel	4-Wheel	4-Wheel
Disc - Front (Yes or)	Yes	Yes	Yes
Disc - Rear (Yes or)	Yes	Yes	Yes
Front Brake Rotor Diam x Thickness (mm/in)	- TBD - / - TBD -	278 x 25 / 11.0 x 1.0	300 x - TBD - / 11.9 x - TBD -
Rear Brake Rotor Diam x Thickness (mm/in)	- TBD - / - TBD -	280 x 11 / 11.1 x 0.5	284 x - TBD - / 11.2 x - TBD -
Seat Trim	BISQUE, SEAT TRIM , DARK GREY, SEAT TRIM	MEDIUM LIGHT STONE, CLOTH SEAT TRIM , CHARCOAL BLACK, CLOTH SEAT	CAMEL, CLOTH SEATS , GRAY, CLOTH SEATS

Product Comparison Matrices (PCMs) Everywhere

Product Comparison Matrices (PCMs) Everywhere



2008featuresgrid.xls

2008 Scouting Cam

Manufacturer	Model	Price	Resolution	Video	Recovery Time	Burst mode	Time Lapse	Mounting	Security	Built-In Viewer	Flash	Internal Memory	mem	Card Capacity	Battery Type
Bushnell	Trail Scout 11-9907	$ 369,95	3/5/7 mpxl	Day/Night 15 Seconds	30 Seconds	NO	No	Locking Bracket	Lock & Password	NO	Both	None	SD	2GB	(4) D
Bushnell	Trail Sentry 11-9305	$ 169,95	5.0 mpxl	Day/Night 15 Seconds	30 Seconds	NO	No	Strap	NO	NO	Both	None	SD	2GB	(4) D
Bushnell	Trail Sentry 11-9204	$ 94,95	4.0 mpxl	Day Only 15 Seconds	30 Seconds	NO	No	Strap	NO	NO	Incandescent	None	SD	2GB	(4) D
Cuddeback	Capture	$ 199,95	3.0 mpxl	No	30 Seconds	NO	No	Strap	No	NO	Incandescent	30 mb	SD	2GB	(4) D
Cuddeback	Capture IR	$ 249,95	3.0 mpxl	No	30 Seconds	NO	No	Strap	No	NO	IR	30 mb	SD	2GB	(4) D
Cuddeback	Excite	$ 299,95	2.0 mpxl	No	60 Seconds	No	No	Screw Inside Enclosure	Padlock Tab	No	Incandescent	16mb	CF	2GB	(4) D
Cuddeback	Expert	$ 399,95	3.0 mpxl	10-60 Seconds Day Only	60 Seconds	No	1 hour only	Screw Inside Enclosure	Password & Padlock Tab	No	Incandescent	16mb	CF	2GB	(4) D
DLC	Covert 1	$ 199,95	5.0 mpxl	0-60 seconds	6-10 seconds	* 3 shot	No	Strap	Security enclosure and/or Python	NO	IR	No	SD	2GB	8 AA
DLC	Covert 2	249,95	5.0 mpxl	0-60 seconds	6-10 seconds	* 3 shot	No	Strap	No	NO	IR	No	SD	2GB	8 AA
Leaf River	DV-5	$ 279,95	5.0 mpxl	3-90 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	1.6"	Incandescent	16mb	SD	2GB	(4) D & (3) C
Leaf River	DV-7SS	$ 329,95	7.0 mpxl	3-90 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	2.4"	Incandescent	16mb	SD	2GB	(4) D & (3) C
Leaf River	IR-7SS	$ 349,95	7.0 mpxl	3-90 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	2.4"	Infrared	16mb	SD	2GB	(4) D & (3) C
Leaf River	IR-5	$ 299,95	5.0 mpxl	3-90 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	1.6"	Infrared	16mb	SD	2GB	(4) D & (3) C
Moultrie	I40	$ 199,95	4.0 mpxl	Day 5,15,30 Night 5 only	60 Seconds	* 3 shot	No	Strap	NO	NO	Infrared	32 MB	SD	2GB	(6) D
Moultrie	I60	$ 299,95	6.0 mpxl	Day 5,15,30 Night 5 only	60 Seconds	* 3 shot	1 hour only	Strap	Password	1.5"	Infrared	32 MB	SD	2GB	(6) D
Moultrie	M40	$ 167,95	4.0 mpxl	Day Only 5,15,30 second	60 Seconds	* 3 shot	No	Strap	NO	NO	Incandescent	32 MB	SD	2GB	(6) D

