



Séminaire

Le no-code : game-changer du numérique agricole ?

A-t-on encore besoin de développeurs pour innover dans l'Agtech ?

Jeudi 13 avril 2023
à l'Institut Agro Montpellier

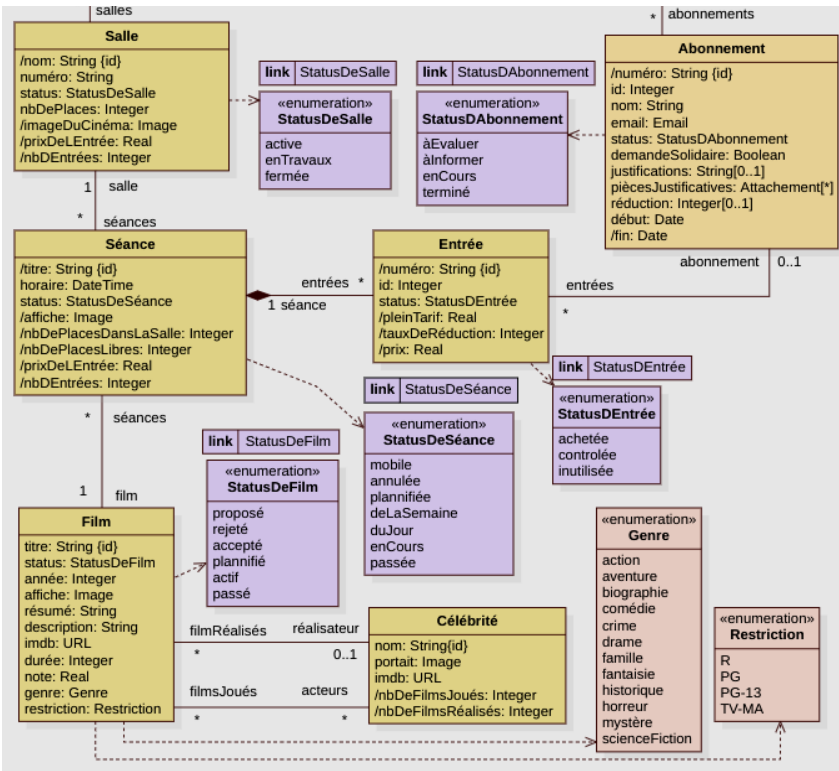


Le NO Code dans l'Histoire de l'Informatique

Jean-Marie Favre

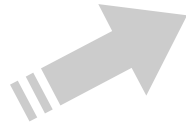
Codeur & NO codeur
Maître de Conférences, UGA

Enseignement



Modélisation

Code




```
32
33 self.fingerprints = self()
34 self.logdupes = True
35 self.debug = debug
36 self.logger = logging.getLogger(__name__)
37 if path:
38     self.file = open(os.path.join(path, "requests.log"),
39                     "a")
40     self.file.seek(0)
41     self.fingerprints.update({s.request})
42
43 @classmethod
44 def from_settings(cls, settings):
45     debug = settings.getbool("requests_log_debug")
46     return cls(job_dir(settings), debug)
47
48 def request_seen(self, request):
49     fp = self.request_fingerprint(request)
50     self.fingerprints
```

NO code



A titre	status	# an	genre	résumé
1 Ad Astra	proposé	2019	Aventure, Drame, Mystère	Lastronaute Roy McBride ...
2 Bullet Train	proposé	2022	Action, Comédie	Five assassins aboard a sw...
3 Beyond Borders	proposé	2003	Aventure, Drame	The world's cruelty is conf...
4 By the sea	proposé	2015	Drame	A couple tries to repair th...
5 Changeling	proposé	2008	Biographie, Crime, Drame	Grief-stricken mother Chri...
6 Glory	passé	1989	Biographie, Drame, Histoire	Robert Gould Shaw leads ...
7 Death Wish	proposé	2018	Action, Crime, Drame	Dr. Paul Kersey is an exp...
8 Gran Torino	passé	2008	Drame	Walt Kowalski, renfrogné ...
9 Life or Something Like It	passé	2002	Comédie	Revolves around Frank, an...

Recherche

NO Code
pour **modifier** 
des applications
existantes

Nom/Adresse

Nom :		Numéro Sécurité Sociale :		
Adresse :				
Ville :	État/Province :	Code Postal :	Téléphone :	Profession :
Apport	Location	(encerclez S.V.P.)	Remboursement mensuel ou location	Durée :
Adresse Précédente:				
Ville:	État:	Code Postal:		
Apport	Location	(encerclez S.V.P.)	Remboursement mensuel ou location	Durée :

Historique professionnel

Employeur:		Poste occupé:		
Adresse:		Supérieur hiérarchique:		
Ville:	État:	Code Postal:	Salaire:	
Téléphone:		Du:	Au:	
Employeur:		Poste occupé:		
Adresse:		Supérieur hiérarchique:		
Ville:	État:	Code Postal:	Salaire:	
Téléphone:		Du:	Au:	

Recherche

NO Code
pour **modifier**
des applications
existantes

Nom/Adresse



Nom :	indice <input type="text"/>	Numéro Sécurité Sociale :		
Adresse :				
Ville :		État :	Téléphone :	Profession :
Apport	Location (encerclez S.V.P.)	Remboursement mensuel ou location		Durée :
Adresse Précédente:				
Ville:	État:	Code Postal:		
Apport	Location (encerclez S.V.P.)	Remboursement mensuel ou location		Durée :

Add date field ...
Add lookup field ...
Conditional formatting ...

