

# Conception Avancée de Base de Données

## Abstraction Encapsulation

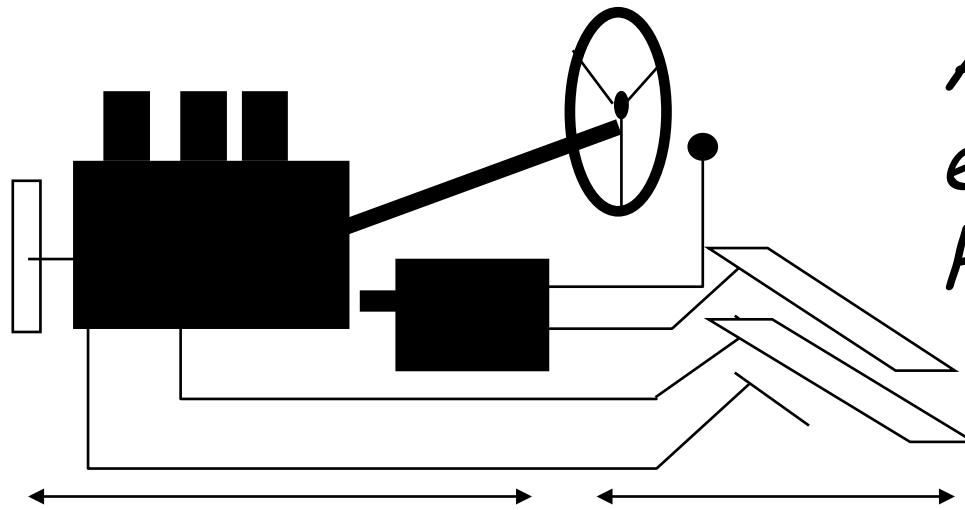
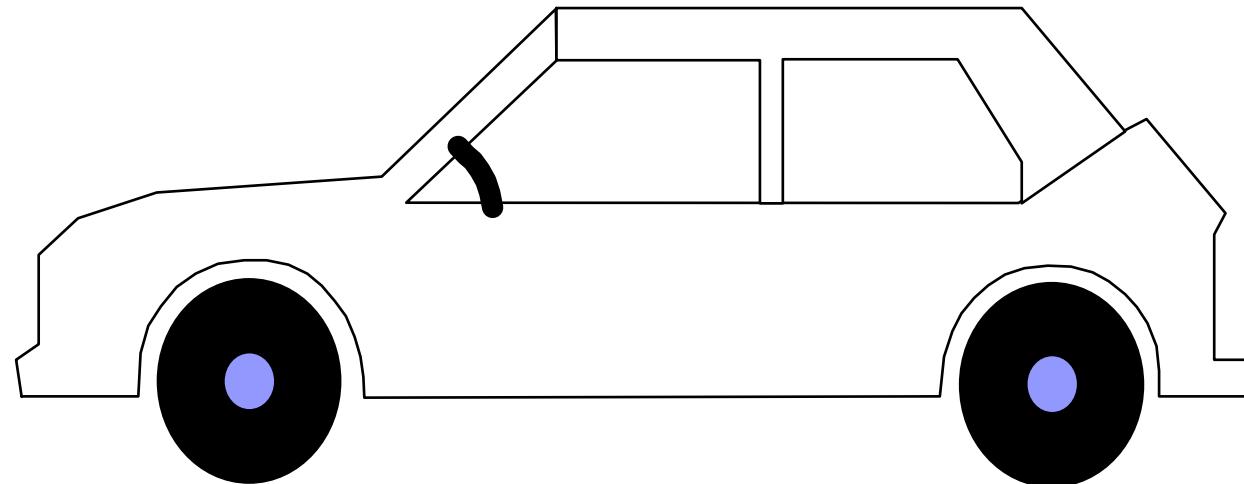


Spaghetti Plate



Traduction en cours

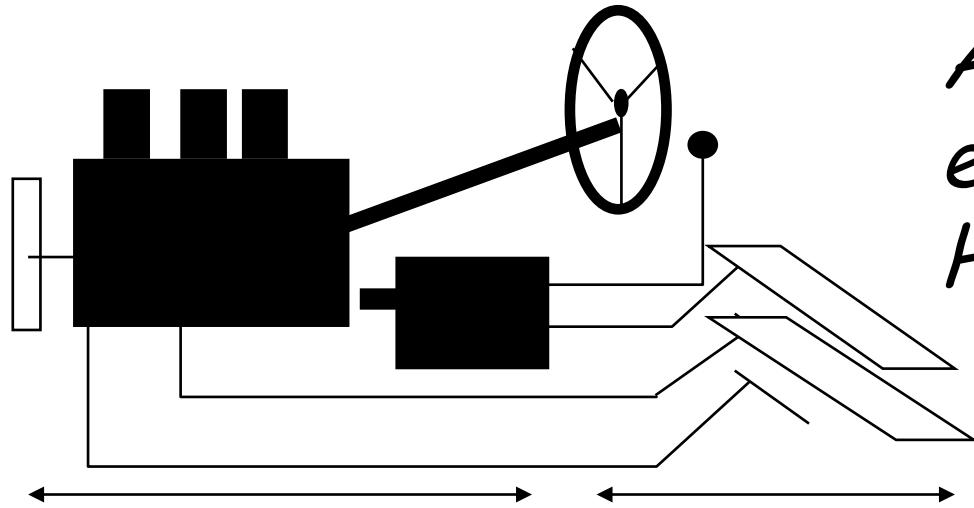
# Design By and For Interfaces (GOF)



*Implementation      Interface*

*A driver doesn't care of  
engine's internal working.  
He only knows the interface*

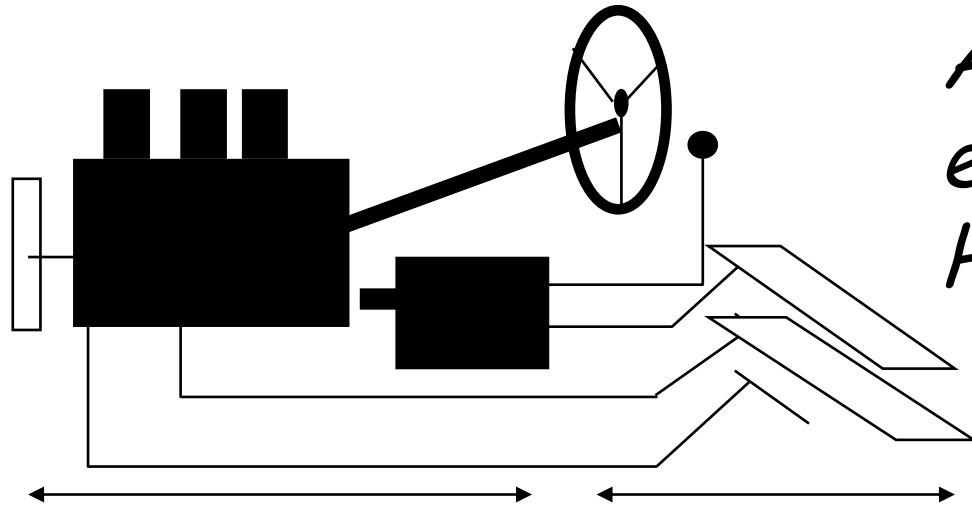
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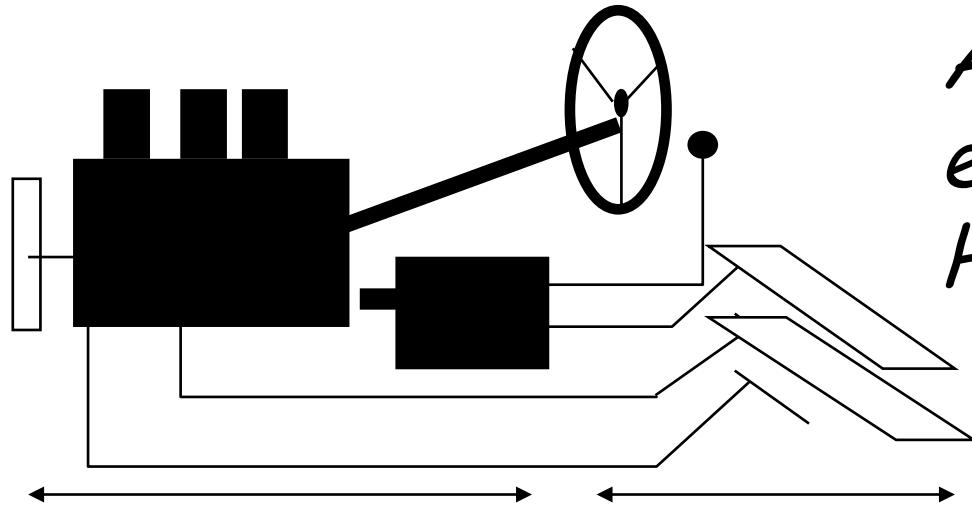
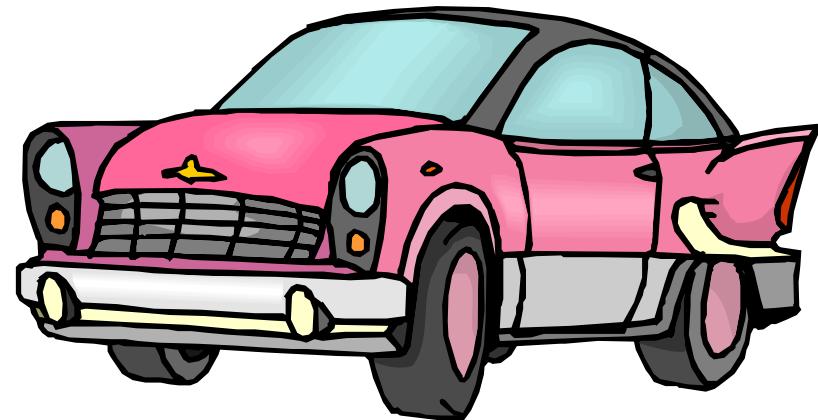
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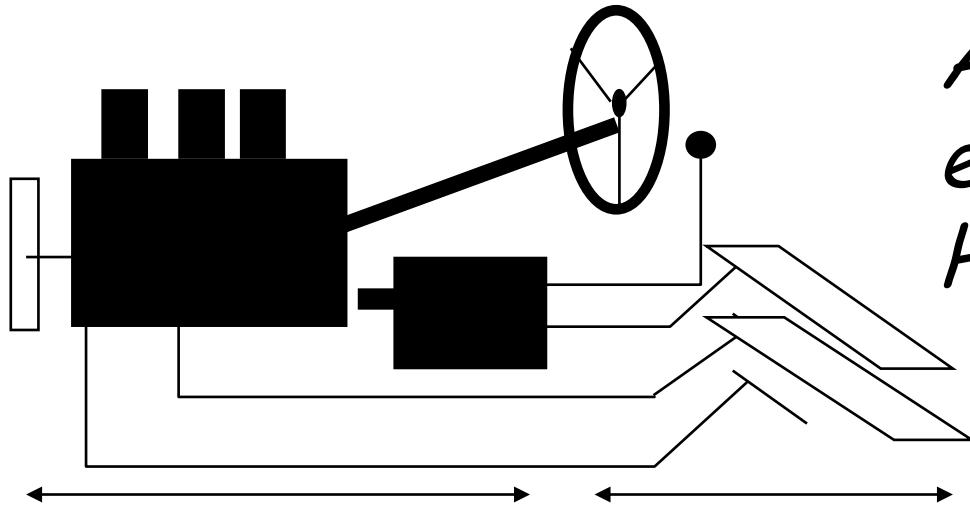
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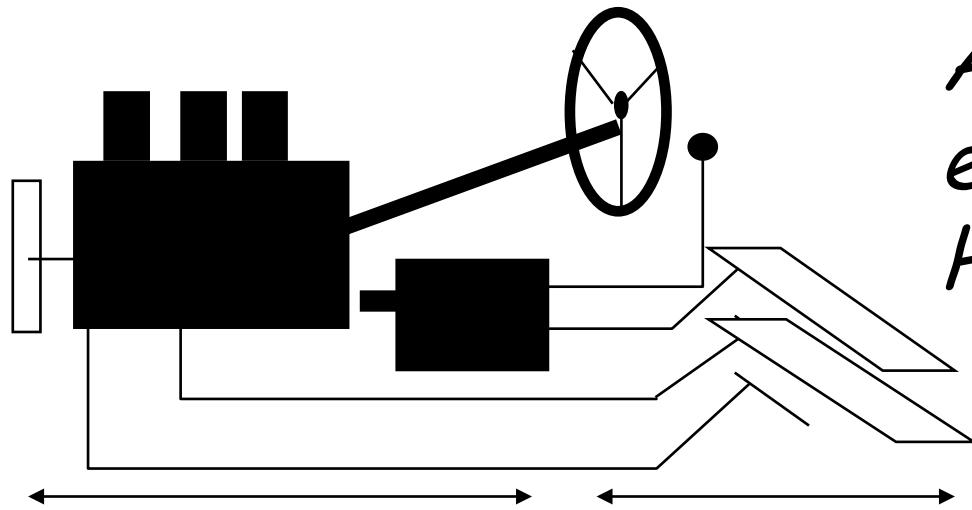
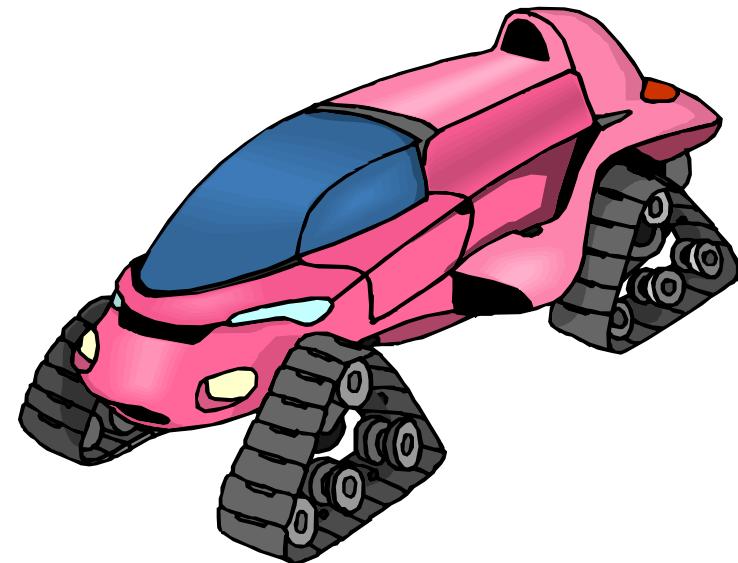
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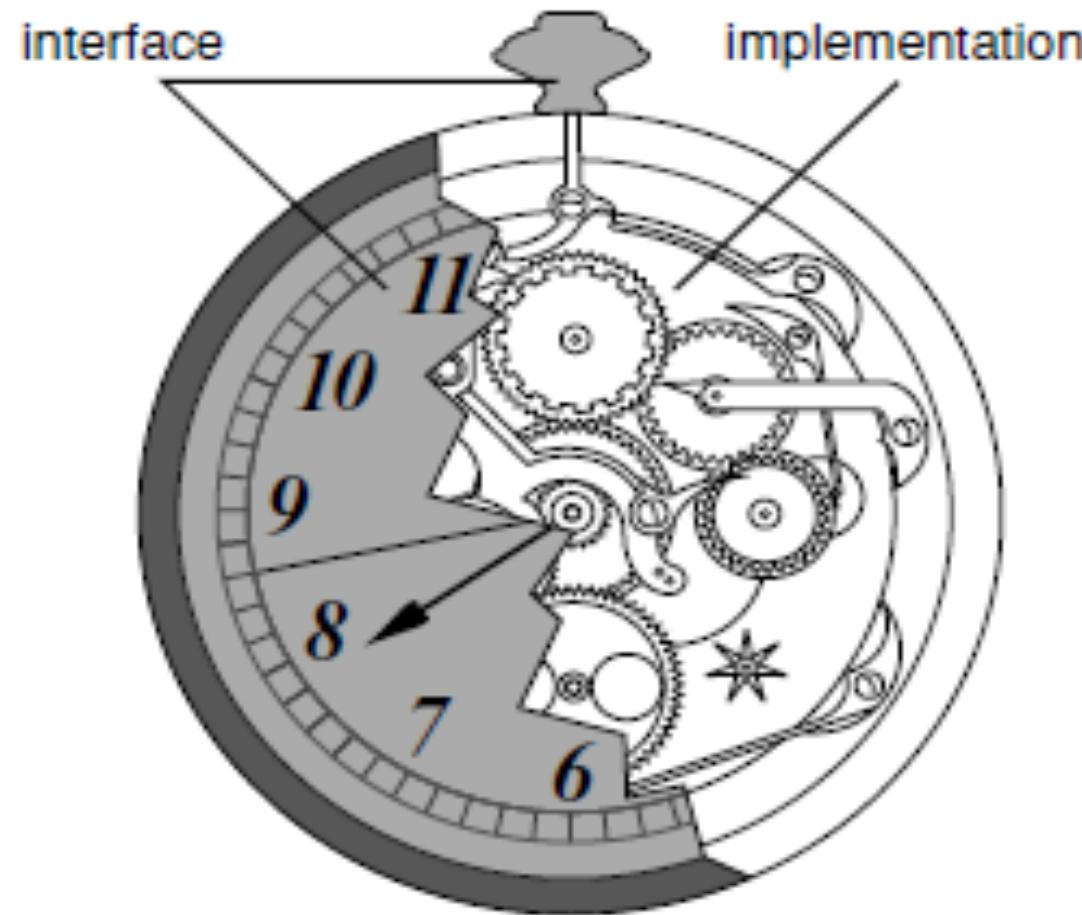
# Design By and For Interfaces