Product Comparison Matrices (PCMs) Everywhere

Comparison of Toyota hybrids

From Wikipedia, the free encyclopedia

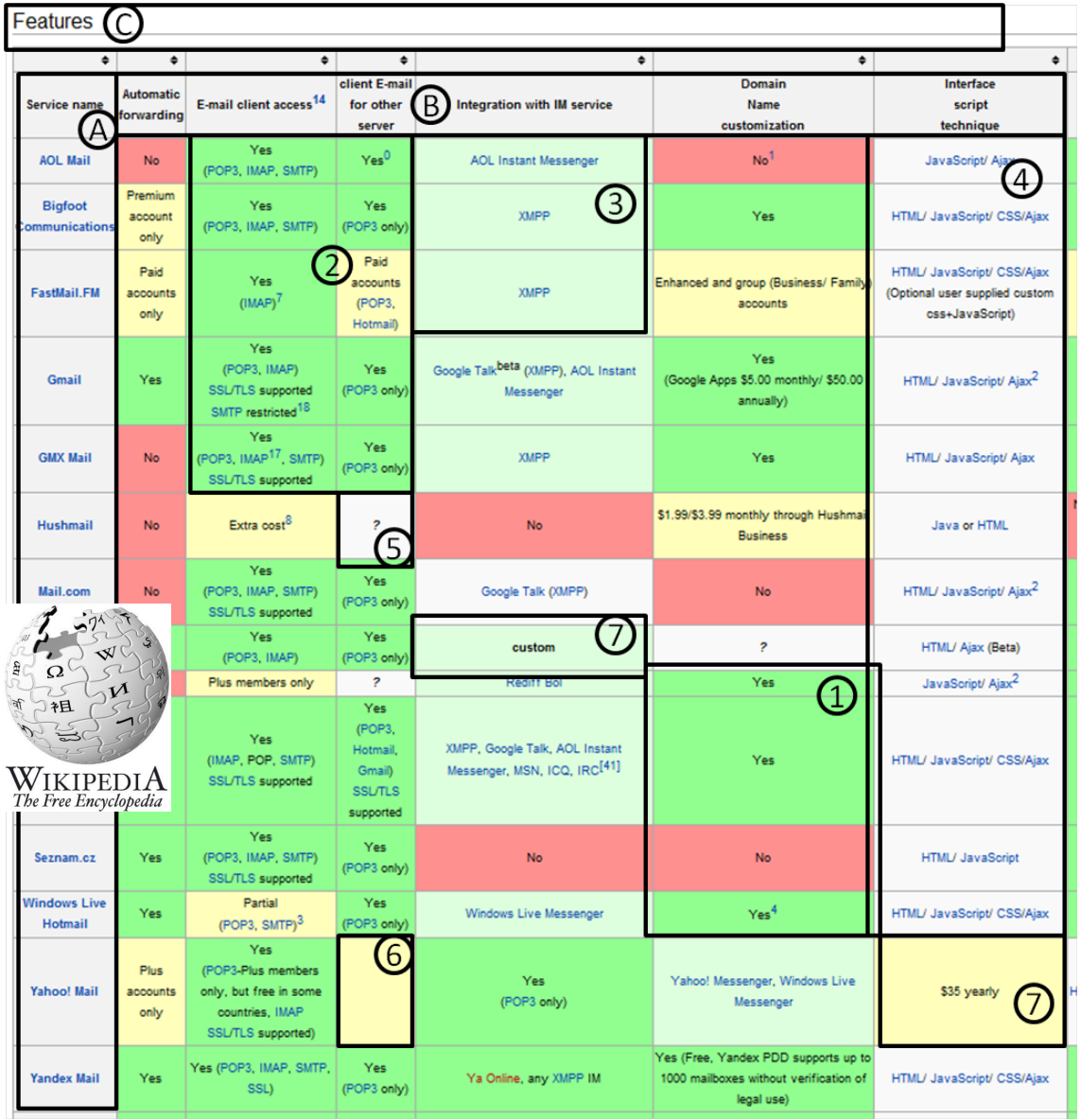
WIKIPEDIA
The Free Encyclopedia

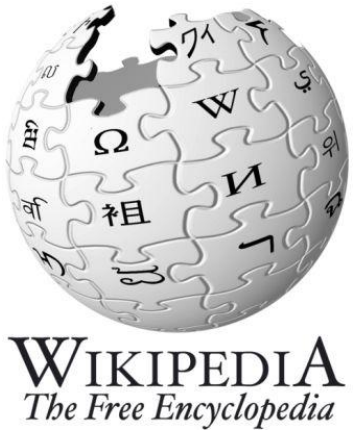
The examples and perspective in this article **deal primarily with the United States and do not represent a worldwide view of the subject**. Please improve this article and discuss the issue on the ta
(December 2010)

By the end of 2006 there were about 15 hybrid vehicles from various car makers available in the U.S.[1] By May 2007 Toyota sold its first million hybrids and had sold a total of two million hybrids at the end of August 2009.[2]

Below is a comparison of the Toyota hybrid models.