Historique professionnel

Employeur:	Poste occupé:			
Adresse:	Supérieur hiérarchique:			
Ville:	État:	Code Postal:	Salaire:	
Téléphone:	Du:		Au:	
Employeur:	Poste occupé:			
Adresse:	Supérieur hiérarchique:			
Ville:	État:	Code Postal:	Salaire:	
Téléphone:	Du:		Au:	



Un peu d'histoire

Histoire des Technologies de l'Information

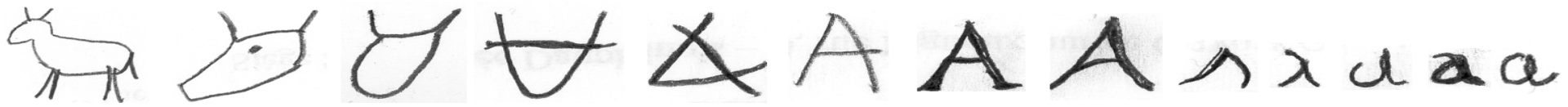


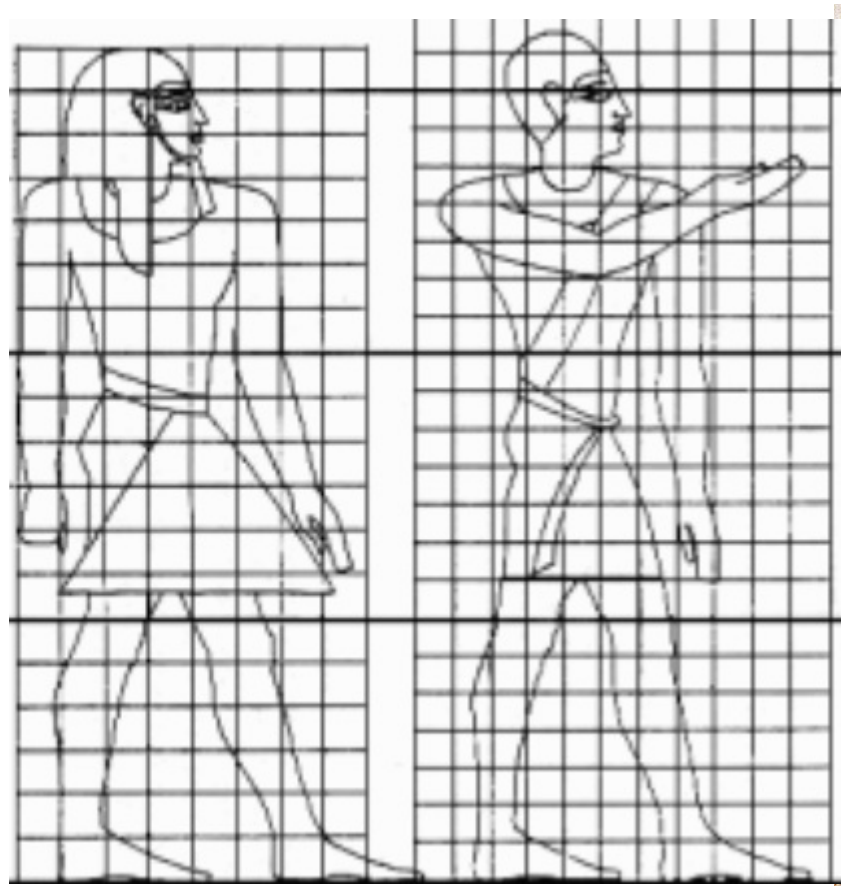
hiéroglyphes + informatique



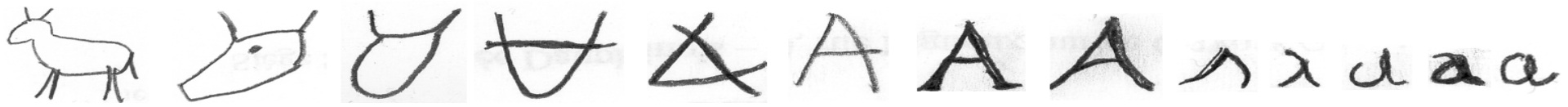


AgroTIC
-2023





AgroTIC
-2023



MOVE A TO B



G. Hopper

MOVE ▾ A ▾ TO ▾ B ▾



G. Hopper

- Design
- Workflow
- Data**
- Styles
- Plugins
- Settings
- Logs

Data types Privacy App data Option sets File manager

Custom data types

- Célébrité Publicly visible
- Film Publicly visible
- User Privacy rules applied

New type

Make this data type private by default

Things will be visible to everyone

[Create](#)

Fields for type Film (show deleted fields)

Type name	<input type="text" value="Film"/>	
<input type="text" value="acteurs"/>	List of Célébrités	
<input type="text" value="année"/>	number	default <input type="text"/>
<input type="text" value="titre"/>	text	default <input type="text"/>
Creator	User	Built-in field
Modified Date	date	Built-in field
Created Date	date	Built-in field
Slug	text	Built-in field

[Create a new field](#)



Voiture

Champs +

- Marque
- Modèle
- Carburant
- Immatriculation
- Kilométrage
- ma propriété

Immatriculation

Champs +

- Numéro
- Mise en circulation
- Prochain contrôle techn...

Inspecteur

Propriétés

Clé
immatriculation

Nom
Immatriculation Fr

Clés uniques

Aptitudes

- Document
- Géolocalisation
- Signature
- Tag
- Magnet

Permissions

R	W	
<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Admin
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Plan-Editeur
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Process Manager
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Admin Editeur
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Viewer

Appliquer à tous les champs

VI

Navigation icons: Home, Back, Forward, Refresh, Share

Settings icon

Document icon

Location pin icon

Settings icon

Document icon

Shield icon

PM

DÉPART

Créer un Smart Object

so:depense

Sauvegarder dans...

Smart Model*

Dépense

Propriétés +

Aptitudes +

Formulaire

Titre (texte affiché)

Smart Object*

Champs +

MONTANT

DATE

TITRE

Avancé

Tags

Inputs

current-user

Propriétés +

email

Envoyer un email

Envoi ciblé*

Objet*

Dépense

Corps

Nouvelle dépense

HTML

Fichier(s) attaché(s)

Lifecycle

FIN

Choix multiple

Annuler

Conditions

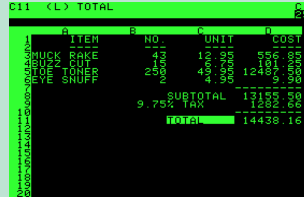
Switch

Boucle

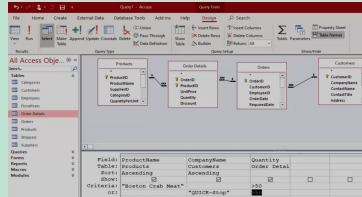


Outils NO Code

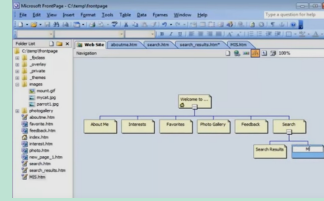
vague #1



visicalc



access

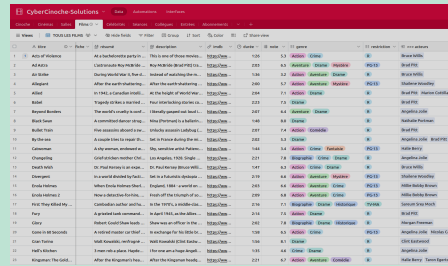


frontpage

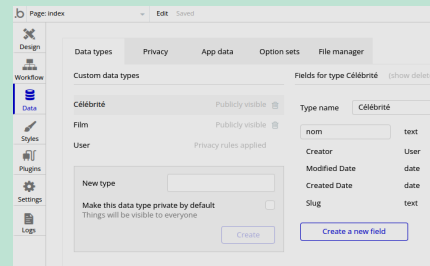
...