*Implementation      Interface*

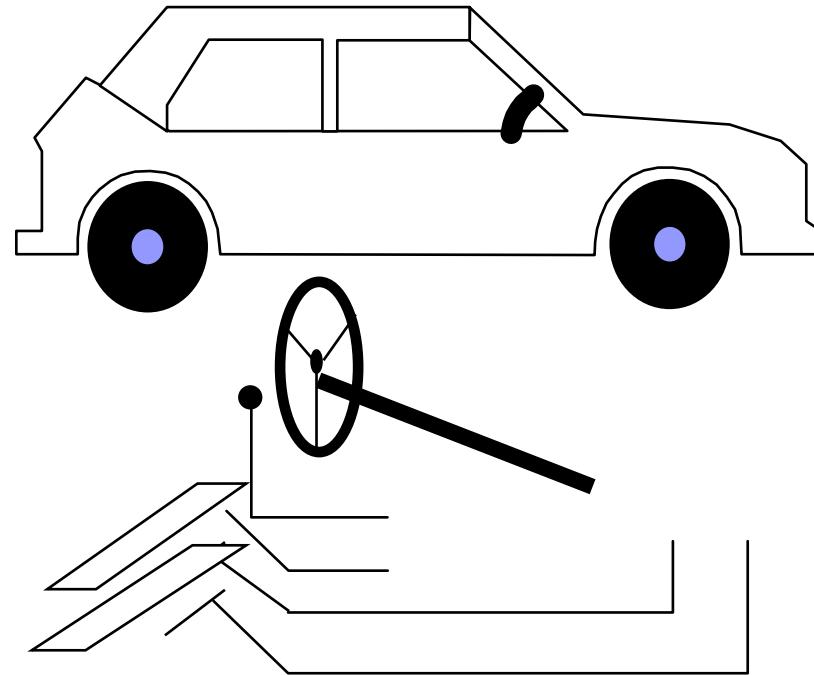
*A driver doesn't care of  
engine's internal working.  
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# Interface and implementation



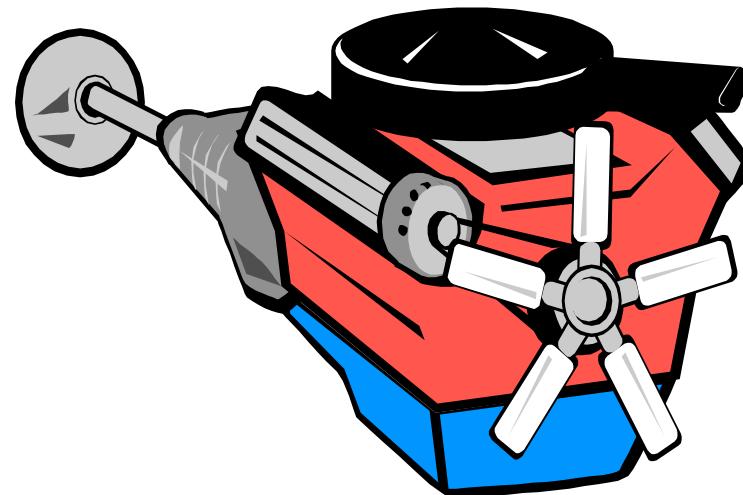
Source : **OBJECT-ORIENTED PROGRAMMING AND THE OBJECTIVE-C LANGUAGE  
NeXT DEVELOPER'S LIBRARY**

# Interface Versus Implementation

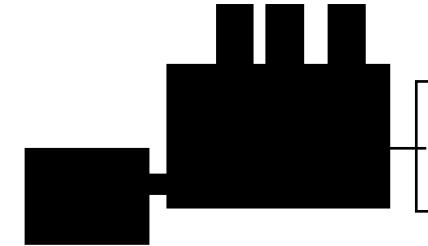


Interface  
(specification)

```
Struct {  
    Int field1  
    double field2  
    abc field3  
    xxx field4  
}
```



Implementation  
(body)



```
00101010001101001  
00101111010101010  
01001010010101010  
01001110110010101  
01010001010111111  
00001001001001000
```

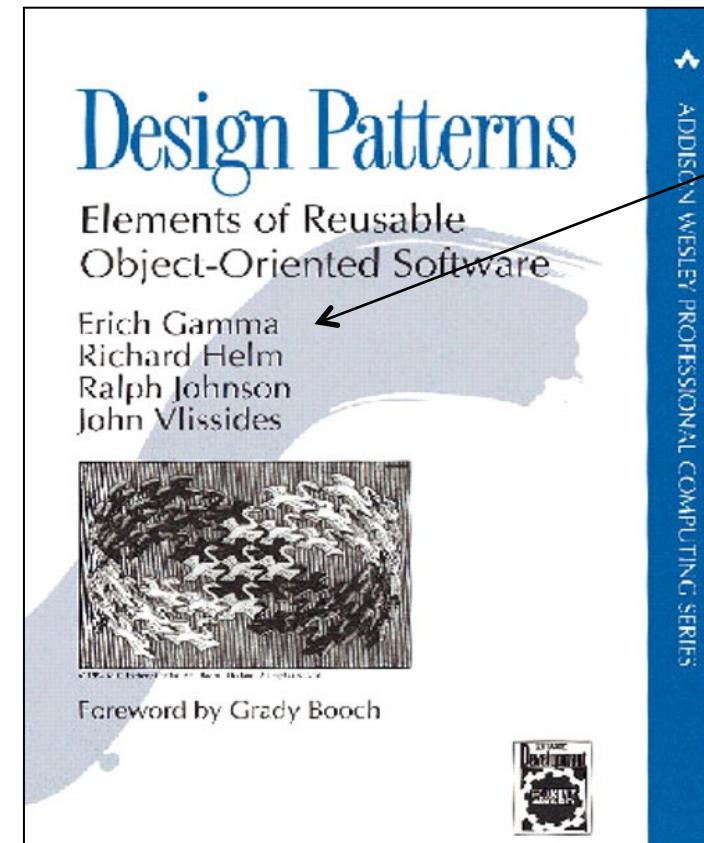
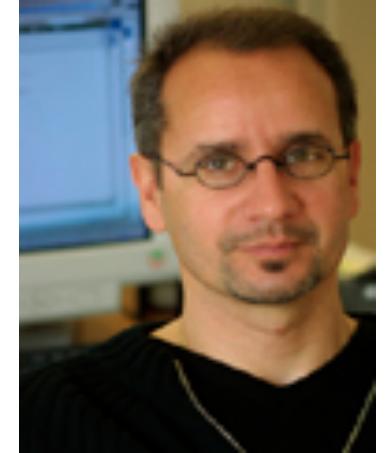


GOF



**“program to an interface, not an implementation”**

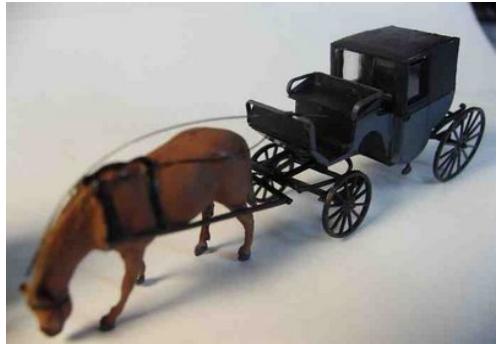
[http://en.wikipedia.org/wiki/Design\\_Patterns](http://en.wikipedia.org/wiki/Design_Patterns)



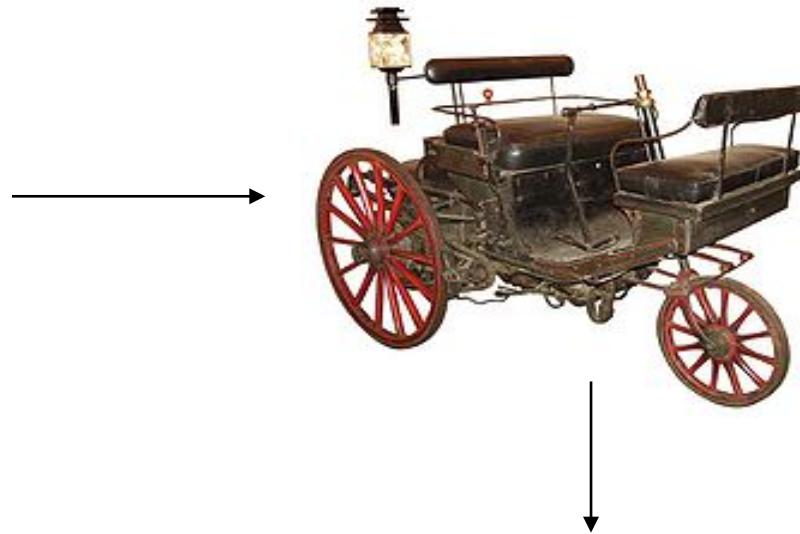
**Didel ASI**



# Interface & Encapsulation = New paradigm



**carriage**



**Shift**



**Domain Maturity**



**Carroserie Hypomobile**

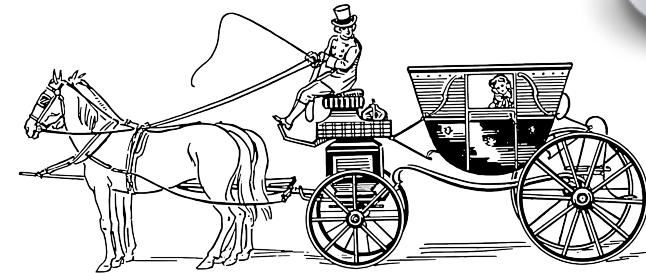


# New paradigm stems from existing



- Starts from the low level

- Carriage



- Starts with what we know so far



- Modeling what we have today helps emergence of new concepts.