Features	Prius 	Prius 	Prius 	Camry 	Highlander 
Release date	1997 (Japan) 2000 (worldwide)	2004	mid-May 2009 (Japan) early June (US)	May 2006	July 2005
US model year	2001–2003	2004–2009	2010-	2007-	2005–2007
Base price	US$19,995	US$22,000	US$22,000	US$26,480	US$33,000
EPA-estimated city fuel economy	42 mpg_{US} (5.6 L/100 km; 50 mpg_{imp})	48 mpg_{US} (4.9 L/100 km; 58 mpg_{imp})	51 mpg_{US} (4.6 L/100 km; 61 mpg_{imp})	33 mpg_{US} (7.1 L/100 km; 40 mpg_{imp})	28 mpg_{US} (8.4 L/100 km; 34 mpg_{imp}) (2WD) 27 mpg_{US} (8.7 L/100 km; 32 mpg_{imp}) (4WD-i)
EPA-estimated highway fuel economy	41 mpg_{US} (5.7 L/100 km; 49 mpg_{imp})	45 mpg_{US} (5.2 L/100 km; 54 mpg_{imp})	48 mpg_{US} (4.9 L/100 km; 58 mpg_{imp})	34 mpg_{US} (6.9 L/100 km; 41 mpg_{imp})	25 mpg_{US} (9.4 L/100 km; 30 mpg_{imp}) (2WD) 25 mpg_{US} (9.4 L/100 km; 30 mpg_{imp}) (4WD-i)
EPA-estimated drivers fuel economy	45 mpg_{US} (5.2 L/100 km; 54 mpg_{imp})	47.5 mpg_{US} (4.95 L/100 km; 57.0 mpg_{imp})	48.7 mpg_{US} (4.83 L/100 km; 58.5 mpg_{imp})	36.6 mpg_{US} (6.43 L/100 km; 44.0 mpg_{imp})	
Engine	1.5 L 1NZ-FXE I4 Atkinson cycle	1.5 L 1NZ-FXE I4 Atkinson cycle	1.8 L 2ZR-FXE I4 Atkinson cycle	2.4 L 2AZ-FXE I4 Atkinson cycle	3.3 L 3MZ-FE V6
0-60 mph (97 km/h) acceleration	12.6 s	10.8 s	10.0 s	7.3 s (R&T, 5/06)	6.6 s (Motor Trend)
Engine output	70 hp (52 kW) / 82 lb·ft (110 Nm)	76 hp (57 kW) / 85 lb·ft (115 Nm)	98 hp (73 kW) / 105 lb·ft (142 Nm)	147 hp (108 kW) / 138 lb·ft (187 Nm)	
Electric motor output	44 hp (33 kW) / 258 lb·ft (350 Nm)	67 hp (50 kW) / 295 lb·ft (400 Nm)	80 hp	45 hp	
Net power	60 kW (80 hp)	80 kW (107 hp)	110 kW (134 hp)	140 kW (187 hp)	
Traction battery power	33 kW (44 hp)	21 kW (28 hp)	27 kW (36 hp)	30 kW (40 hp)	45 kW (60 hp)
Requires premium fuel (91 octane (R+M)/2)	No	No	No	No	No (however, premium recommende
EPA/CARB emission certification		Tier II Bin 3/AT-PZEV	Tier II Bin 3/SULEV	Tier II Bin 3/AT-PZEV	Tier II Bin 3/AT-PZEV
Smog forming emissions compared to average new vehicle	75% less	80% less	80% less	80% less	80% less
Maximum seating	5	5	5	5	7





1. Boolean yes/no answers
2. Partial/constrained yes/no answers
3. Single-value answers
4. Multiple values answers
5. “Unknown” answers
6. Empty cells
7. Inconsistent cells
8. Additional / Extra information