vague #2

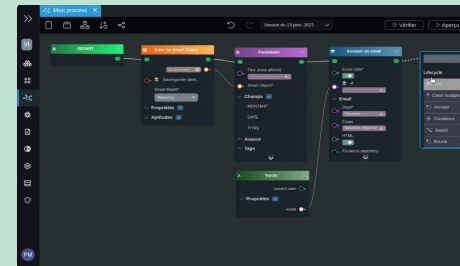
...



airtable



bubble



vision

vague #3

...



Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text
Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text
Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text
Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text	Handwritten text

```
C11 (L) TOTAL C1
25
```

A	B	C	D
ITEM	NO.	UNIT	COST
MUCK RAKE	4	12	55
TONK CUT	1	100	100
TONK TONER	25	49	1248
EYE SNUFF	2	49	98
SUBTOTAL			1315
9.75% TAX			128
TOTAL			14438.16




```

LIST
10 U=1024 : REM VIDEO MEMORY
15 W=40 : REM SCREEN WIDTH
20 DIM X(99),Y(99) : N=0
30 FOR Y=0 TO 24 : FOR X=1 TO W-1
40 P=U+Y*W+X
50 C1=PEEK(P):C2=PEEK(P+1):C0=PEEK(P-1)
60 IF C0<>32 OR C1<48 OR C2>57 THEN 100
70 I=C1-48
80 IF C2<>32 THEN I=I*10+C2-48
90 X(I)=X:Y(I)=Y:IF I>N THEN N=I
100 NEXT X : NEXT Y
110 CS="\-|+|\/-\\"
120 X=X(1):Y=Y(1)
130 FOR I=1 TO N
140 DX=SGN(X(I)-X)
150 DY=SGN(Y(I)-Y)
160 A=ASC(MID$(CS,5+DX*3+DY))-128
170 X=X+DX:Y=Y+DY
180 POKE U+Y*W+X,A
190 IF DX<>0 OR DY<>0 THEN 140
200 NEXT I
READY.

```

```

C11 (L) TOTAL
25

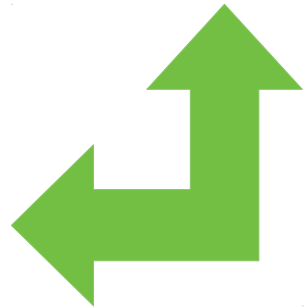
```

A	B	C	D
ITEM	NO.	UNIT	COST
MUCK RAKE	43	12.95	556.85
BUZZ CUT	15	6.75	101.25
TOE TONER	250	49.95	12487.50
EYE SNUFF	2	4.95	9.90
		SUBTOTAL	13155.50
		9.75% TAX	1282.66
		TOTAL	14438.16

Code

1980

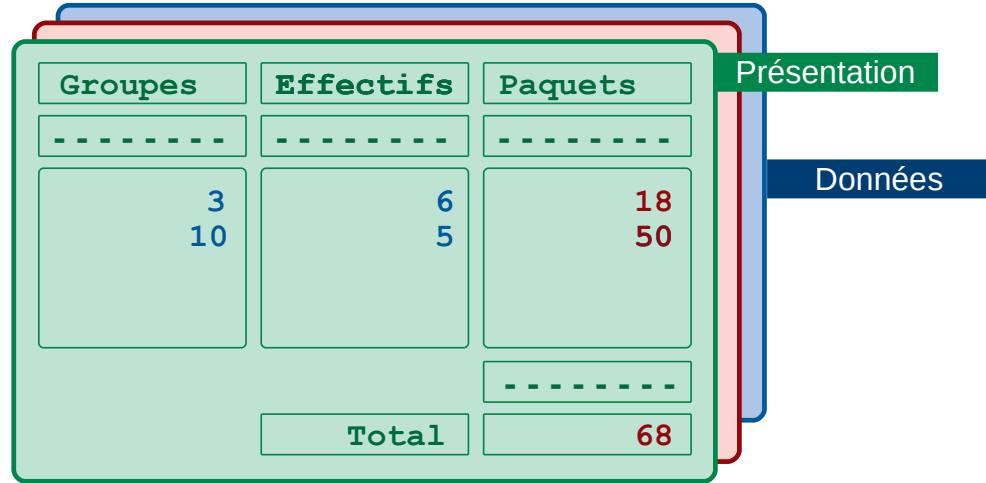
NO Code



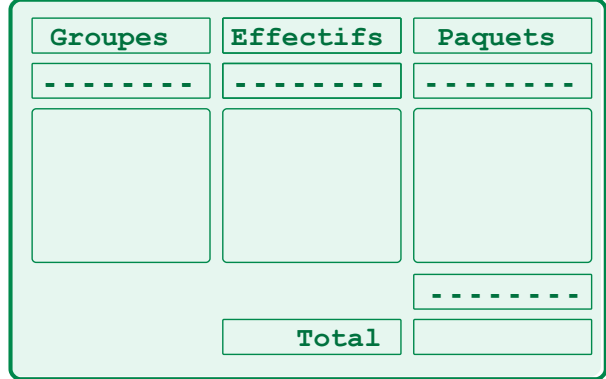
	A	B	C	D
ITEM	NO.	UNIT	COST	
RAKE	4	12	5	80
TONER	25	49	12	88
TONER	25	49	9	98
SUBTOTAL			1315	58
9.75% TAX			128	58
TOTAL			14438	16