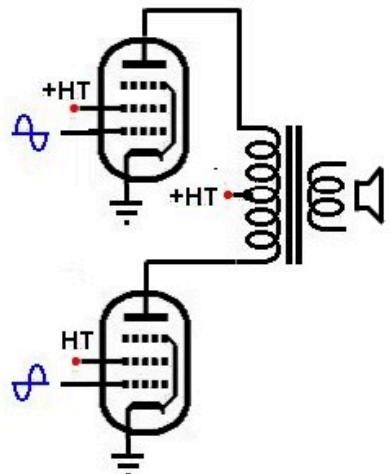
# Back to the past !!!



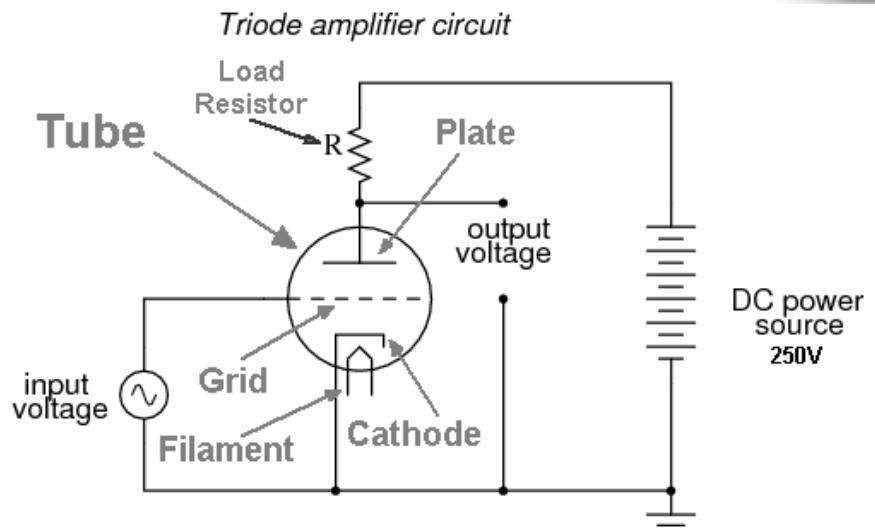
# Back to the past !!!



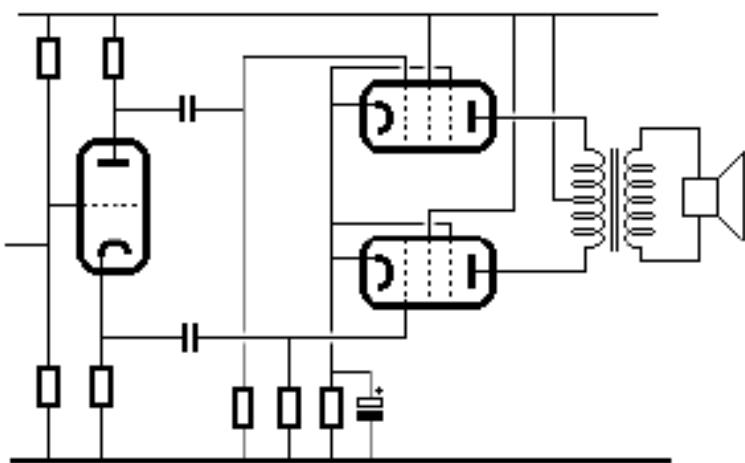
# From Vacuum Tub to Transistor (solid state)



Simplified Push-Pull tube amp



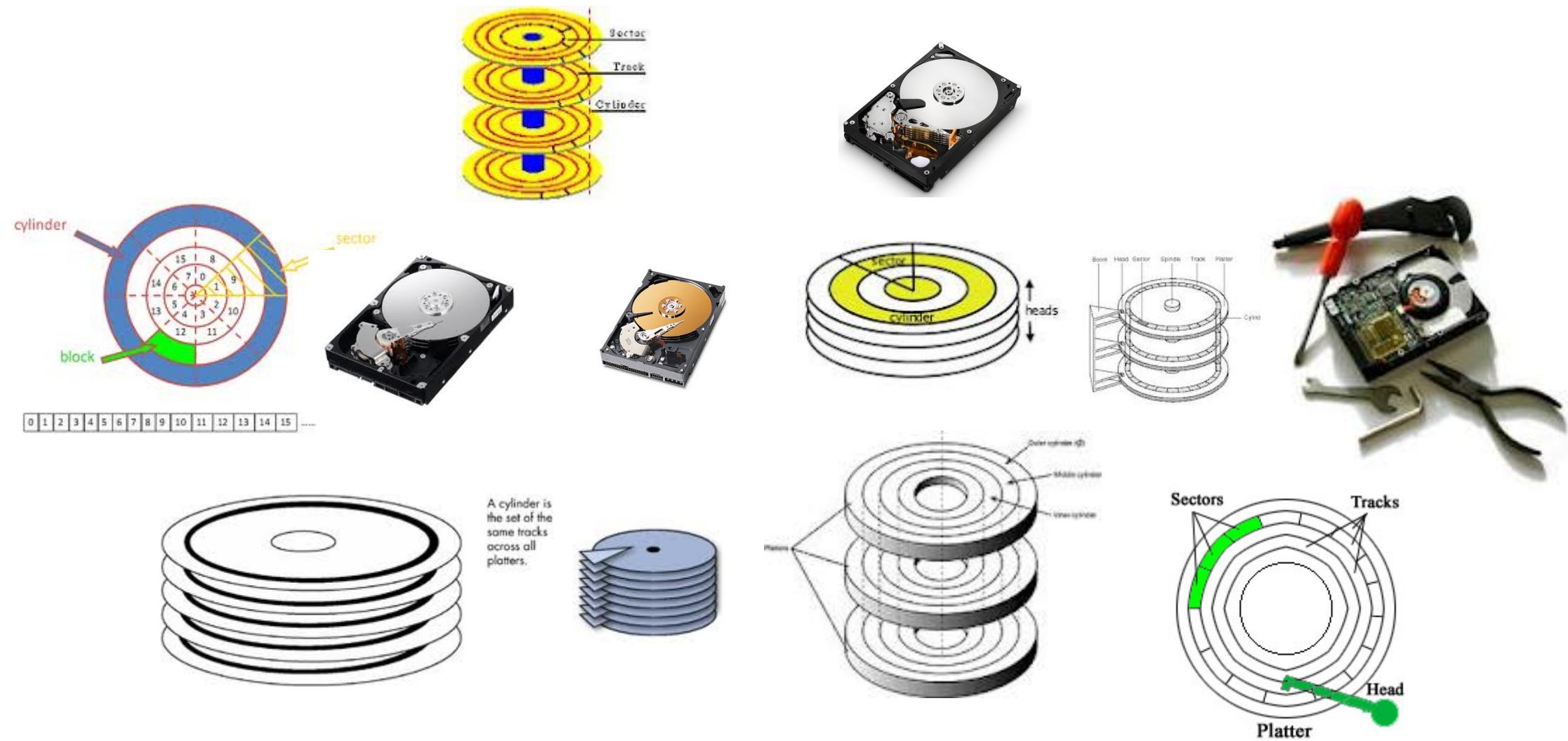
<http://surfybear.weebly.com/the-amp.html>



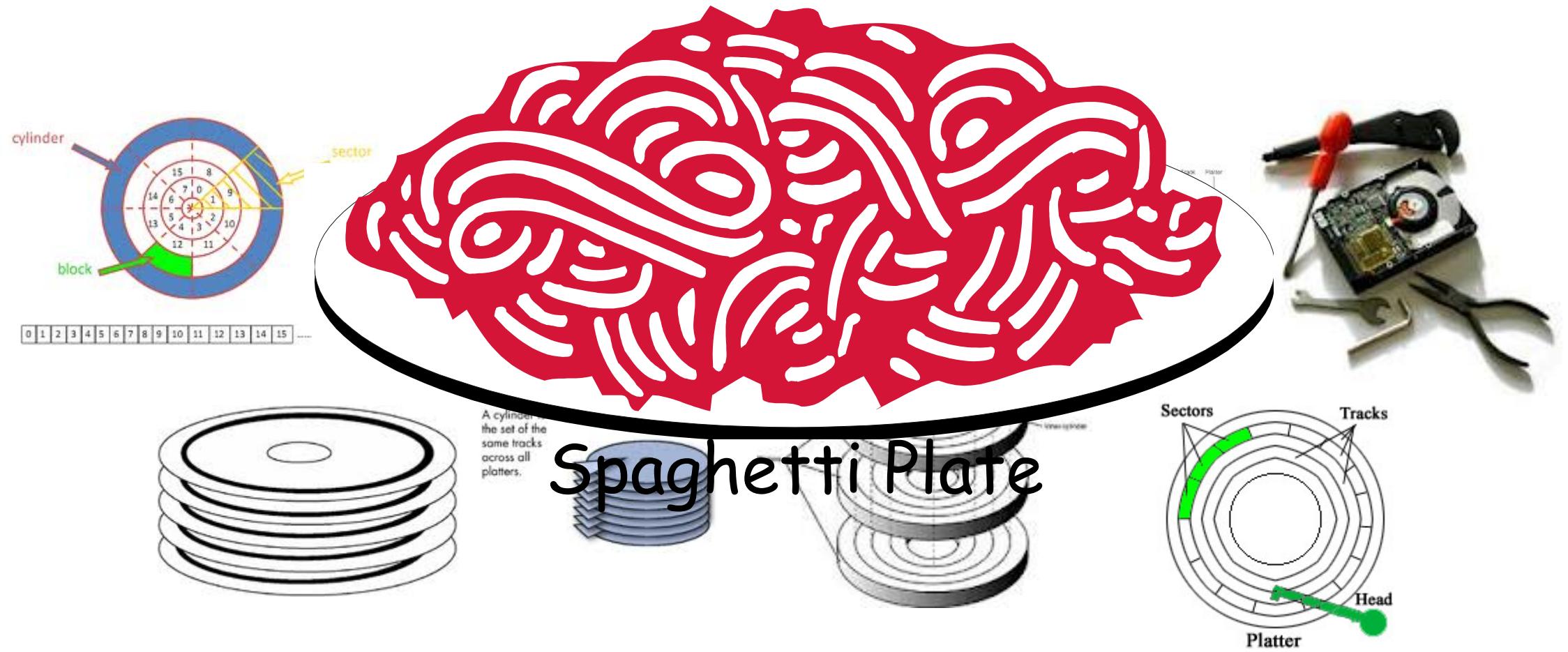
[http://www.co-bw.com/Audio\\_Vacuum\\_Tube\\_Amp.htm](http://www.co-bw.com/Audio_Vacuum_Tube_Amp.htm)