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|-
! Program
! License
! Simultaneous User Capacity
! Linux
[[Image:Tux.svg|25px|Linux]]
! Mac OS X
...
! Recording capabilities
|-
| {{rh}} | [http://www...]
| [[Proprietary software license|Proprietary]]
| {{Sort|0000500|1-1500 (80,000 w/webcast)}}
| {{Yes|?}}
|...
| {{Yes|?}}<ref name="ReferenceA">
Supports two-way ... integration</ref>
| {{Yes|}}VGA, HQ, HD<ref>[http://www.ad... ]
Retrieved on 2014-02-27.</ref>
| {{Yes|?}}
...
| {{No|X}}
|-
```

Figure 3: Code Snippet of a Wikipedia Table (Mediawiki Syntax)

« Mining » de PCMs

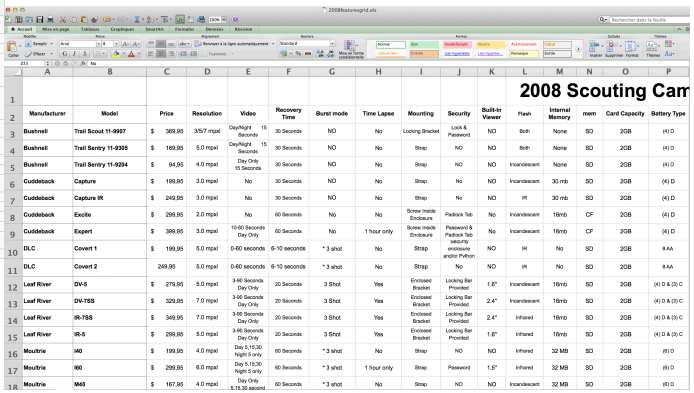
- Editeur et API en cours de développement
- Objectif: récupérer des données (PCMs) pour alimenter l'éditeur/API
  - (1) Wikipedia
  - (2) Autre (à définir)


Comparison of Toyota hybrids

From Wikipedia, the free encyclopedia

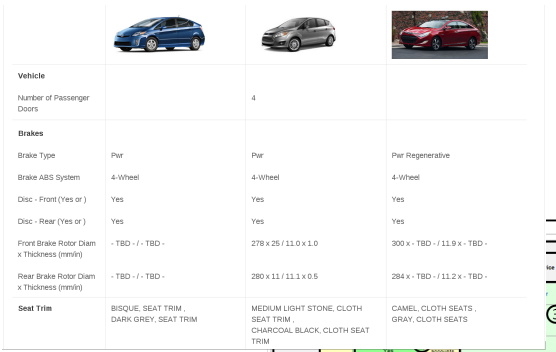
Features	Prius	Prius	Prius	Camry	Highlander
Release date	1997 (Japan) 2000 (worldwide)	2004	mid-May 2009 (Japan) early June (US)	May 2006	July 2000
US model year	2001–2003	2004–2009	2010–	2007–	2000–2007
Base price	US$19,995	US$22,000	US$22,000	US$26,480	US$33,000
EPA-estimated city fuel economy	42 mpg$_{US}$ (5.6 L/100 km; 50 mpg$_{Imp}$)	48 mpg$_{US}$ (4.9 L/100 km; 58 mpg$_{Imp}$)	51 mpg$_{US}$ (4.6 L/100 km; 61 mpg$_{Imp}$)	33 mpg$_{US}$ (7.1 L/100 km; 40 mpg$_{Imp}$)	28 mpg$_{US}$ (8.4 L/100 km; 34 mpg$_{Imp}$) (2WD) 27 mpg$_{US}$ (8.7 L/100 km; 32 mpg$_{Imp}$) (AWD-i)
EPA-estimated highway fuel economy	41 mpg$_{US}$ (5.7 L/100 km; 49 mpg$_{Imp}$)	45 mpg$_{US}$ (5.2 L/100 km; 54 mpg$_{Imp}$)	48 mpg$_{US}$ (4.9 L/100 km; 58 mpg$_{Imp}$)	34 mpg$_{US}$ (6.9 L/100 km; 41 mpg$_{Imp}$)	25 mpg$_{US}$ (9.4 L/100 km; 30 mpg$_{Imp}$) (2WD) 25 mpg$_{US}$ (9.4 L/100 km; 30 mpg$_{Imp}$) (AWD-i)
EPA-estimated drivers fuel economy	45 mpg$_{US}$ (5.2 L/100 km; 54 mpg$_{Imp}$)	47.6 mpg$_{US}$ (4.96 L/100 km;	48.7 mpg$_{US}$ (4.83 L/100 km;	36.6 mpg$_{US}$ (6.43 L/100 km;	
Engine	1.5 L 1NZ-FXE I4 Atkinson cycle				3.3 L 3MZ-FE V6
0-60 mph (97 km/h) acceleration	12.6 s				6.6 s (Motor Trend)
Engine output	70 hp (52 kW) / 82 lb·ft (110 Nm)				36 lb·ft (187 Nm)
Electric motor output	44 hp (33 kW) / 258 lb·ft (350 Nm)				
Net power	60 kW (80 hp)				
Traction battery power	23 kW (44 hp)				45 kW (60 hp)
Requires premium fuel (91 octane (R+M)/2)	No				No (however, premium recommended)
EPA/CARB emission certification					Tier II Bin 3/AT-PZEV
Smog forming emissions compared to average new vehicle	75% less				90% less
Maximum seating	5				7

WIKIPEDIA
The Free Encyclopedia

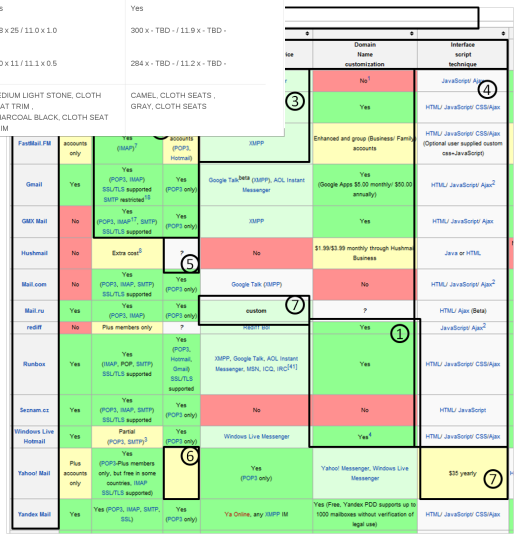

2008featuregrid.xls

2008 Scouting Carn

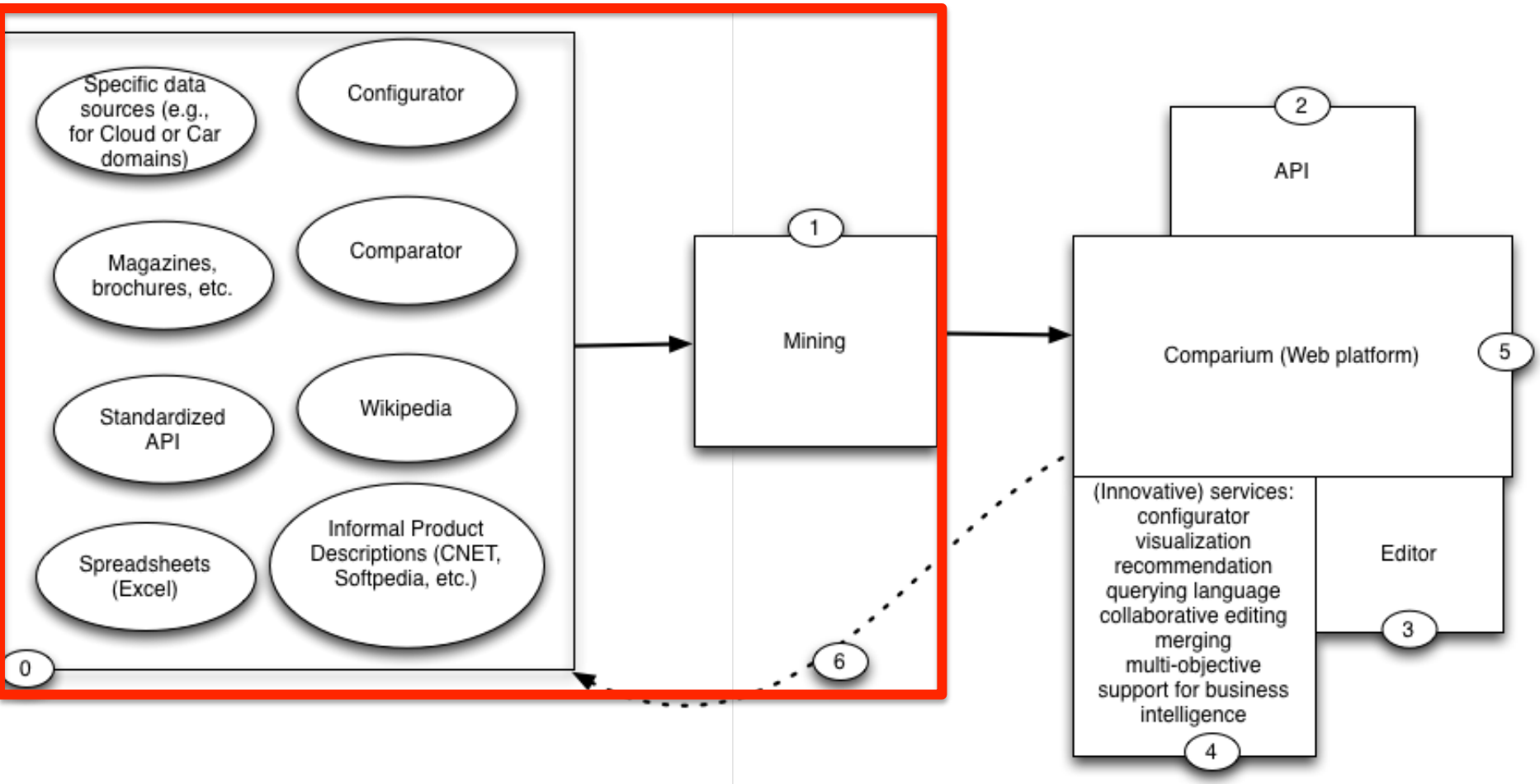
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1																
2	Manufacturer	Model	Price	Resolution	Video	Recovery Time	Burst mode	Time Lapse	Mounting	Security	Built-In Viewer	Flash	Internal Memory	mem	Card Capacity	Battery Type
3	Bushnell	Trail Scout 11-9907	$ 369,95	3/5/7 mpxl	Day/Night 15 Seconds	30 Seconds	NO	No	Locking Bracket	Lock & Password	NO	Both	None	SD	2GB	(4) D
4	Bushnell	Trail Sentry 11-9305	$ 169,95	5.0 mpxl	Day/Night 15 Seconds	30 Seconds	NO	No	Strap	NO	NO	Both	None	SD	2GB	(4) D
5	Bushnell	Trail Sentry 11-9284	$ 94,95	4.0 mpxl	Day Only 15 Seconds	30 Seconds	NO	No	Strap	NO	NO	Incandescent	None	SD	2GB	(4) D