Groupes	Effectifs	Paquets
-----	-----	-----
3 10	6 5	18 50

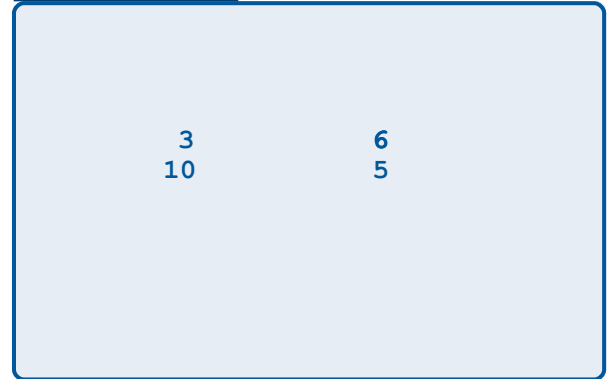
Total		68

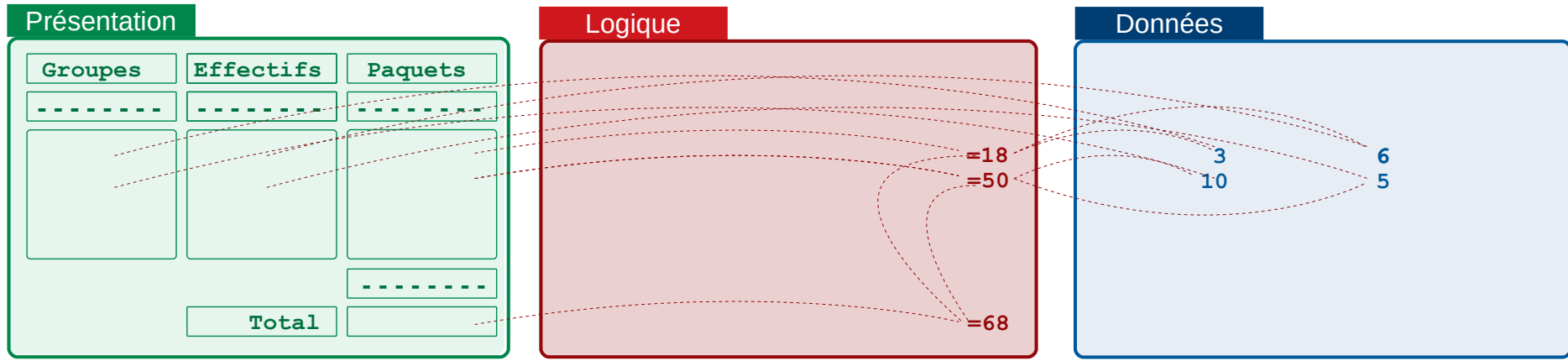
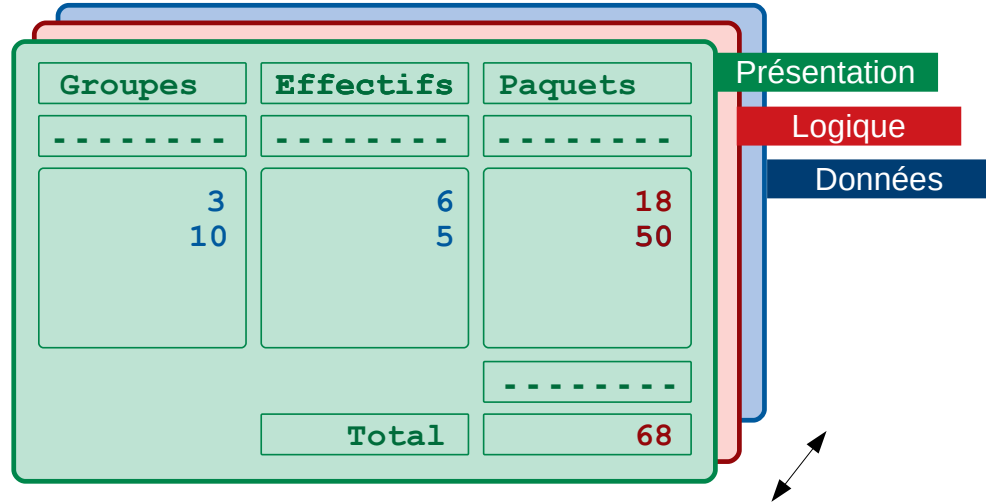