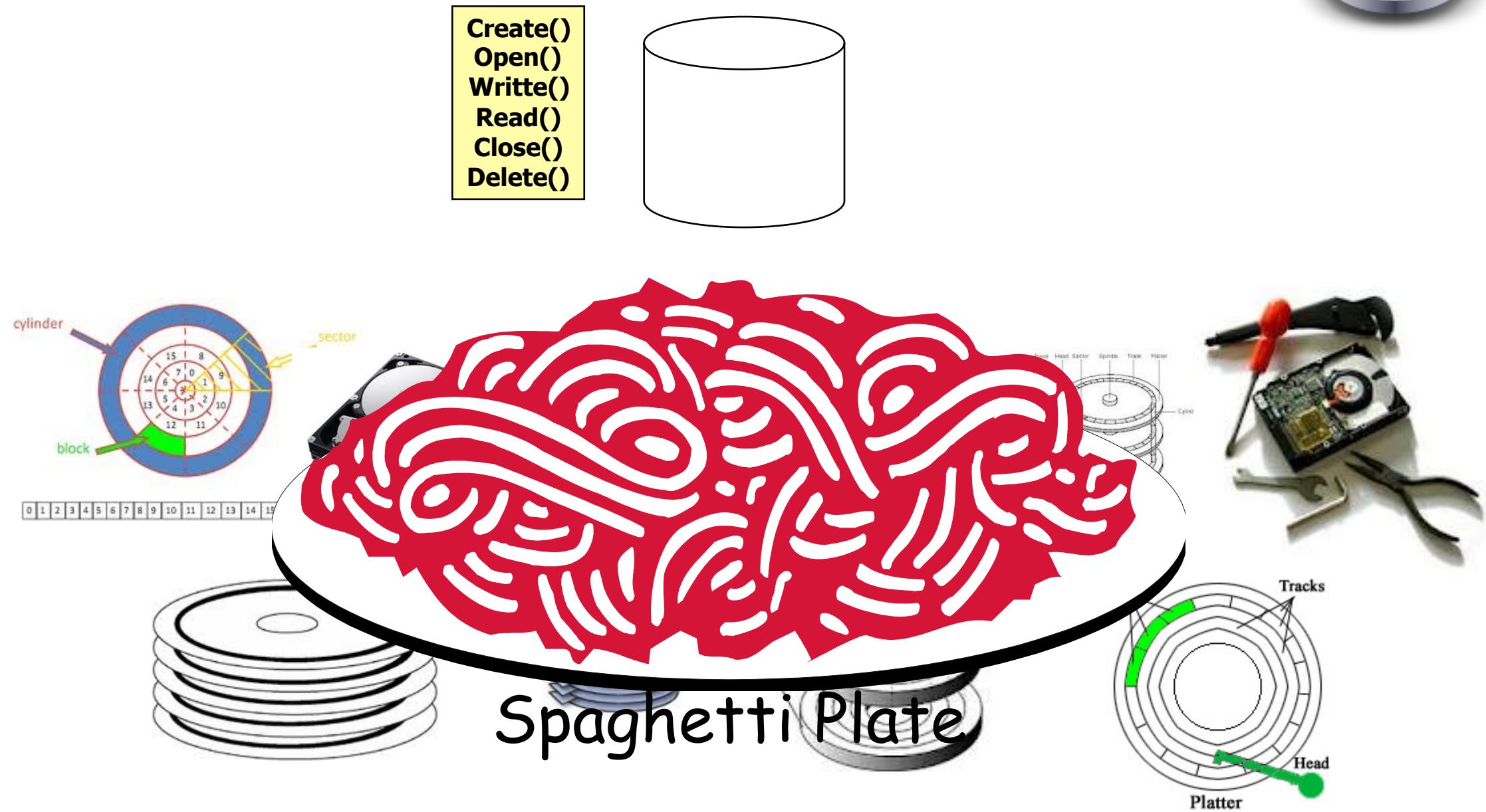
# Disk physical structure



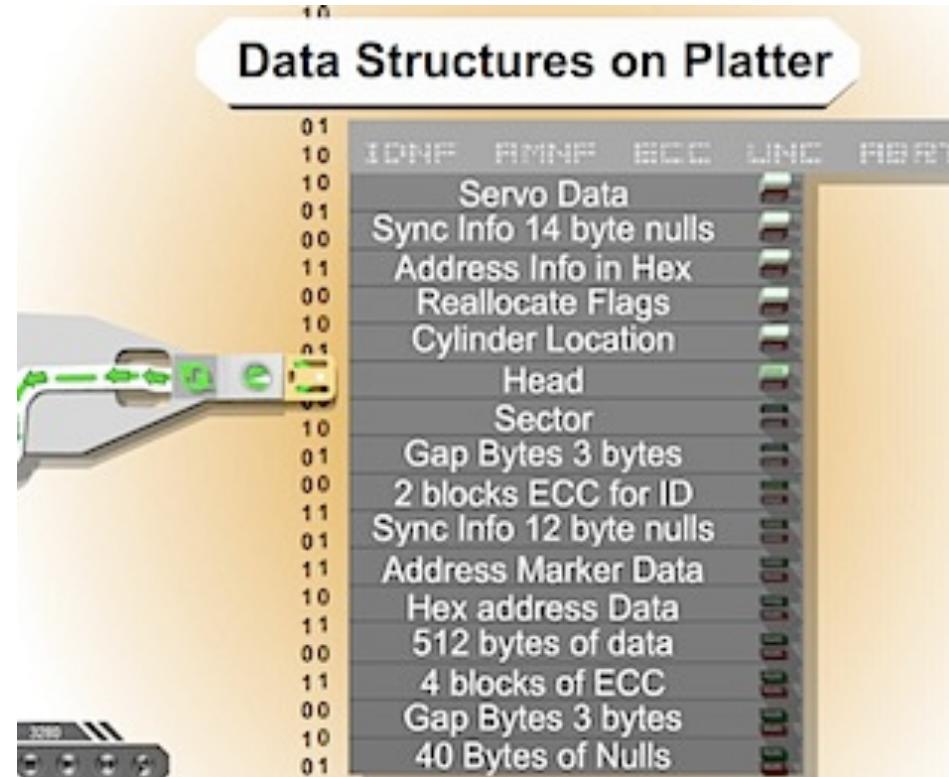
# Spaghetti Plate



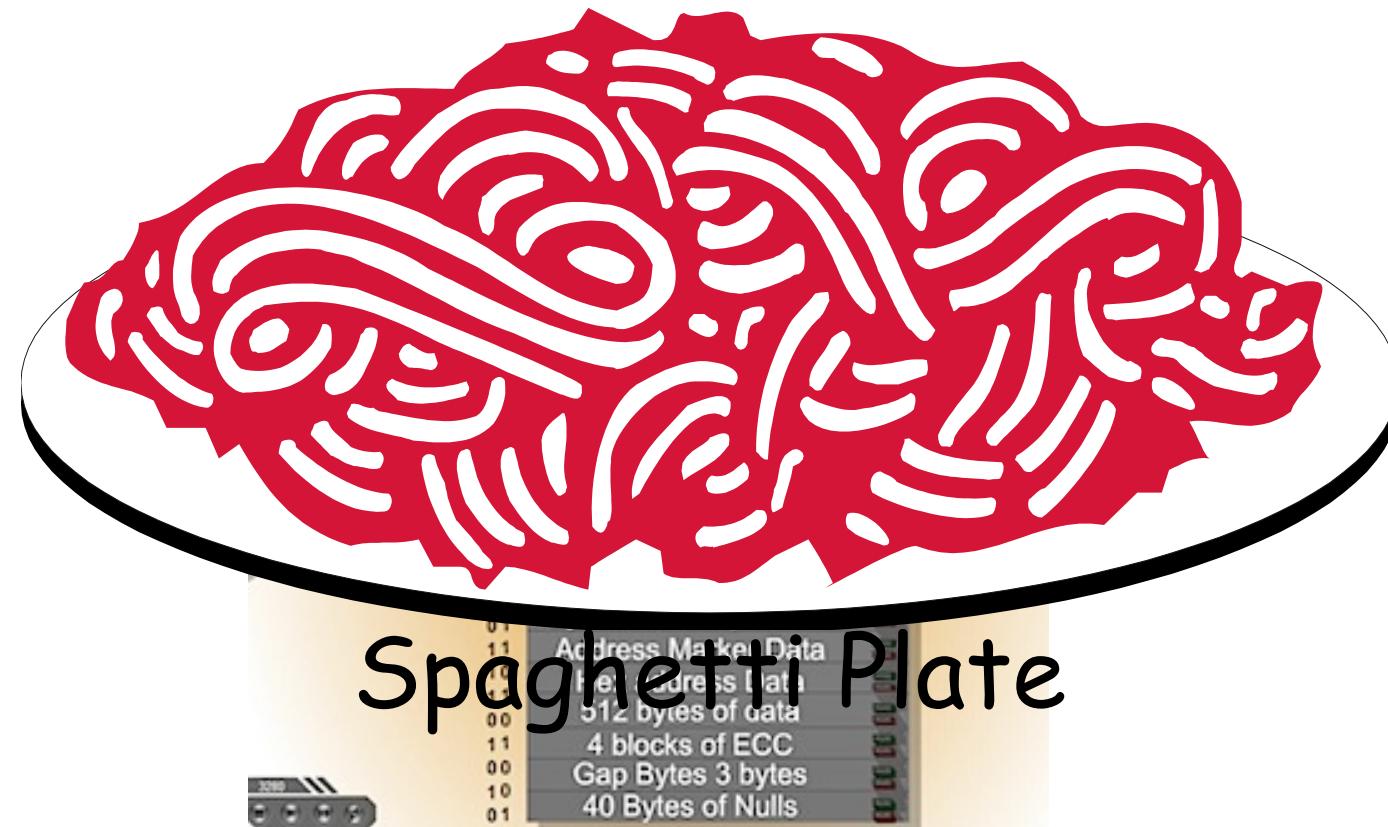
# Abstraction Model



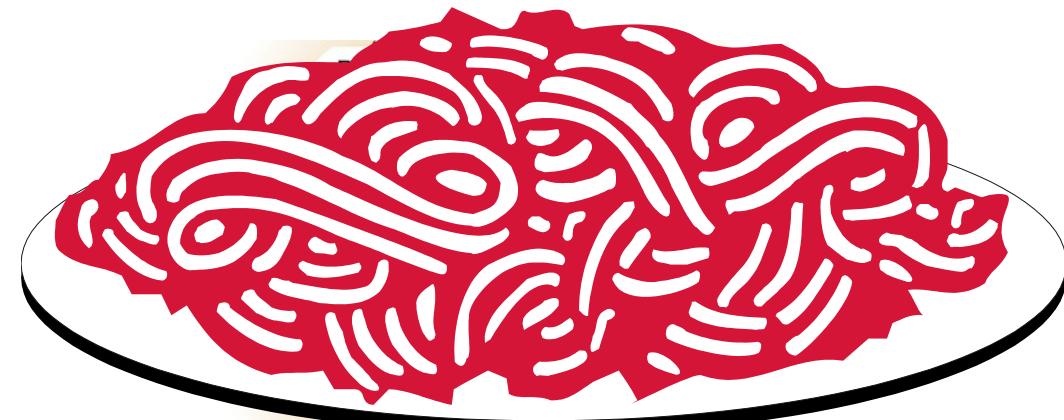
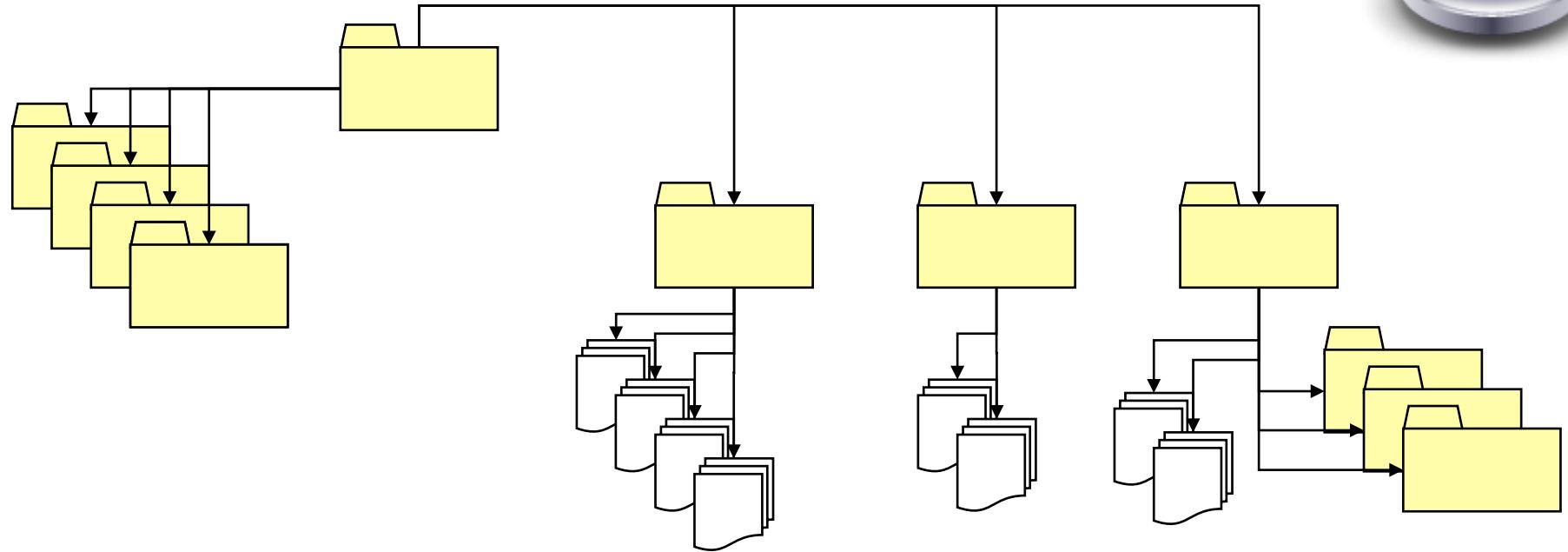
# Disk content