6	Cuddeback	Capture	$ 199,95	3.0 mpxl	No	30 Seconds	NO	No	Strap	No	NO	Incandescent	30 mb	SD	2GB	(4) D
7	Cuddeback	Capture IR	$ 249,95	3.0 mpxl	No	30 Seconds	NO	No	Strap	No	NO	IR	30 mb	SD	2GB	(4) D
8	Cuddeback	Excite	$ 299,95	2.0 mpxl	No	60 Seconds	No	No	Screw Inside Enclosure	Padlock Tab	No	Incandescent	16mb	CF	2GB	(4) D
9	Cuddeback	Expert	$ 399,95	3.0 mpxl	10-60 Seconds Day Only	60 Seconds	No	1 hour only	Password & Padlock Tab	No	NO	Incandescent	16mb	CF	2GB	(4) D
10	DLC	Covert 1	$ 199,95	5.0 mpxl	0-60 seconds	6-10 seconds	* 3 shot	No	Strap		NO	IR	No	SD	2GB	8 AA
11	DLC	Covert 2	249,95	5.0 mpxl	0-60 seconds	6-10 seconds	* 3 shot	No	Strap	No	NO	IR	No	SD	2GB	8 AA
12	Leaf River	DV-5	$ 279,95	5.0 mpxl	3-60 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	1.8"	Incandescent	16mb	SD	2GB	(4) D & (3) C
13	Leaf River	DV-7SS	$ 329,95	7.0 mpxl	3-60 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	2.4"	Incandescent	16mb	SD	2GB	(4) D & (3) C
14	Leaf River	IR-7SS	$ 349,95	7.0 mpxl	3-60 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	2.4"	Infared	16mb	SD	2GB	(4) D & (3) C
15	Leaf River	IR-5	$ 299,95	5.0 mpxl	3-60 Seconds Day Only	20 Seconds	3 Shot	Yes	Enclosed Bracket	Locking Bar Provided	1.8"	Infared	16mb	SD	2GB	(4) D & (3) C
16	Moultrie	I40	$ 199,95	4.0 mpxl	Day 5,15,30 Night 5 only	60 Seconds	* 3 shot	No	Strap	NO	NO	Infared	32 MB	SD	2GB	(6) D
17	Moultrie	I60	$ 299,95	6.0 mpxl	Day 5,15,30 Night 5 only	60 Seconds	* 3 shot	1 hour only	Strap	Password	1.5"	Infared	32 MB	SD	2GB	(6) D
18	Moultrie	M40	$ 167,95	4.0 mpxl	Day Only 5,15,30 second	60 Seconds	* 3 shot	No	Strap	NO	NO	Incandescent	32 MB	SD	2GB	(6) D



Vehicle			
Number of Passenger Doors		4	
Brakes			
Brake Type	Pwr	Pwr	Pwr Regenerative
Brake ABS System	4-Wheel	4-Wheel	4-Wheel
Disc - Front (Yes or)	Yes	Yes	Yes
Disc - Rear (Yes or)	Yes	Yes	Yes
Front Brake Rotor Diam x Thickness (mm/in)	- TBD - / - TBD -	278 x 25 / 11.0 x 1.0	300 x - TBD - / 11.9 x - TBD -
Rear Brake Rotor Diam x Thickness (mm/in)	- TBD - / - TBD -	280 x 11 / 11.1 x 0.5	284 x - TBD - / 11.2 x - TBD -
Seat Trim	BISQUE, SEAT TRIM , DARK GREY, SEAT TRIM	MEDIUM LIGHT STONE, CLOTH SEAT TRIM , CHARCOAL BLACK, CLOTH SEAT TRIM	CAMEL, CLOTH SEATS , GRAY, CLOTH SEATS



	Domain Name customization	Interface script technique
FastMail.FM	No[1]	JavaScript/ Ajax
Gmail	Yes	HTML/ JavaScript/ CSS/Ajax
GMX Mail	Enhanced and group (Business/ Family) accounts	HTML/ JavaScript/ CSS/Ajax (Optional user supplied custom ces+JavaScript)
Hushmail	No	HTML/ JavaScript/ Ajax[2]
Mail.com	$1.99/$3.99 monthly through Hushmail Business	HTML/ JavaScript/ Ajax
Mail.ru	No	Java or HTML
rediff	?	HTML/ JavaScript/ Ajax[2]
Runbox	Yes	HTML/ Ajax (Beta)
Seznam.cz	No	JavaScript/ Ajax[2]
Windows Live Hotmail	Yes	HTML/ JavaScript/ CSS/Ajax
Yahoo! Mail	No	HTML/ JavaScript
Yandex Mail	Yes[4]	HTML/ JavaScript/ CSS/Ajax
	$35 yearly	HTML/ JavaScript/ CSS/Ajax
	Yes (Free, Yandex PDD supports up to 1000 mailboxes without verification of legal use)	HTML/ JavaScript/ CSS/Ajax


Specific data sources (e.g., for Cloud or Car domains)
Configurator
Magazines, brochures, etc.
Comparator
Standardized API
Wikipedia
Spreadsheets (Excel)
Informal Product Descriptions (CNET, Softpedia, etc.)
0
1
Mining
2
API
Comparium (Web platform)
5
(Innovative) services:
configurator
visualization
recommendation
querying language
collaborative editing
merging
multi-objective
support for business intelligence
4
Editor
3
6

Projet #3
aka WebFML

- Domaine
  - IDE Web pour un langage
- Technologie
  - Java, JavaScript, web
- Projet
  - Support web pour apprendre et utiliser un langage dédié (FAMILIAR)

MIAGE (la suite)

- Suite du travail de Geoffrey Alexandre
  - Mise en place de tutoriaux en ligne
  - Amélioration de l'éditeur (e.g., auto-complétion)
  - Amélioration de la gestion de fichiers
  - Correction de bugs
  - Mise en production
  - …

https://github.com/FAMILIAR-project/webfml

Langage sur le Web

Welcome to FAMILIAR project website

feature models, variability, software product lines, configuration, domain-specific language, automated reasoning, model-driven engineering

Familiar Tutorial | VM Tutorial | Familiar IDE

This website is currently in development ! Please contact us to send feedback about the website and the tutorial. Click Here ! to contact us.

News

- We are migrating to github and the repos/pages will be regularly updated in the next few days
- SCP journal paper about FAMILIAR is in press
- FAMILIAR was part of a tutorial at Software Product Line Conference 2012 (SPLC'12)
- FAMILIAR was part of a tutorial at International Conference on Model Driven Engineering Languages & Systems (MODELS'12)
- FAMILIAR was at ASE'11 conference for a tool demonstration and short paper presentation. New operators and applications have been presented!
- FAMILIAR has been presented in Belgium for VaMoS 2011 (tool demonstration) and in Taiwan for SAC 2011 (formal presentation).

Familiar

What is Familiar

FAMILIAR (for FeAture Model scrIpt Language for manIpulation and Automatic Reasoning) is a language for importing, exporting, composing, decomposing, editing, configuring, computing "diffs", refactoring, reverse engineering, testing, and reasoning about (multiple) feature models. All these operations can be combined to realize complex variability management tasks.

FAMILIAR was originally created at I3S laboratory by Mathieu Acher, Philippe Collet and Philippe Lahire and is now jointly and openly managed by the Triskell team (INRIA / IRISA / University of Rennes 1) , the MODALIS team (I3S laboratory, University of Nice Sophia Antipolis) and at Colorado State University (USA).

> **Dear academics/scientists, please cite FAMILIAR with the following bibliographical entry:**

Tutorial

Familiar

FAMILIAR (for FeAture Model scrIpt Language for manIpulation and Automatic Reasoning) is a language for importing, exporting, composing, decomposing, editing, configuring, computing "diffs", refactoring, reverse eng reasoning about (multiple) feature models. All these operations can be combined to realize complex variability management tasks.

Here you will see how this language works and you have nothing to install !!

Chapters

Introduction

Introduction

Welcome to the tutorial part of the familiar project's webiste. This part will explain how the language works. For a better comprehension of the language you have an editor on the right part to execute some code. to execute your code you have just to click on the button **execute Familiar code**.

You will find some code part, like this below, to see the result of the code.