Présentation



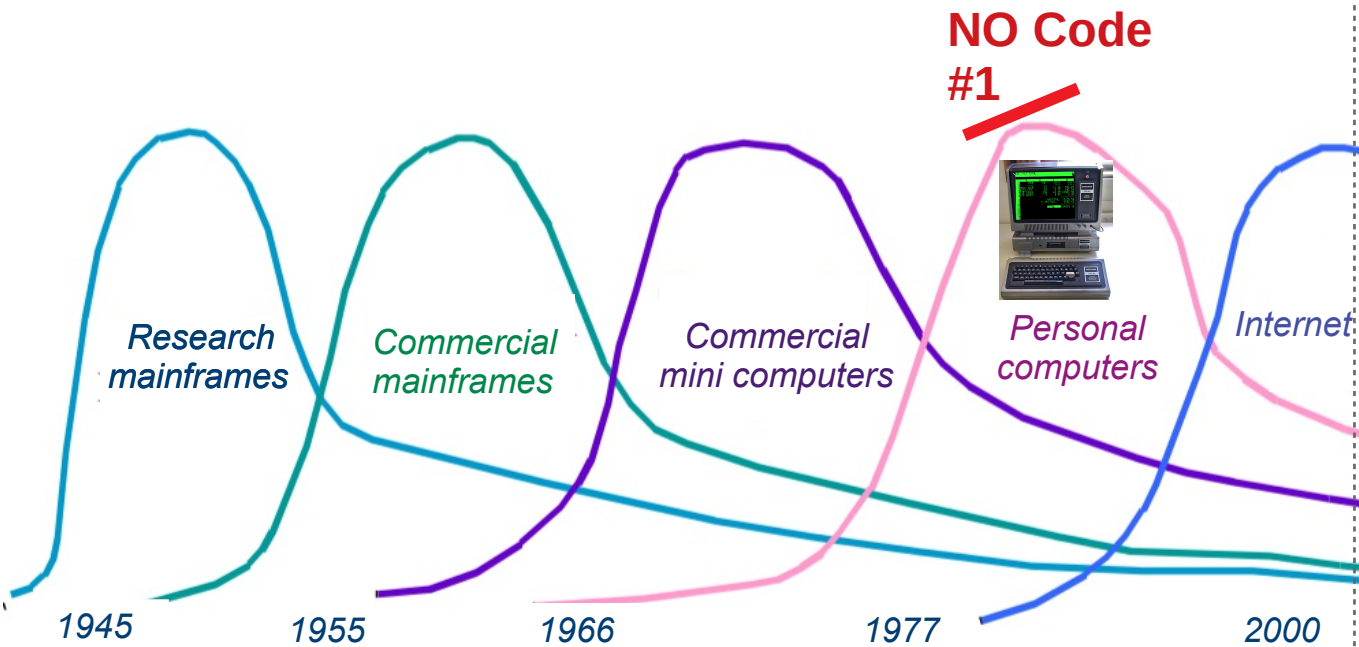
Données





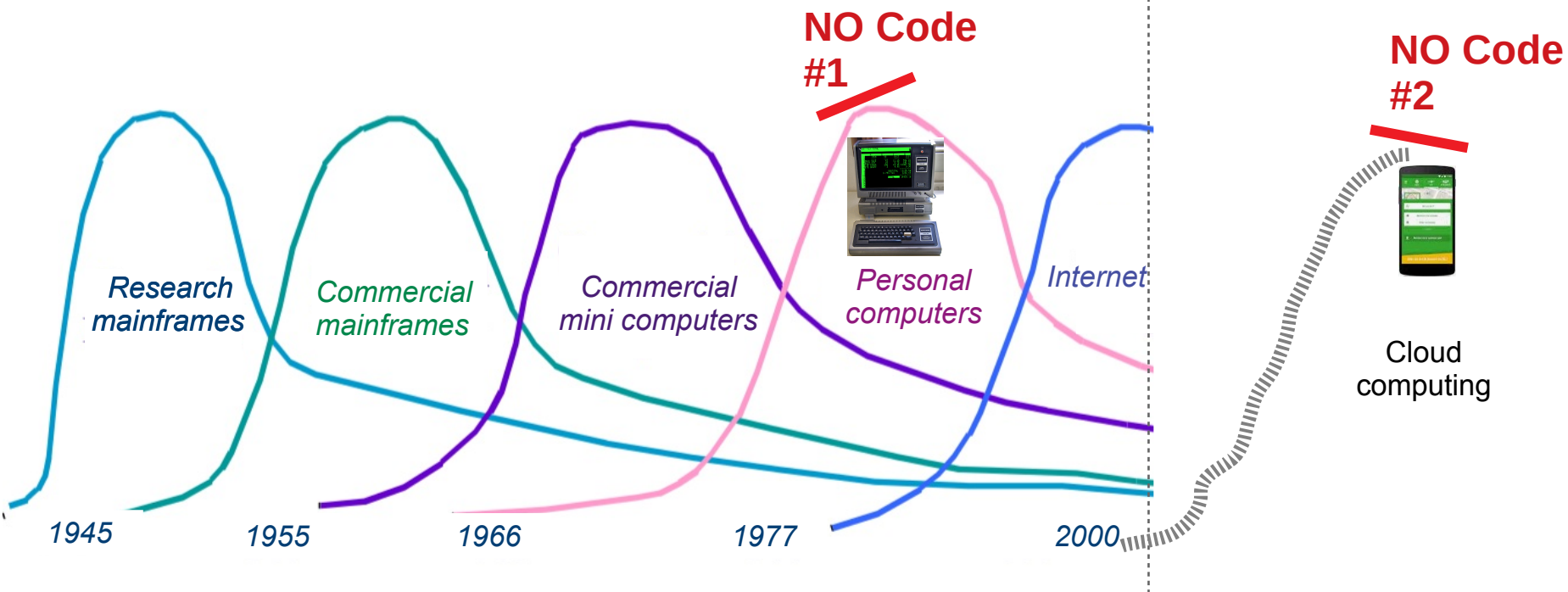
Vagues du matériel

[Raccoon97]



Vagues du matériel

[Raccoon97]