# Spaghetti Plate



# Abstraction Model



Spaghetti Plate

# File Format



Absolute Sector 0 (Cylinder 0, Head 0, Sector 1)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0000	33	C0	8E	DO	BC	00	7C	FB	50	07	50	1F	FC	BE	1B	7C	3..... .P.P....
0010	BF	1B	06	50	57	B9	E5	01	F3	A4	CB	BE	BE	07	B1	04	...PW.....
0020	38	2C	7C	09	75	15	83	C6	10	E2	F5	CD	18	8B	14	8B	8, .u.....
0030	EE	83	C6	10	49	74	16	38	2C	74	F6	BE	10	07	4E	AC	....It.8,t....N.
0040	3C	00	74	FA	BB	07	00	B4	0E	CD	10	EB	F2	89	46	25	<.t.....F%
0050	96	8A	46	04	B4	06	3C	0E	74	11	B4	0B	3C	0C	74	05	..F...<.t...<.t.
0060	3A	C4	75	2B	40	C6	46	25	06	75	24	BB	AA	55	50	B4	.u+@.F%.u\$..UP.
0070	41	CD	13	58	72	16	81	FB	55	AA	75	10	F6	C1	01	74	A..Xr...U.u....t
0080	0B	8A	E0	88	56	24	C7	06	A1	06	EB	1E	88	66	04	BF	....V\$.....f..
0090	0A	00	B8	01	02	8B	DC	33	C9	83	FF	05	7F	03	8B	4E	.....3.....N
00A0	25	03	4E	02	CD	13	72	29	BE	46	07	81	3E	FE	7D	55	%N...r).F..>.)U
00B0	AA	74	5A	83	EF	05	7F	DA	85	F6	75	83	BE	27	07	EB	.tZ.....u..!..
00C0	8A	98	91	52	99	03	46	08	13	56	0A	E8	12	00	5A	EB	...R..F..V....Z.
00D0	D5	4F	74	E4	33	C0	CD	13	EB	B8	00	00	00	00	00	00	.Ot.3.....
00E0	56	33	F6	56	56	52	50	06	53	51	BE	10	00	56	8B	F4	V3.VVRP.SQ...V..
00F0	50	52	B8	00	42	8A	56	24	CD	13	5A	58	8D	64	10	72	PR..B.V\$..ZX.d.r
0100	0A	40	75	01	42	80	C7	02	E2	F7	F8	5E	C3	EB	74	49	.@u.B.....^..tI
0110	6E	76	61	6C	69	64	20	70	61	72	74	69	74	69	6F	6E	nvalid partition

# File Format

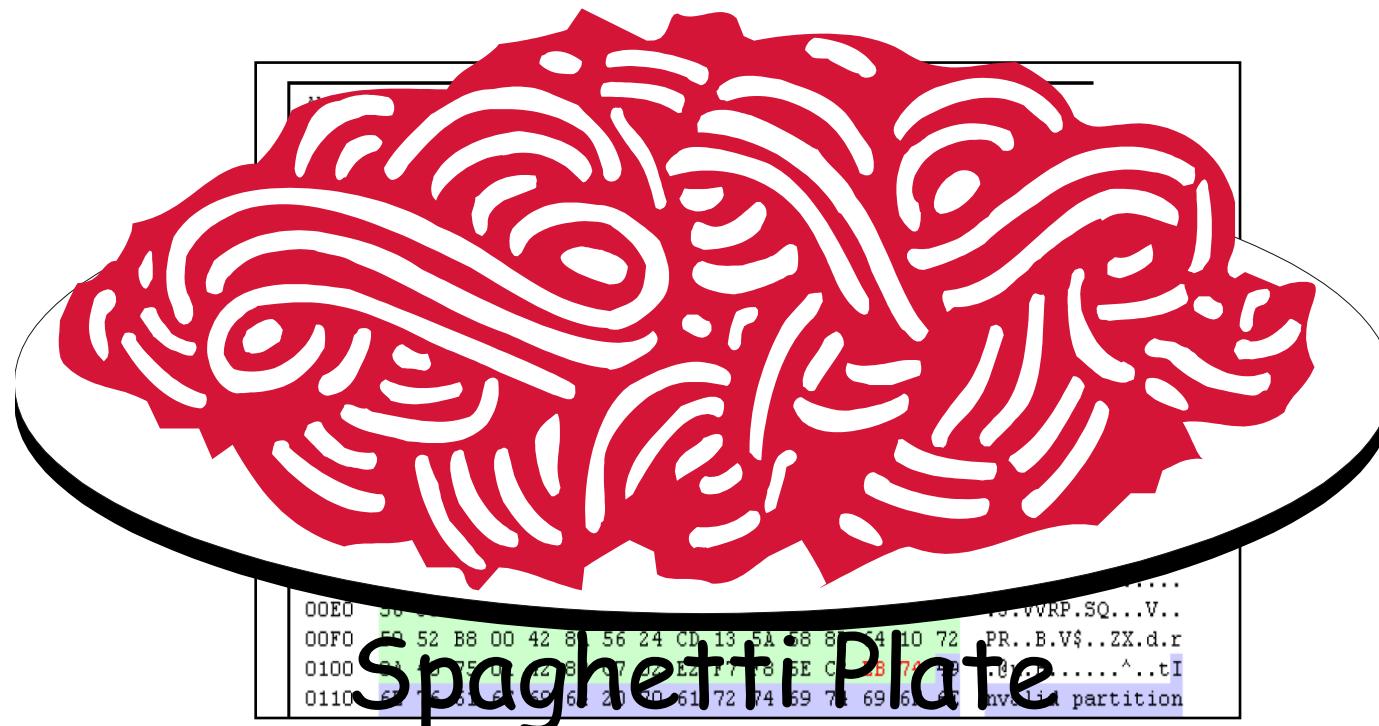


Absolute Sector 0 (Cylinder 0, Head 0, Sector 1)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0000	33	CO	8E	DO	BC	00	7C	FB	50	07	50	1F	FC	BE	1B	7C
0010	BF	1B	06	50	57	B9	E5	01	E	44	7	BE	BE	07	B1	04
0020	38	2C	7C	09	75	15	83	00	00	00	00	00	00	00	00	0B
0030	EE	83	C6	10	00	00	00	00	00	00	00	00	00	00	00	00
0040	3C	00	74	00	00	00	00	00	00	00	00	00	00	00	00	00
0050	96	8A	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0060	3A	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0070	4	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0080	0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0090	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00A0	25	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00B0	AA	74	5A	00	00	00	00	00	00	00	00	00	00	00	00	00
00C0	8A	98	91	52	99	03	40	00	00	00	00	00	00	5A	EB	00
00D0	D5	4F	74	E4	33	C6	41	18	11	BE	00	00	00	00	00	00
00E0	56	33	F6	56	56	52	30	06	53	51	BE	10	00	56	8B	F4
00F0	50	52	B8	00	42	8A	56	24	CD	13	5A	58	8D	64	10	72
0100	0A	40	75	01	42	80	C7	02	E2	F7	F8	5E	C3	EB	74	49
0110	6E	76	61	6C	69	64	20	70	61	72	74	69	74	69	6F	6E