```
//I'm a code part
```

Run

You have to click on the button **Run** to put he code on the editor.

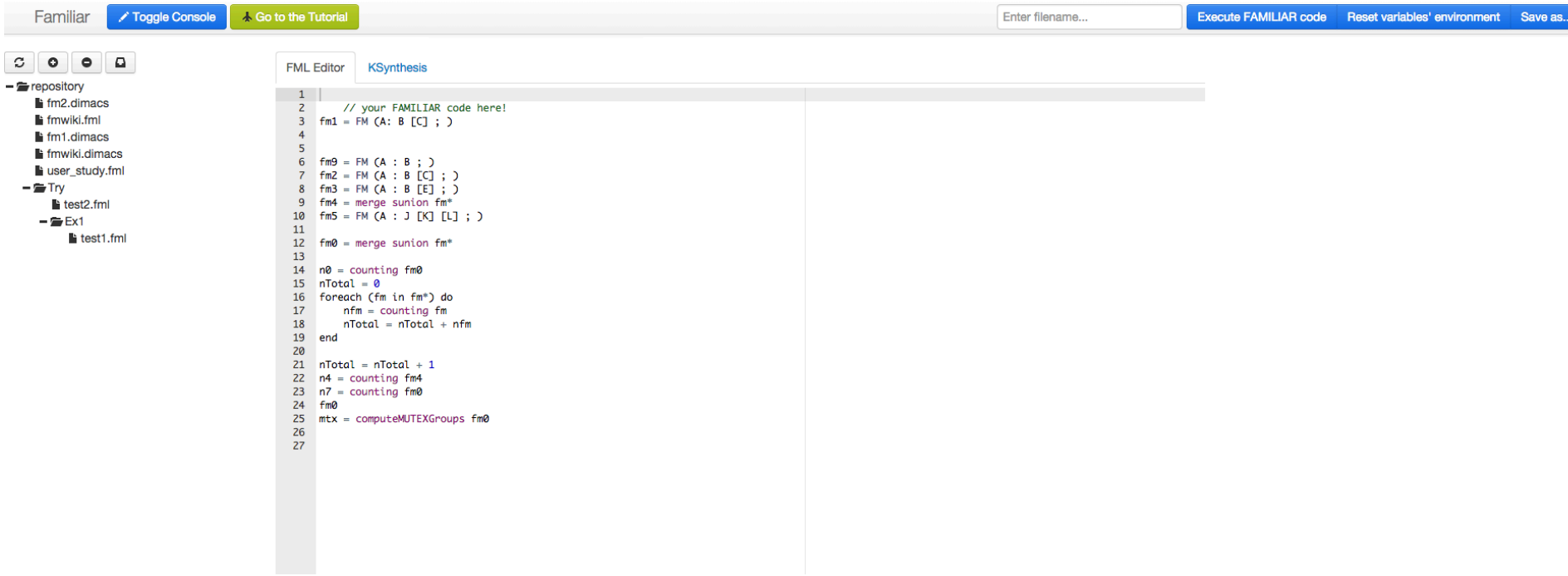
A first exemple