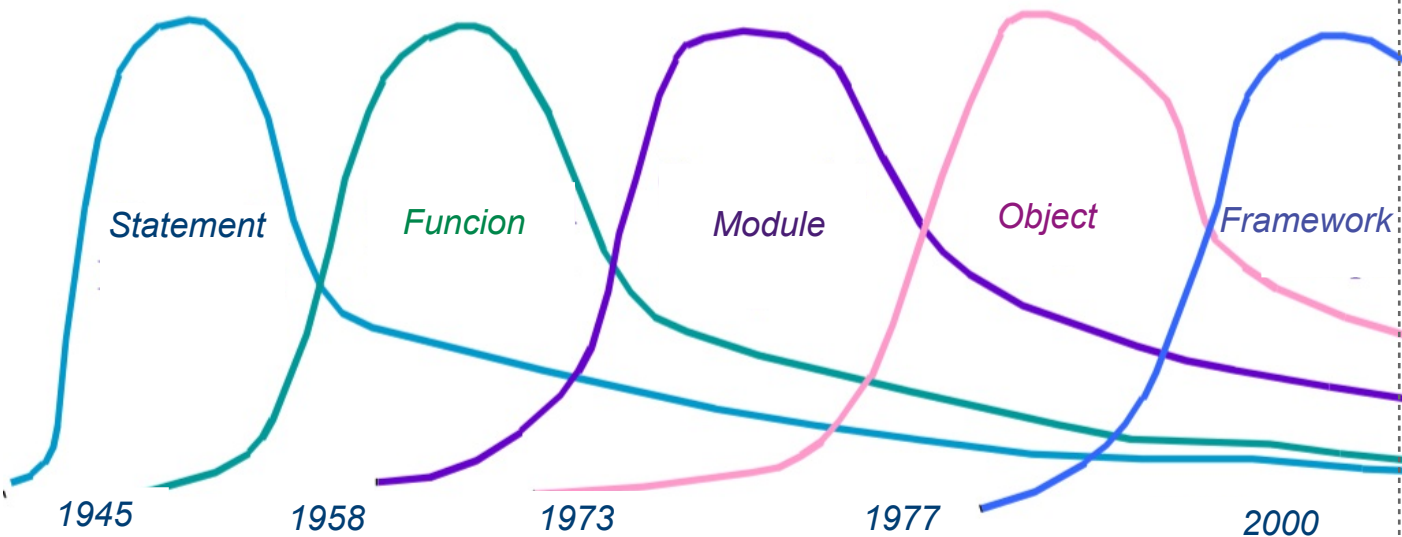


Vagues du logiciel

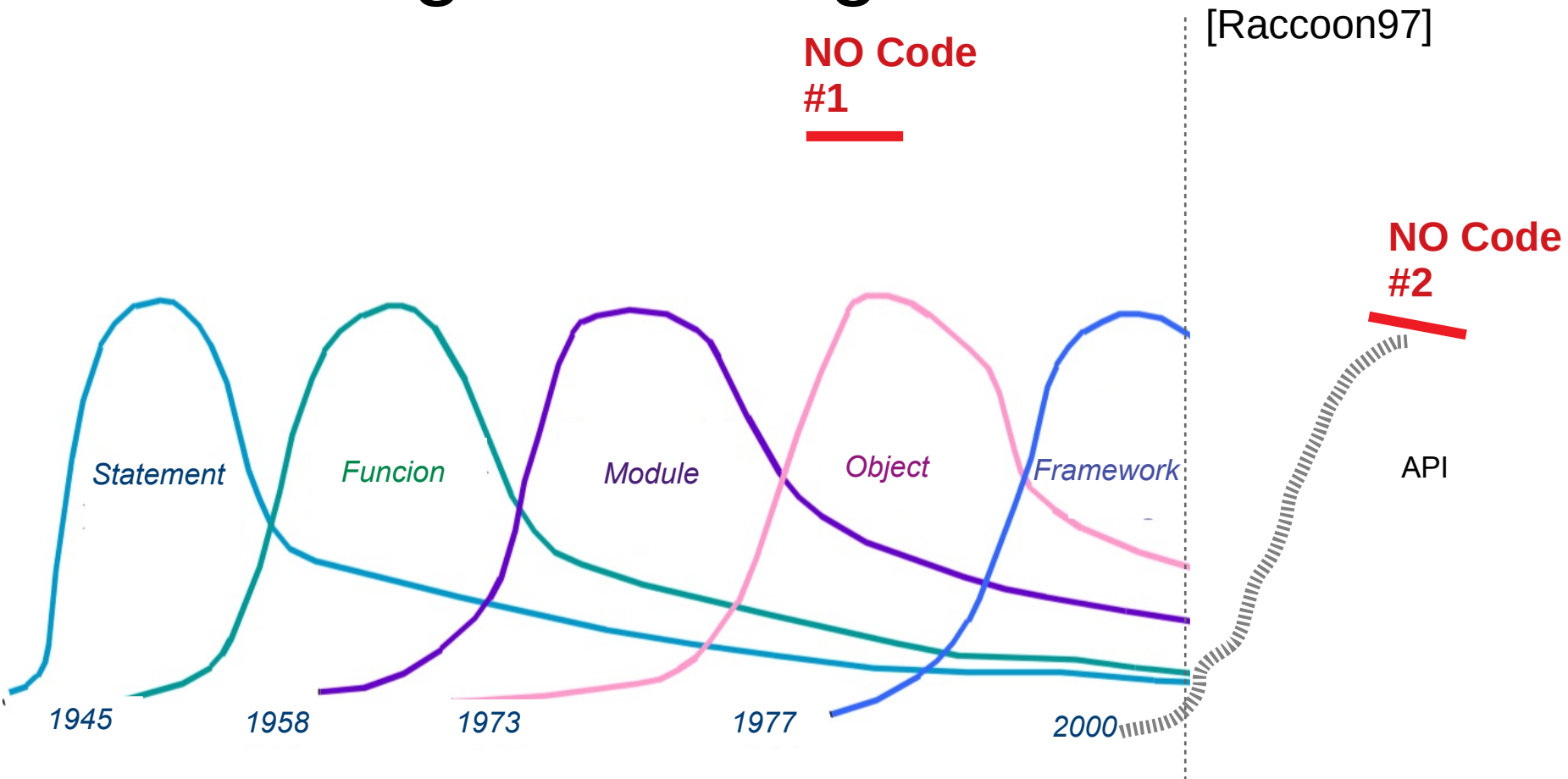
[Raccoon97]

NO Code

#1



Vagues du logiciel





Et maintenant ?





Quelles qualités ?

Fiabilité Performance
Sécurité Maintenabilité
Utilisabilité Disponibilité
Ergonomie Flexibilité
Observabilité Intégrité ...

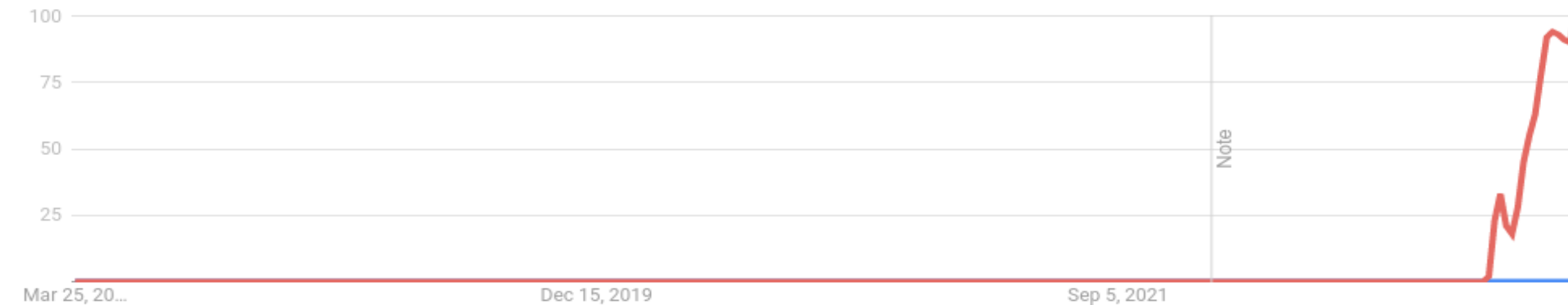


Le futur ?