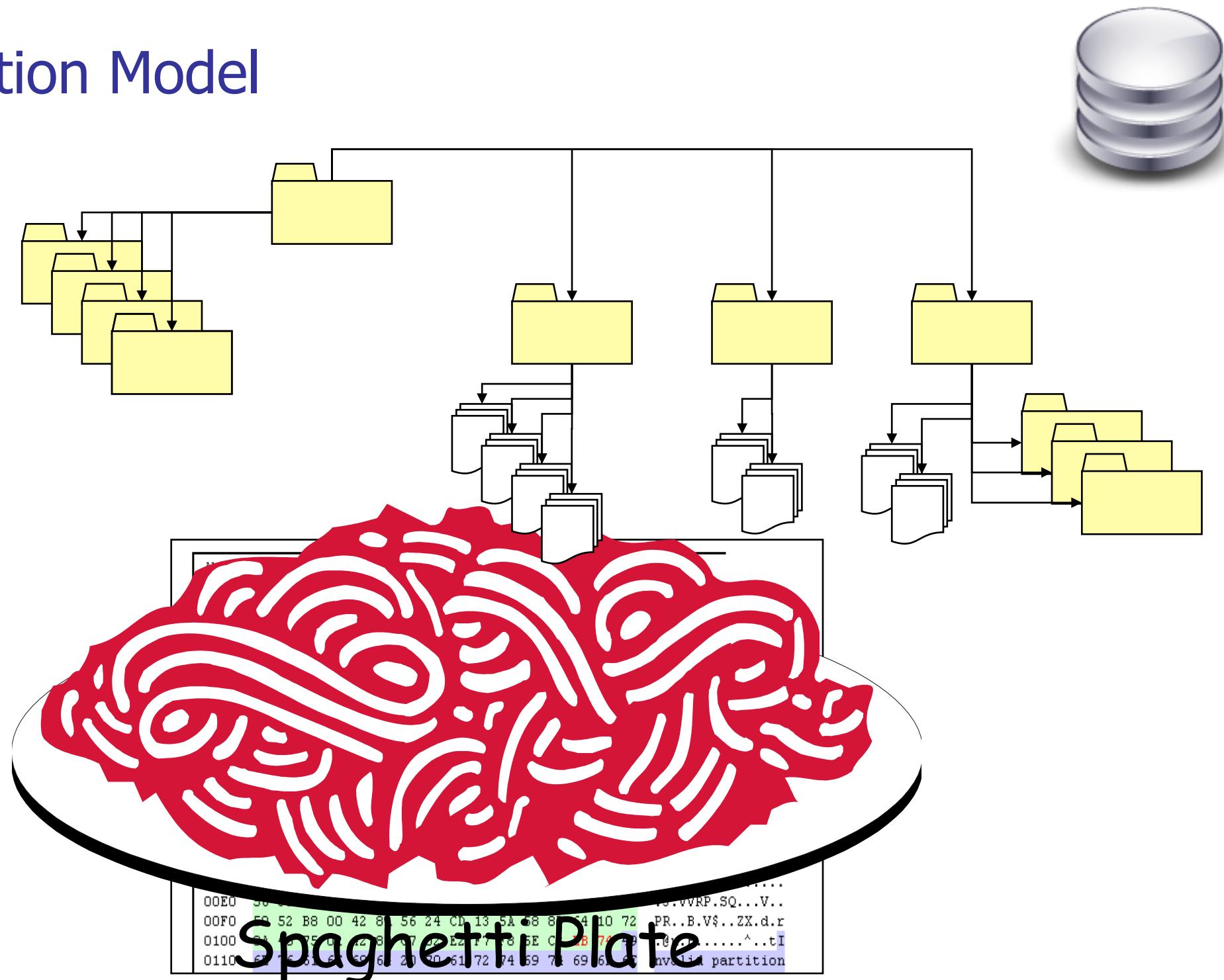
Spaghetti Plate

# File Format



Spaghetti Plate

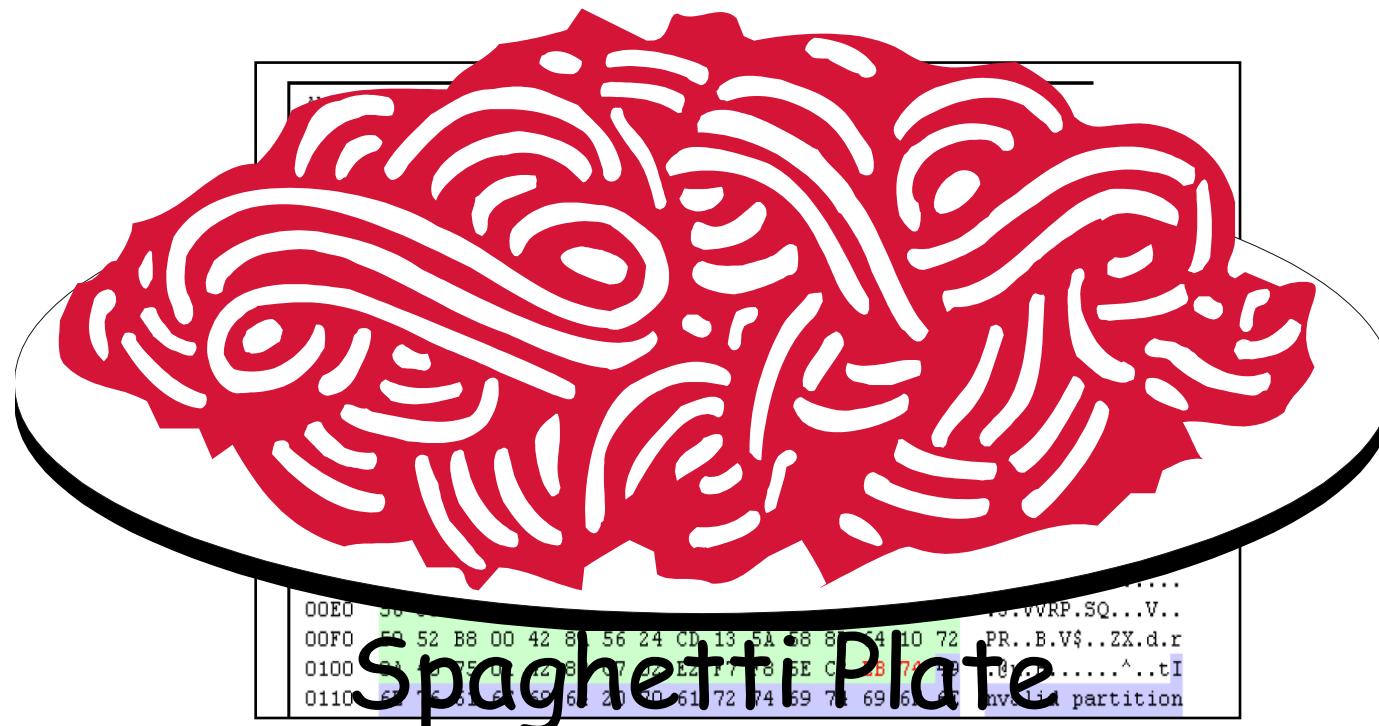
# Abstraction Model



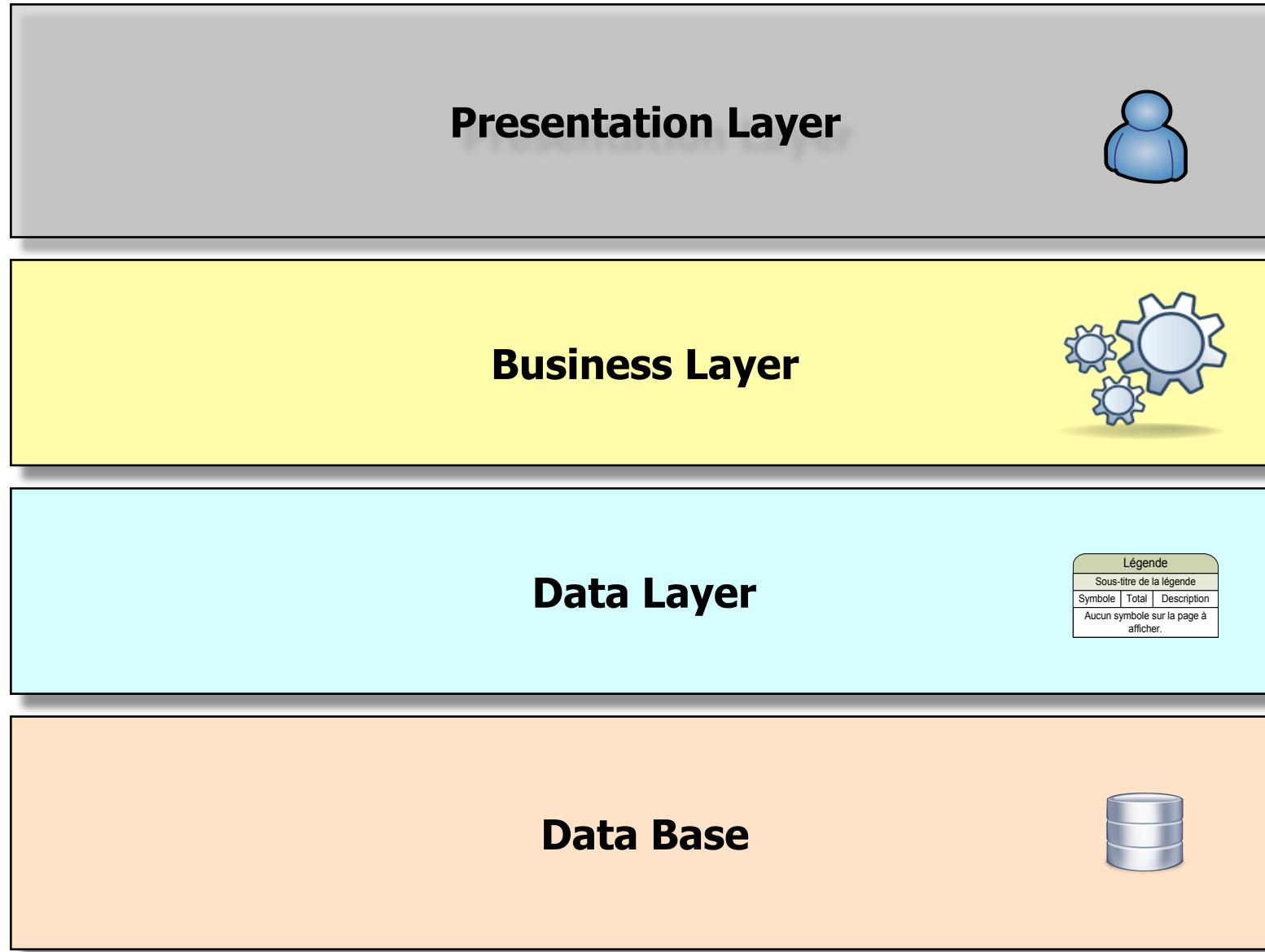
# Abstraction Model



# ASCII



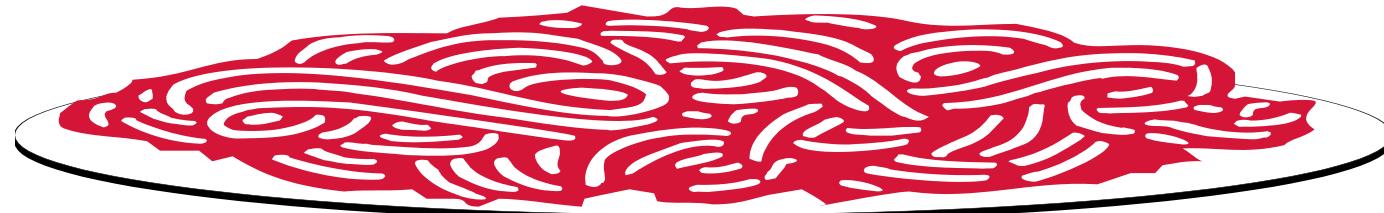
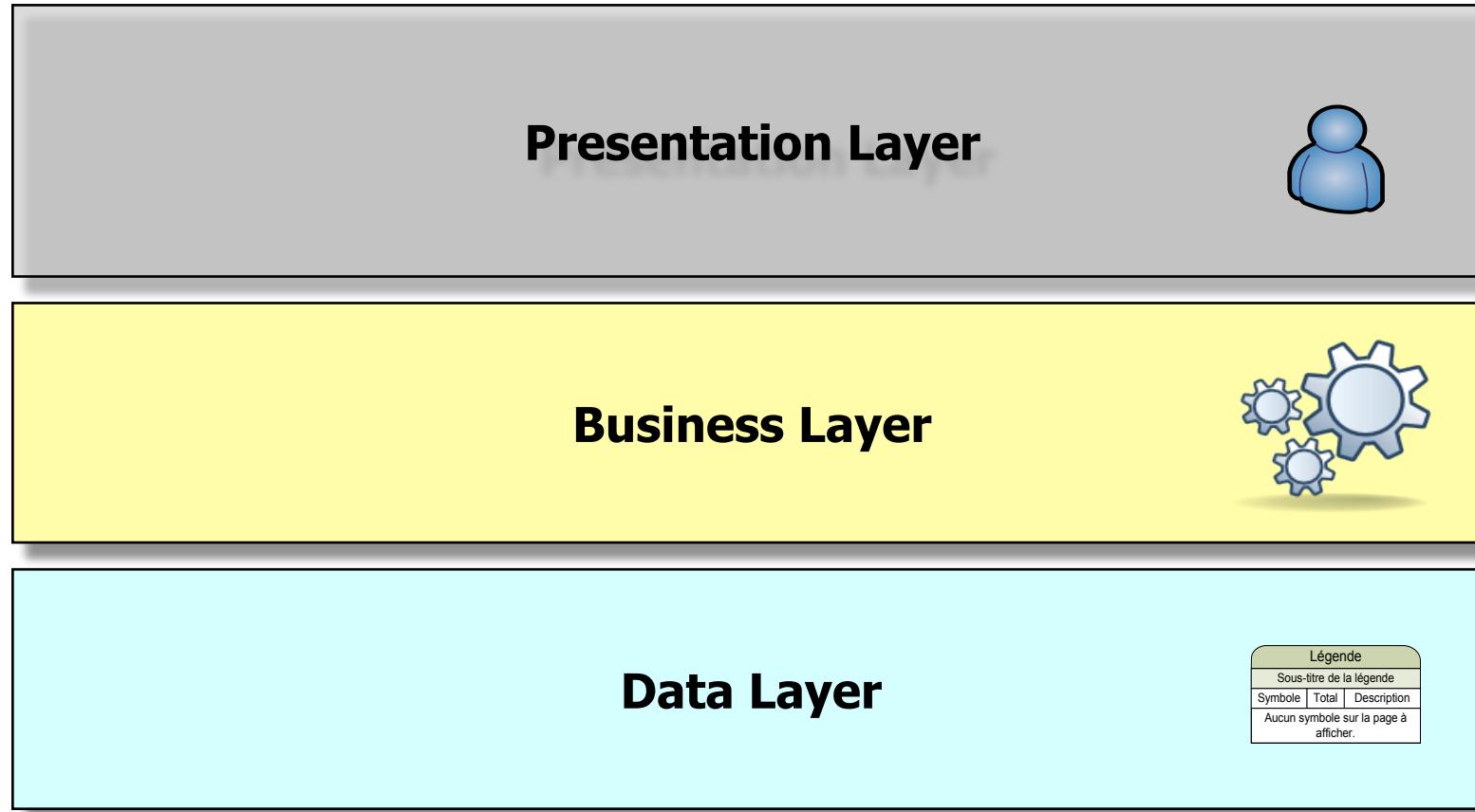
# Layered Architecture