```
fmwiki = FM (Wiki: License Storage ["Programming Language"] ;
            License: ("Proprietary License"|"Open Source") ;
            Storage: (PostgreSQL|MySQL) ;
            "Programming Language": (Java|PHP) ;
            (PostgreSQL <-> "Proprietary License");
            ("Proprietary License" -> !"Programming Language");
        )
```

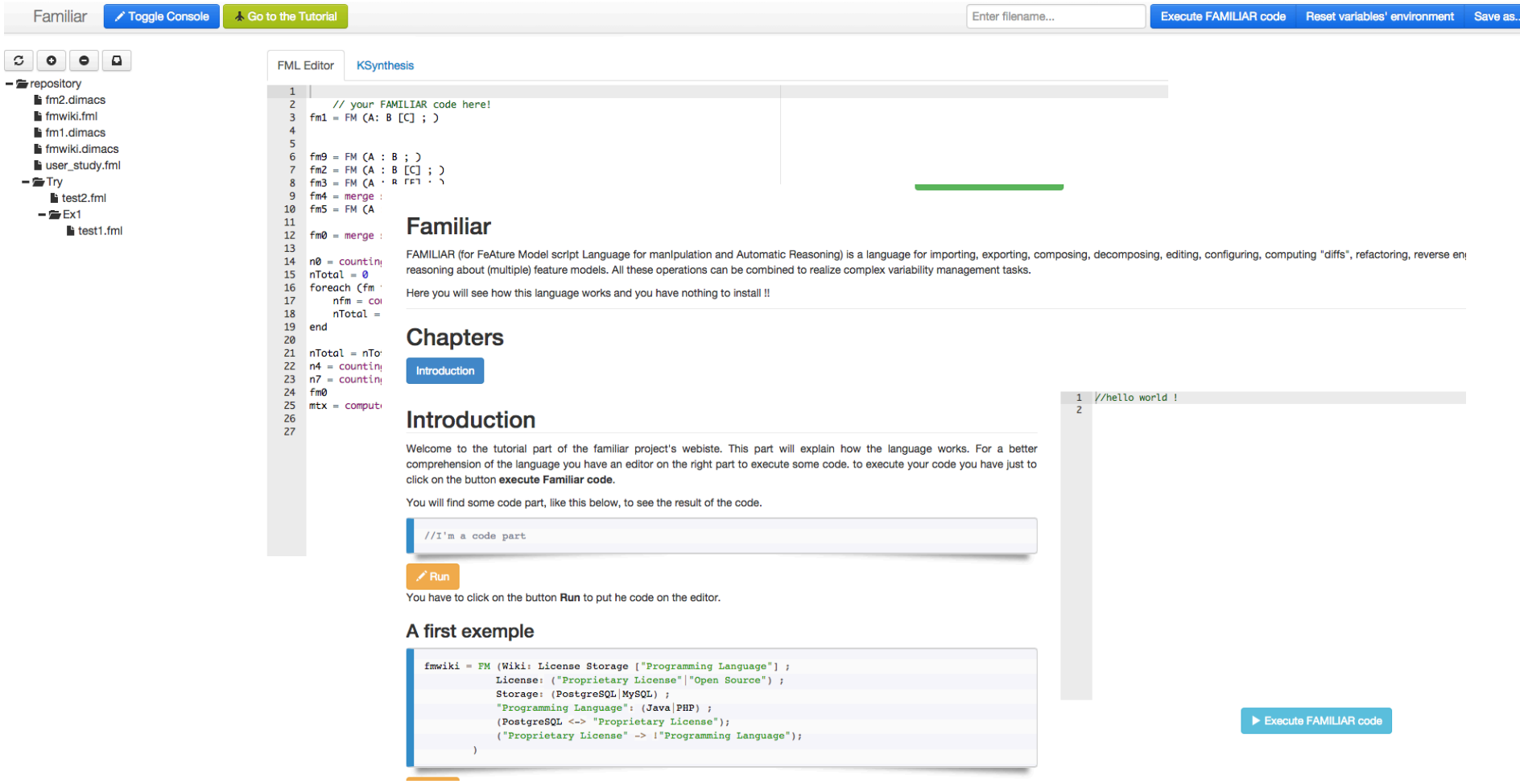
```
1 //hello world !
2
```

▶ Execute FAMILIAR code

Editeur, interactive mode



Objectif: visualisation graphique et mise en production large échelle



A rendre

- Comprendre et documenter un projet (CD)
  - objectif: en anglais directement sur la page github des projets (à condition que ce soit accepté par les responsables/clients du projet)
  - en pratique: soumission au « client » ainsi que sous la forme d'un document PDF à mathieu.acher@irisa.fr

- Sprint 1 (SP1)
  - code source, instructions, compte rendu succinct (en français)

- Sprint 2 (SP2)
  - code source, instructions, compte rendu succinct (en français)

Soutenance (PR)

- 20’ de présentation
  - Rappel du contexte
  - Expliquer l’architecture du projet, les technologies utilisées, et son déploiement (CD)
  - Description de l’implémentation (SP1 + SP2)
  - Retour d’expérience

- 10’ de questions par le jury

Séances

- 6 séances
  - Une partie TD et une partie TP, 6 * 2 = 12
- TP et TD
  - 2 intervenants (Sana Ben Nasr + Mathieu Acher)
    - Projet #2, PCM (Sana)
    - Projet #1, 3D et #3, WebFML (Mathieu)
  - S'organiser pour que chaque groupe de TP (resp. TD) corresponde à un projet unique (e.g., tous les groupes qui ont choisi le projet #1 vont dans un même groupe de TP/TD)
- Cours magistraux: adaptatifs (wait & see)
    - Outils (e.g., git), Méthodologie de tests, JavaScript

Evaluation

- CD (5 points)
  - ~ fin novembre
- SP1 (5 points)
  - ~ début décembre
- SP2 (5 points)
  - ~ début janvier
- PR1 (5 points)
  - ~ mi-janvier

Projet

- Groupe
  - Outils de versioning (git)
  - Outils collaboratifs
- Répartissez-vous les rôles
  - Impossible de rendre en temps et en heure sinon
- Résultats attendus
  - Très fortes contraintes sur les dates de rendus (cela fait partie intégrante de l'exercice)

Choix

- Constitution des groupes
- Inscription sur github

- Avant le vendredi 17 octobre midi, un email du responsable de chaque groupe comprenant:
  - le choix du projet
  - la constitution des groupes (nom des membres + email + nom d'utilisateur sur github)

- Une concertation à l'échelle de la promotion est nécessaire
  - >= 2 groupes par projet, <= 5 groupes par projet, 4 min/5 max par groupe