Google Trends

● nocode
Search term

● chatgpt
Search term



Make a reservation

First name Last name

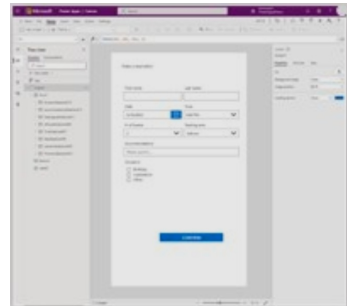
Date Time

of Guests Seating area

Accommodations
Please specify

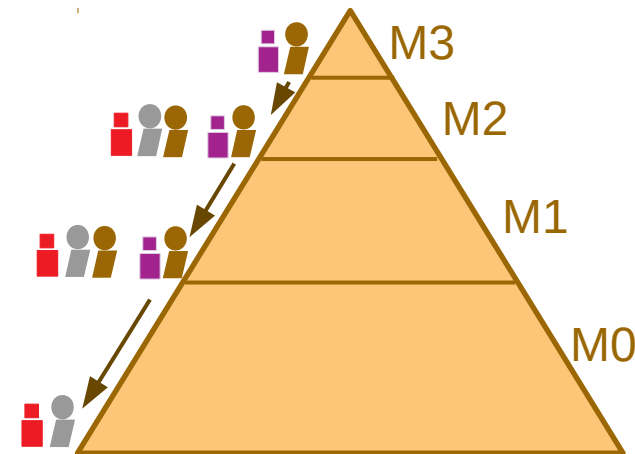
Occasion
 Birthday
 Celebration
 Other

no code + AI

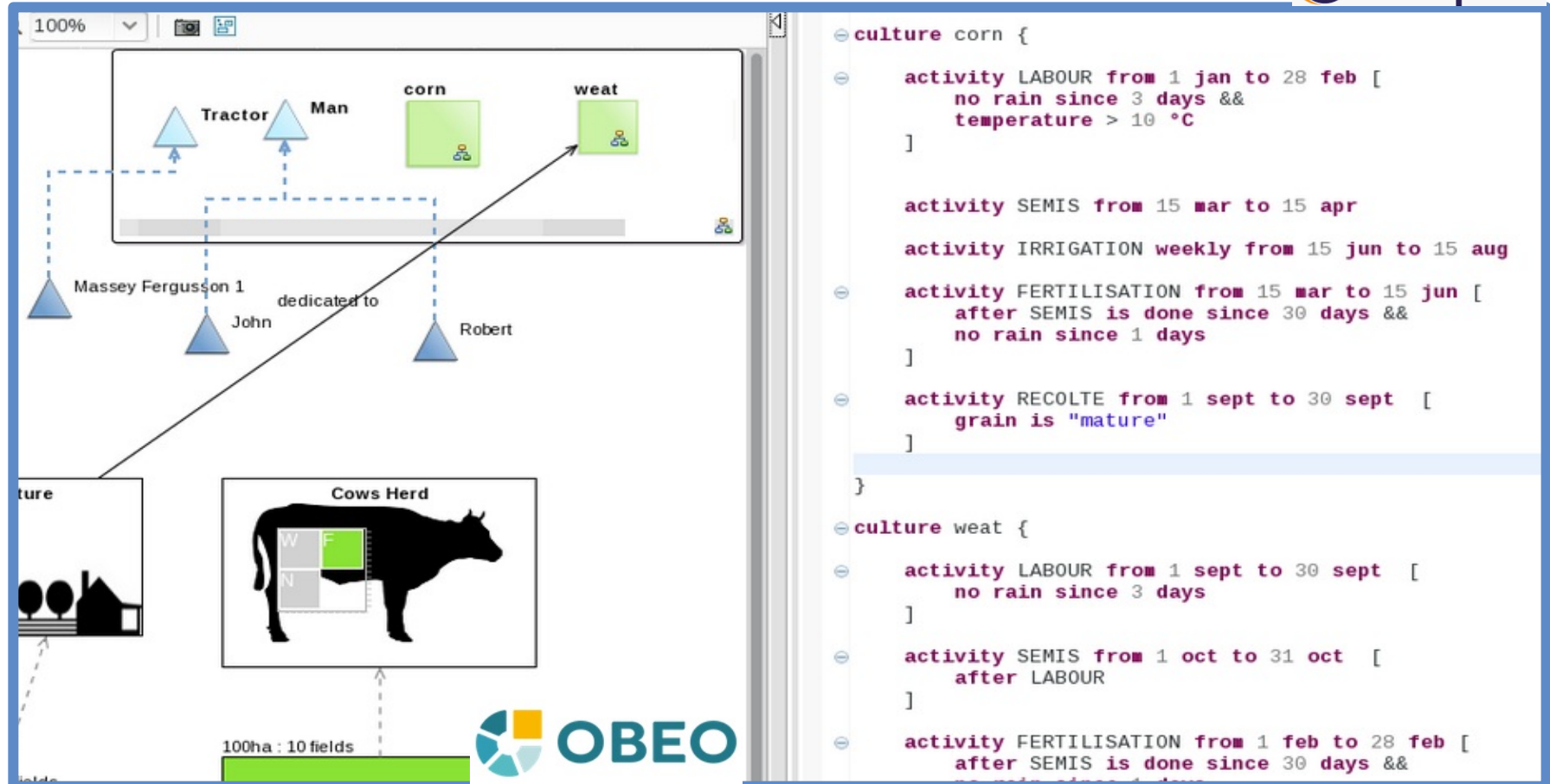


hiéroglyphes
+ informatique

code
code + AI
no code
no code + AI



Langage Spécifique de Domaine



The screenshot displays a domain-specific language (DSL) editor interface. On the left, a domain model is shown with a hierarchy of entities: **Tractor** and **Man** are general categories, with **Massey Ferguson 1** and **John** as specific instances. **Robert** is also a **Man**. **corn** and **weat** are crop entities. A **Cows Herd** is represented by a cow silhouette with a grid overlay. A **100ha : 10 fields** entity is shown at the bottom. A solid arrow points from the **weat** entity to the code editor on the right. A dashed arrow points from the **Tractor** entity to the **activity** block in the code editor.

```

culture corn {
  activity LABOUR from 1 jan to 28 feb [
    no rain since 3 days &&
    temperature > 10 °C
  ]

  activity SEMIS from 15 mar to 15 apr

  activity IRRIGATION weekly from 15 jun to 15 aug

  activity FERTILISATION from 15 mar to 15 jun [
    after SEMIS is done since 30 days &&
    no rain since 1 days
  ]

  activity RECOLTE from 1 sept to 30 sept [
    grain is "mature"
  ]
}


culture weat {
  activity LABOUR from 1 sept to 30 sept [
    no rain since 3 days
  ]

  activity SEMIS from 1 oct to 31 oct [
    after LABOUR
  ]

  activity FERTILISATION from 1 feb to 28 feb [
    after SEMIS is done since 30 days &&