# Layered Architecture

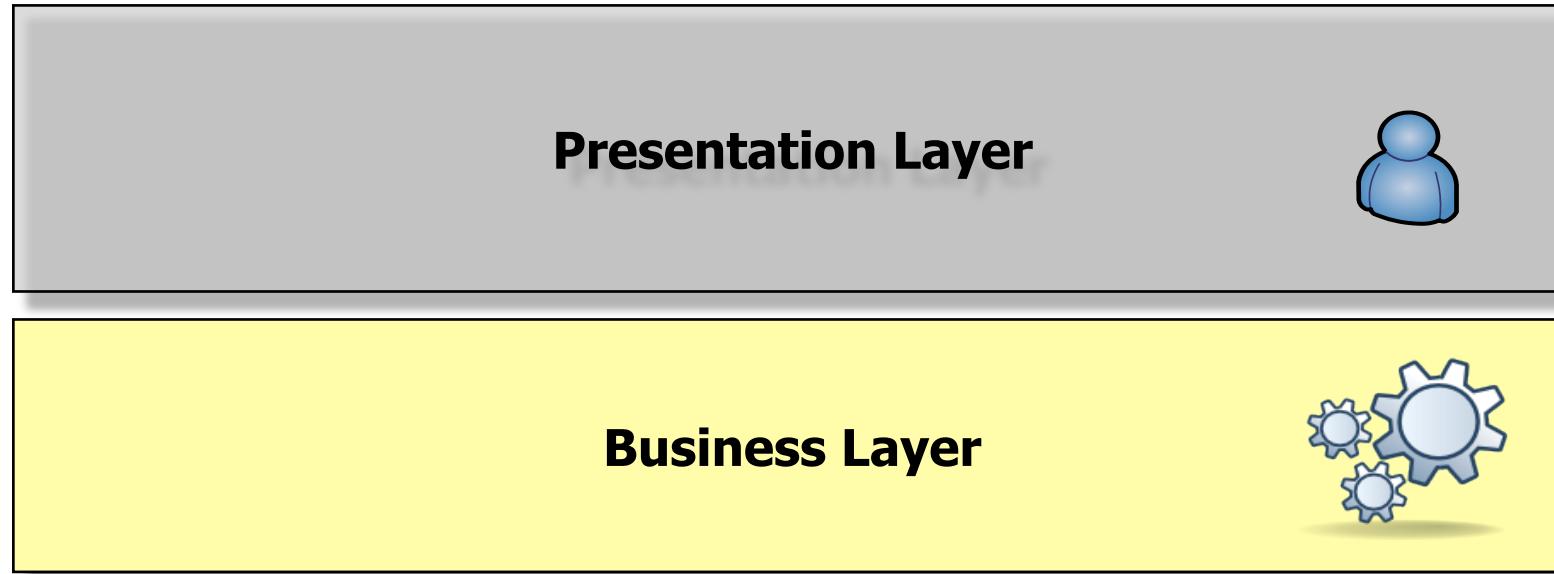


# Layered Architecture



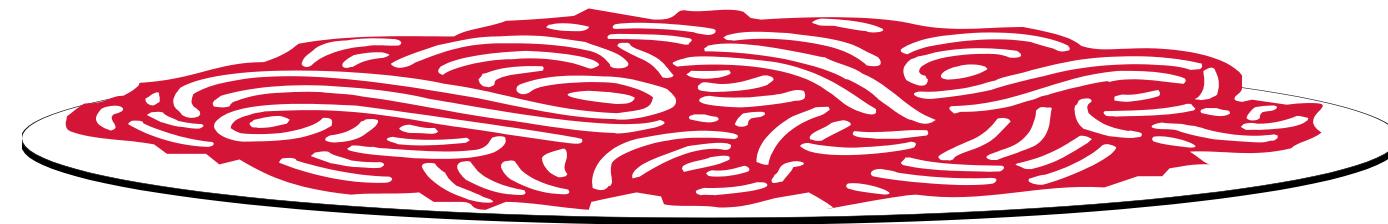
## Spaghetti Plate

# Layered Architecture



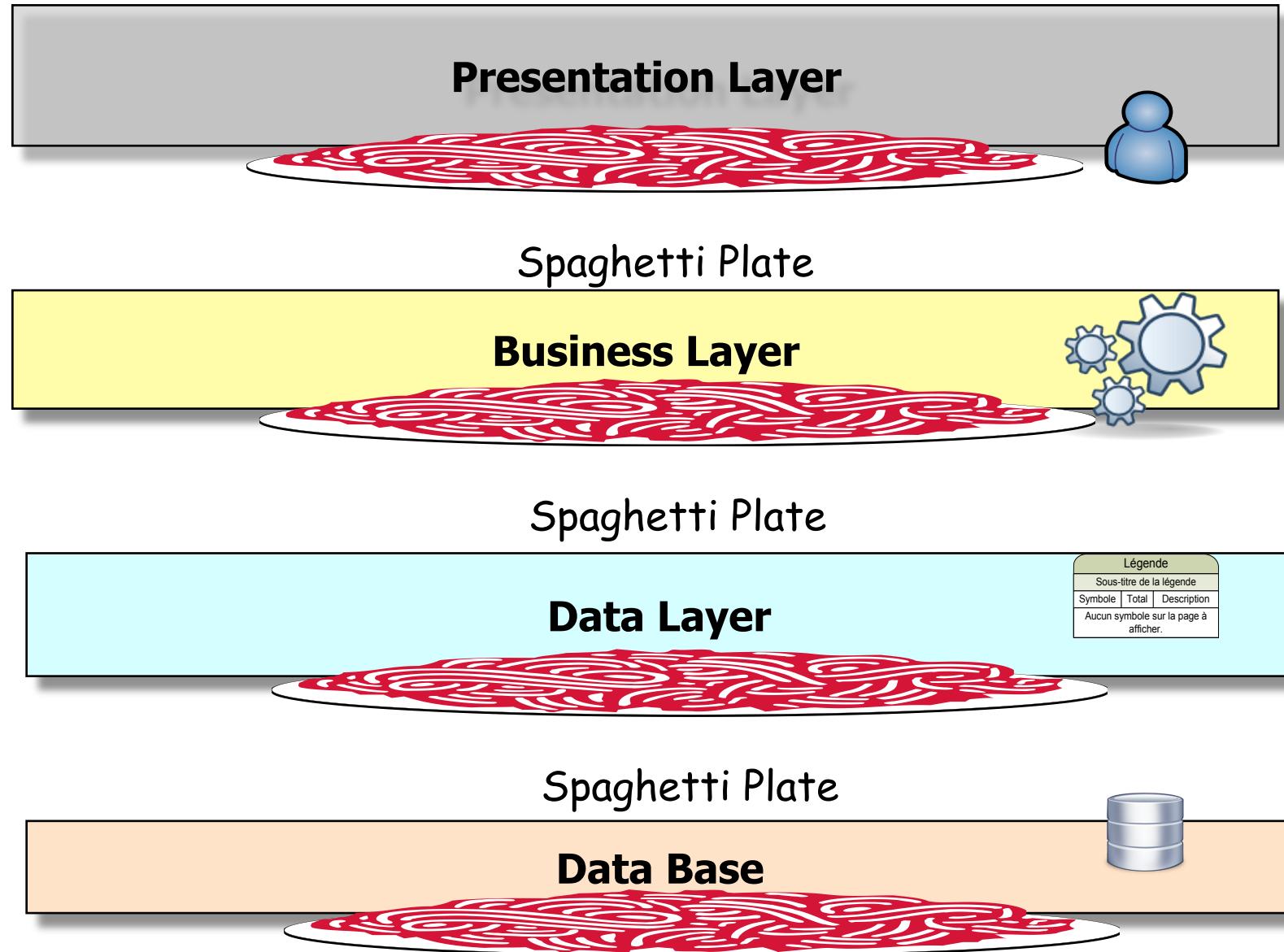
Spaghetti Plate

# Layered Architecture



Spaghetti Plate

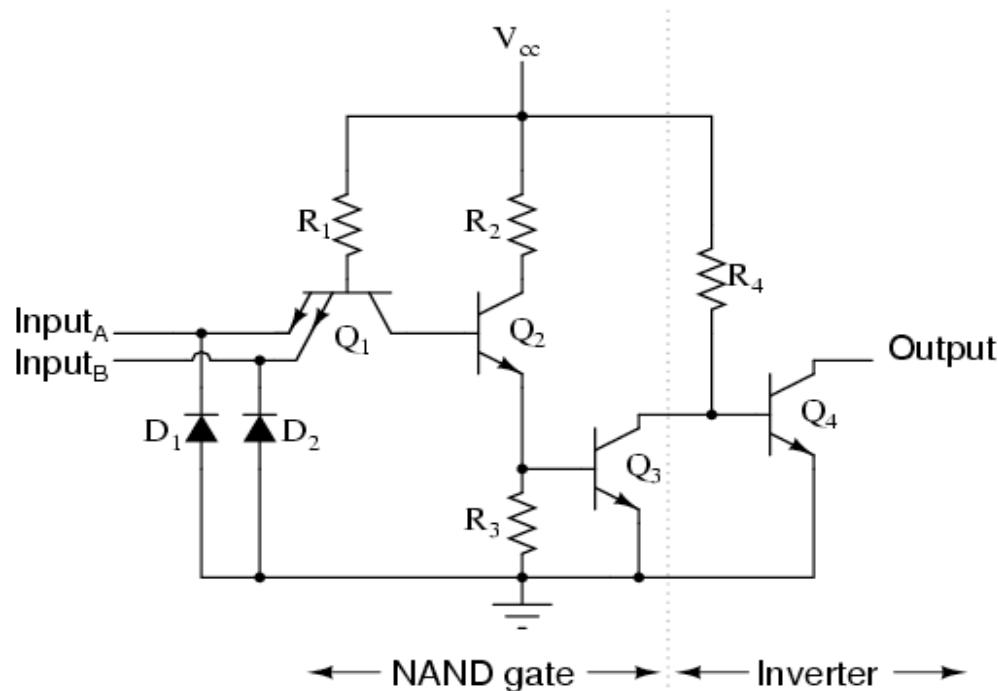
# Layered Architecture



# Analogie circuit électronique



*AND gate with open-collector output*



*AND gate*

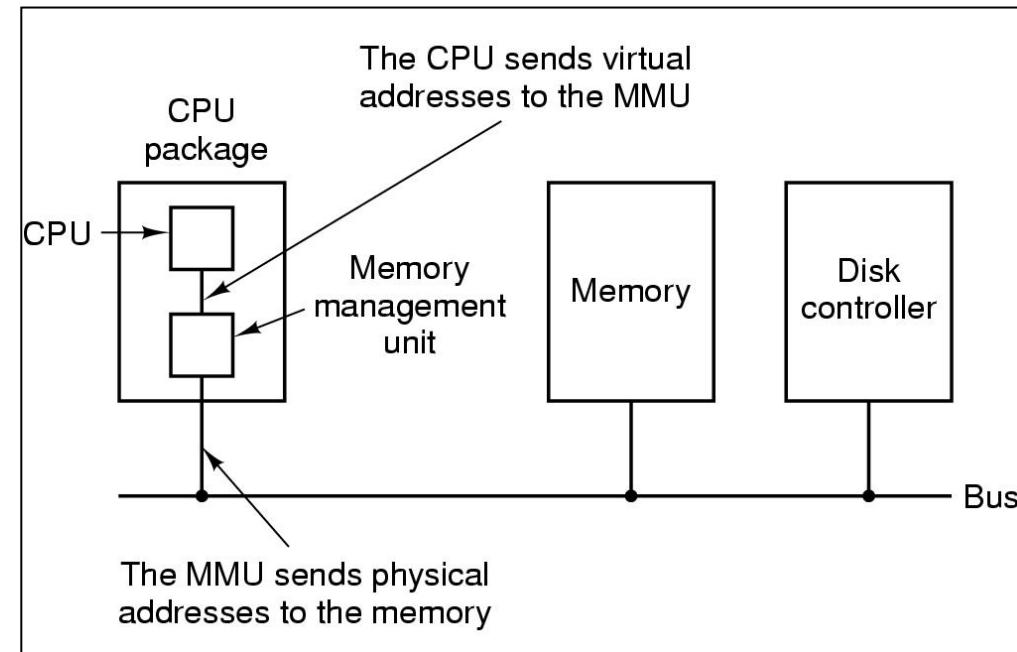
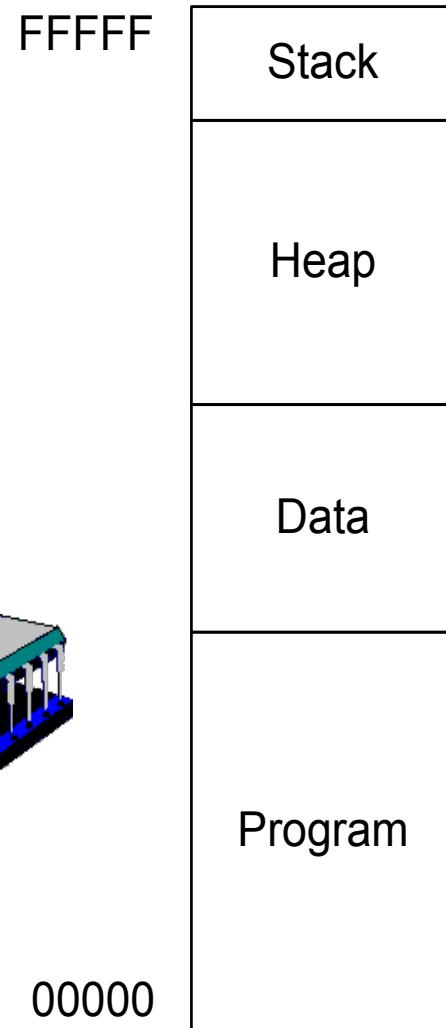
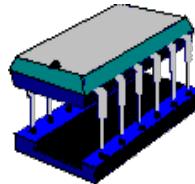


A	B	Output
0	0	0
0	1	0
1	0	0
1	1	1

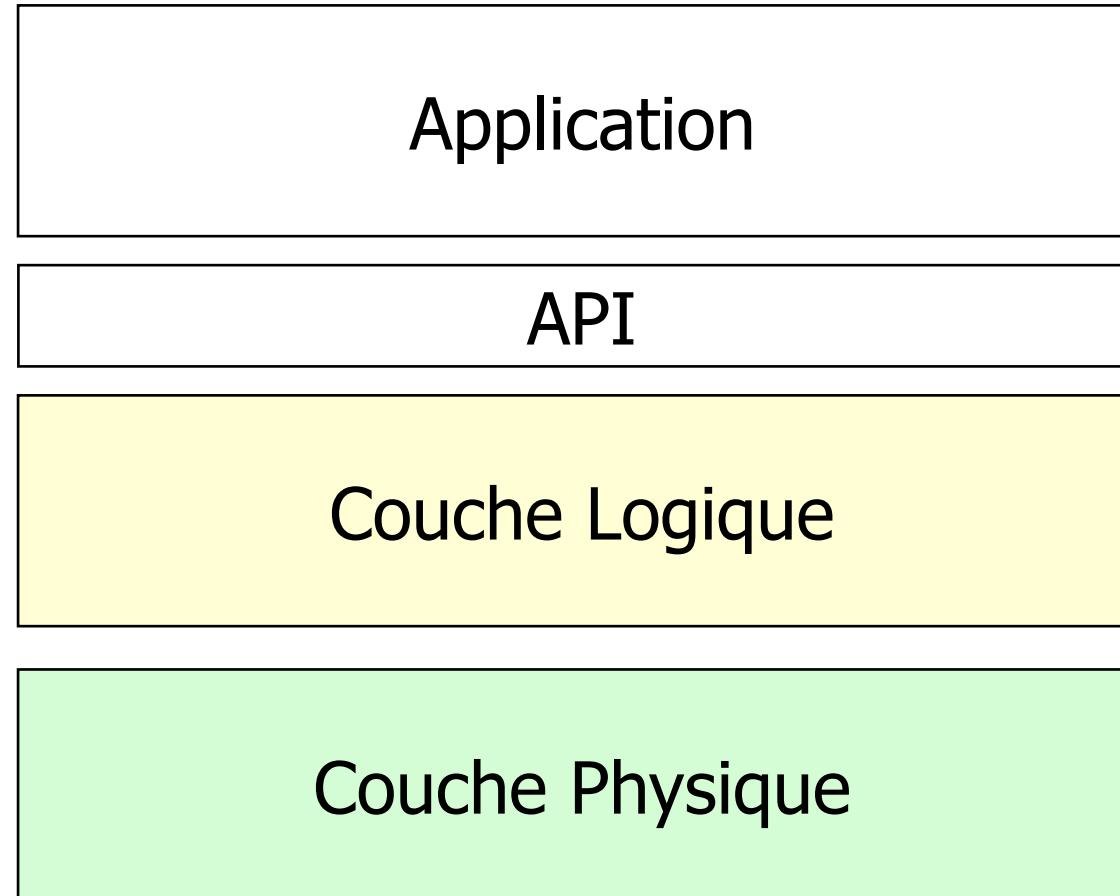
*Equivalent circuit*

[http://www.allaboutcircuits.com/vol\\_4/chpt\\_3/5.html](http://www.allaboutcircuits.com/vol_4/chpt_3/5.html)

# Process and Virtual Memory

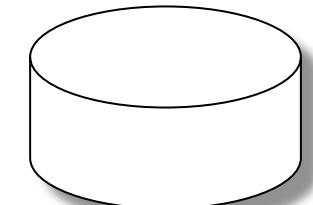


# Abstraction en couches (vues)



**SQL**

Marque	Modèle	Couleur	Série	Compteur	millésime	Vendeurs
Renault	18	Bleue	RL	123450	2002	Blanc
Renault	Kangoo	Vert	RL	56000	1999	Boucher
Renault	Kangoo	Noir	RL	12000	1987	Fayard
Peugeot	106	Grise	KID	75600	2006	Gentil
Peugeot	309	Jaune	chorus	189500	2007	Germain
Ford	Escort	Blanche	Match	225000	2002	Girard
Fiat	Punto	Noir	GTI	12125	1995	Grosjean
Audi	A4	Blanche	Quattro	21350	1998	Legoff
Peugeot	407	Grise	club	75600	2006	Renard



API : Application Programming Interface

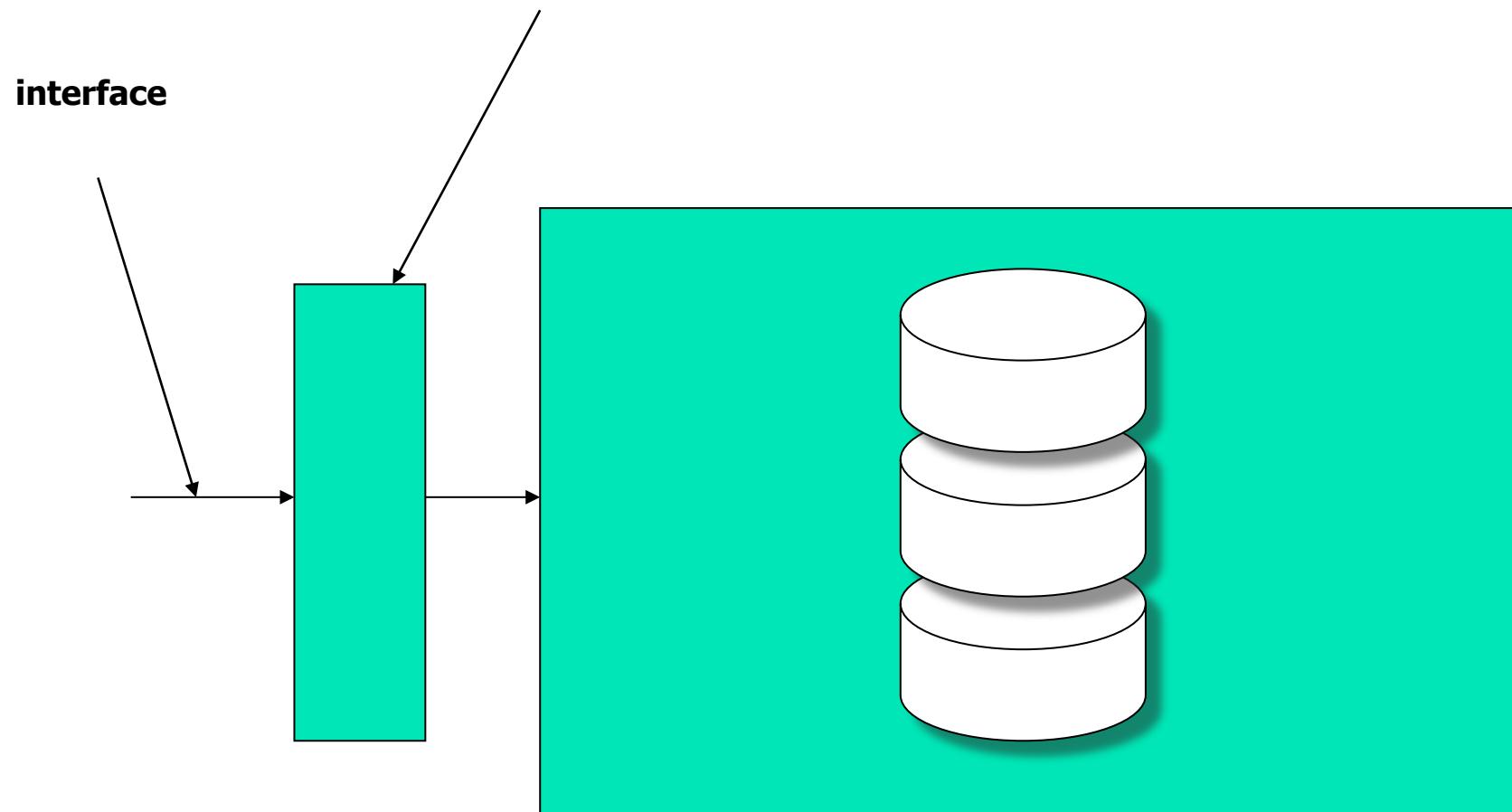


Traduction en cours

# Encapsulation



Modèle = vue simplifiée



Traduction en cours

# Encapsulation

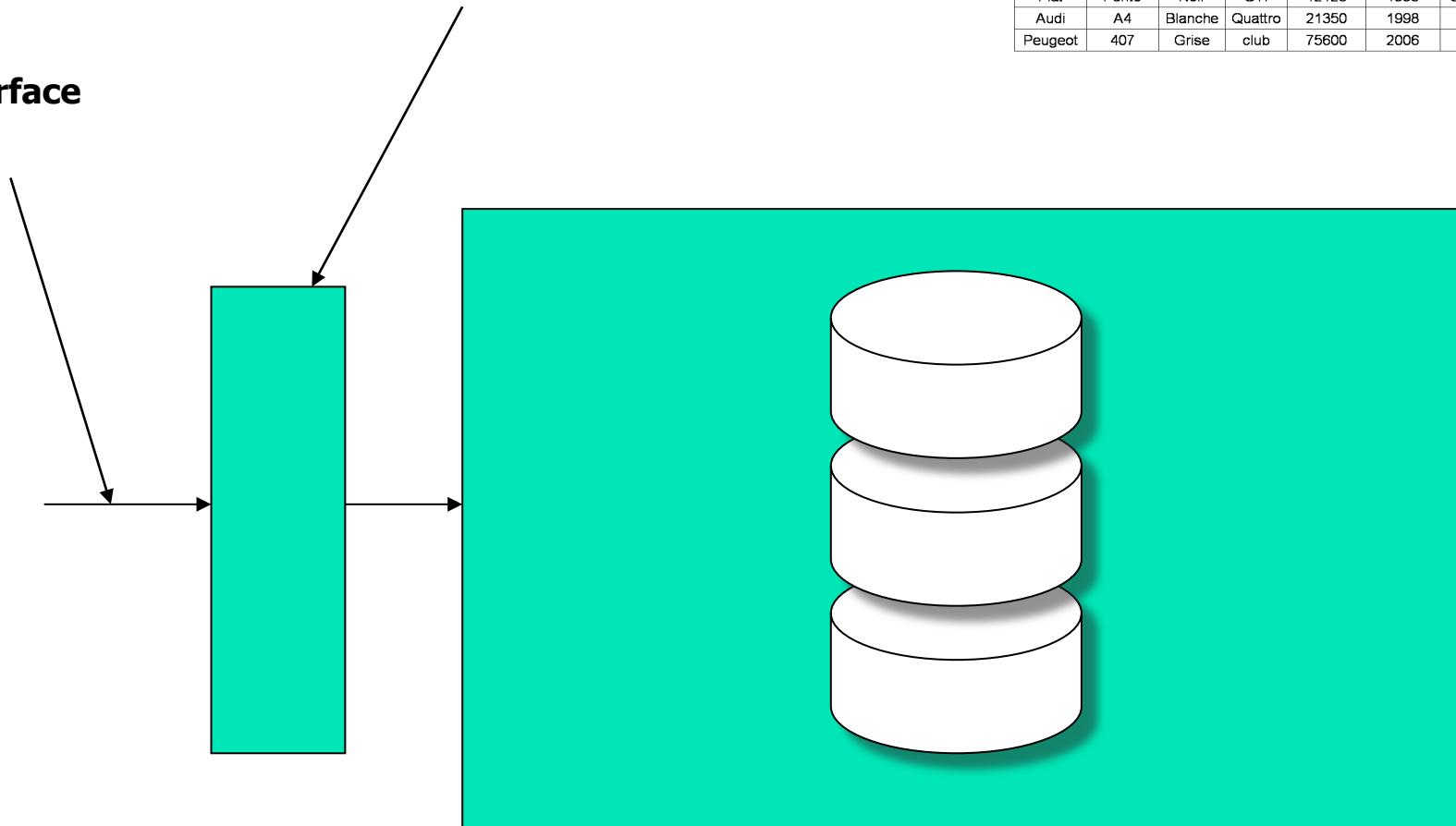
## Tables



Marque	Modèle	Couleur	Série	Compteur	millésime	Vendeurs
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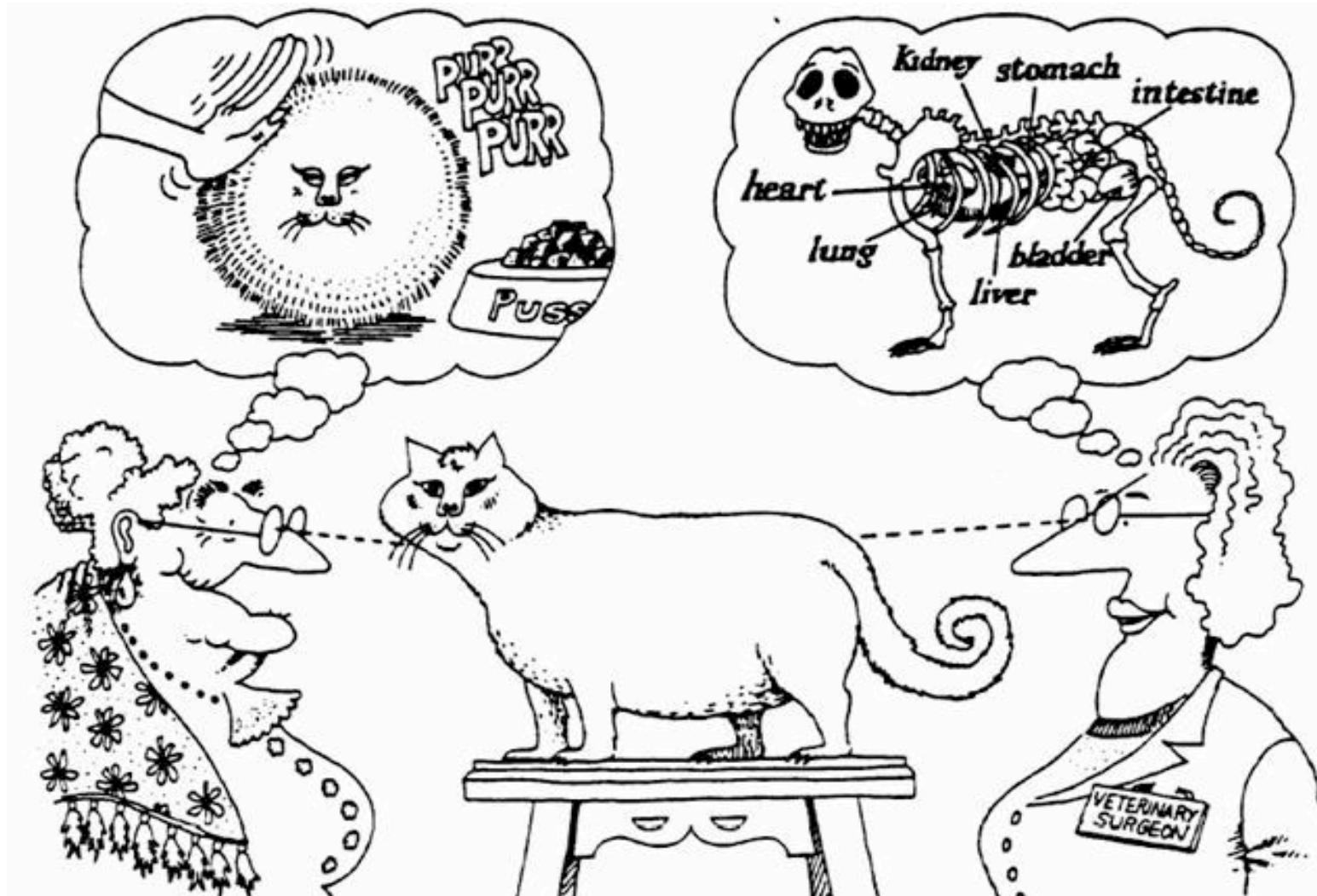
Modèle = vue simplifiée

interface

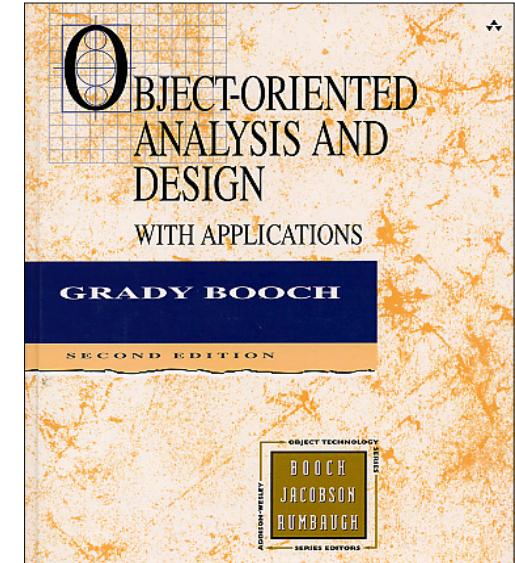


Traduction en cours

# Grady BOOCH OOAD



Abstraction focuses upon the essential characteristics of some object, relative to the perspective of the viewer.



## Architecture Framework