```

100ha : 10 fields





NO Code
(Not Only Code)

Coûts relatifs dans le vie d'un projet

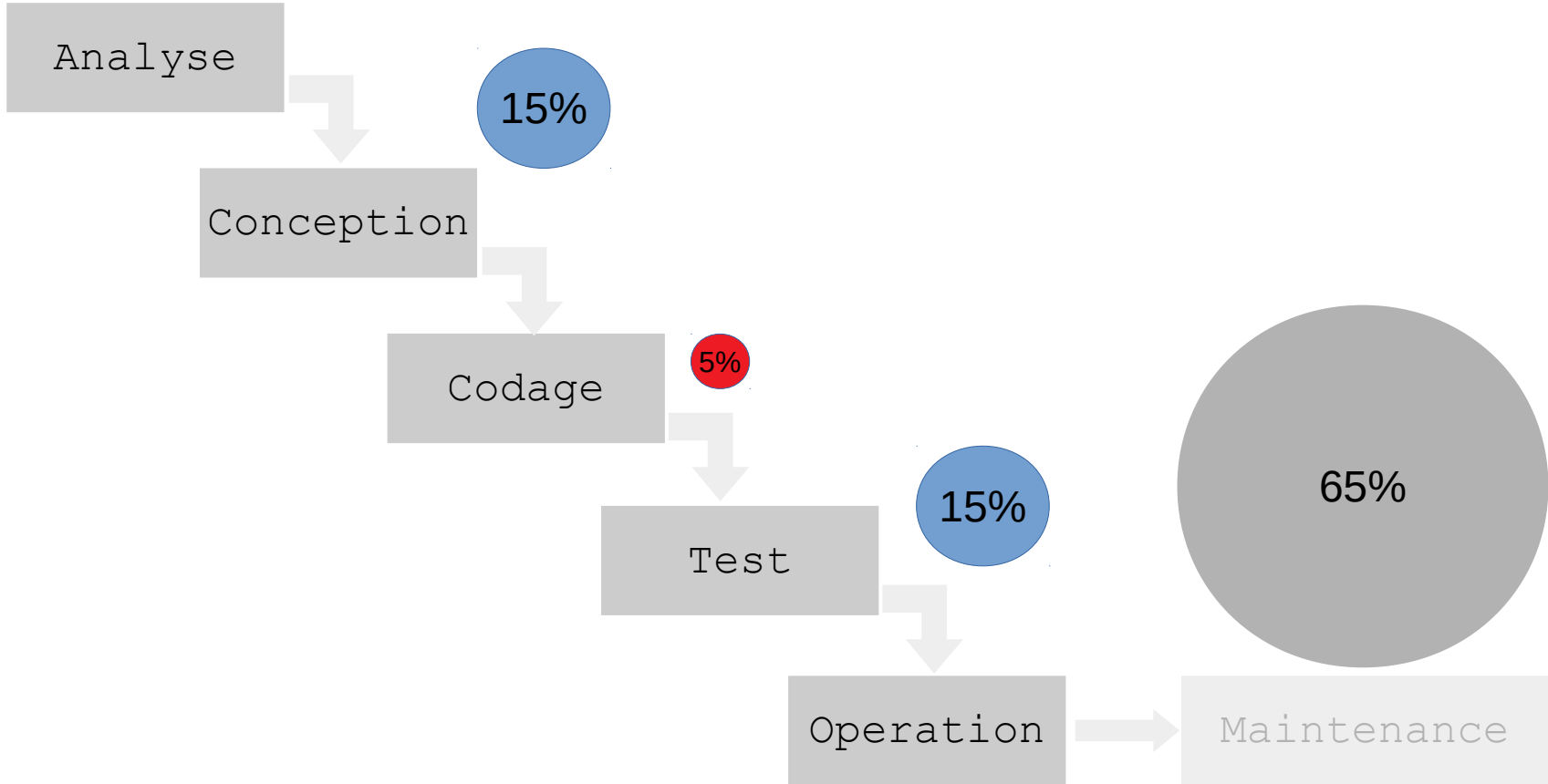
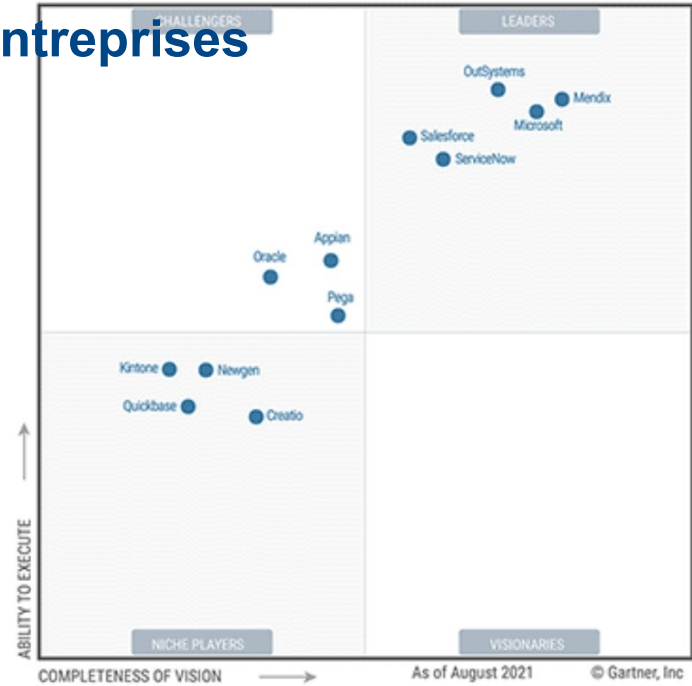


Figure 1: Magic Quadrant for Enterprise Low-Code Application Platforms

Enterprises



airtable	1780	softr	415
bubble	1745	typeform	354
notion	1290	dorik	319
webflow	1034	wordpress	291
make	995	n8n	286
zapier	922	weweb	278
glide	880	carrd	202
adalo	611		

Individus Associations Startups PME

Figure 1: Magic Quadrant for Enterprise Low-Code Application Platforms



Low-Code Principle #1: Model-Driven Development, the Most Important Concept in Low-Code



Johan den Haan • January 29, 2020 • 6 minute read



In a previous post, we [introduced the nine principles](#) that are fundamental to the concept of low-code application development. All are essential. But if we had to identify the one principle to rule them all, without which there would be no [low-code development](#), it's the first principle: model-driven development.