



# MONEYBURST

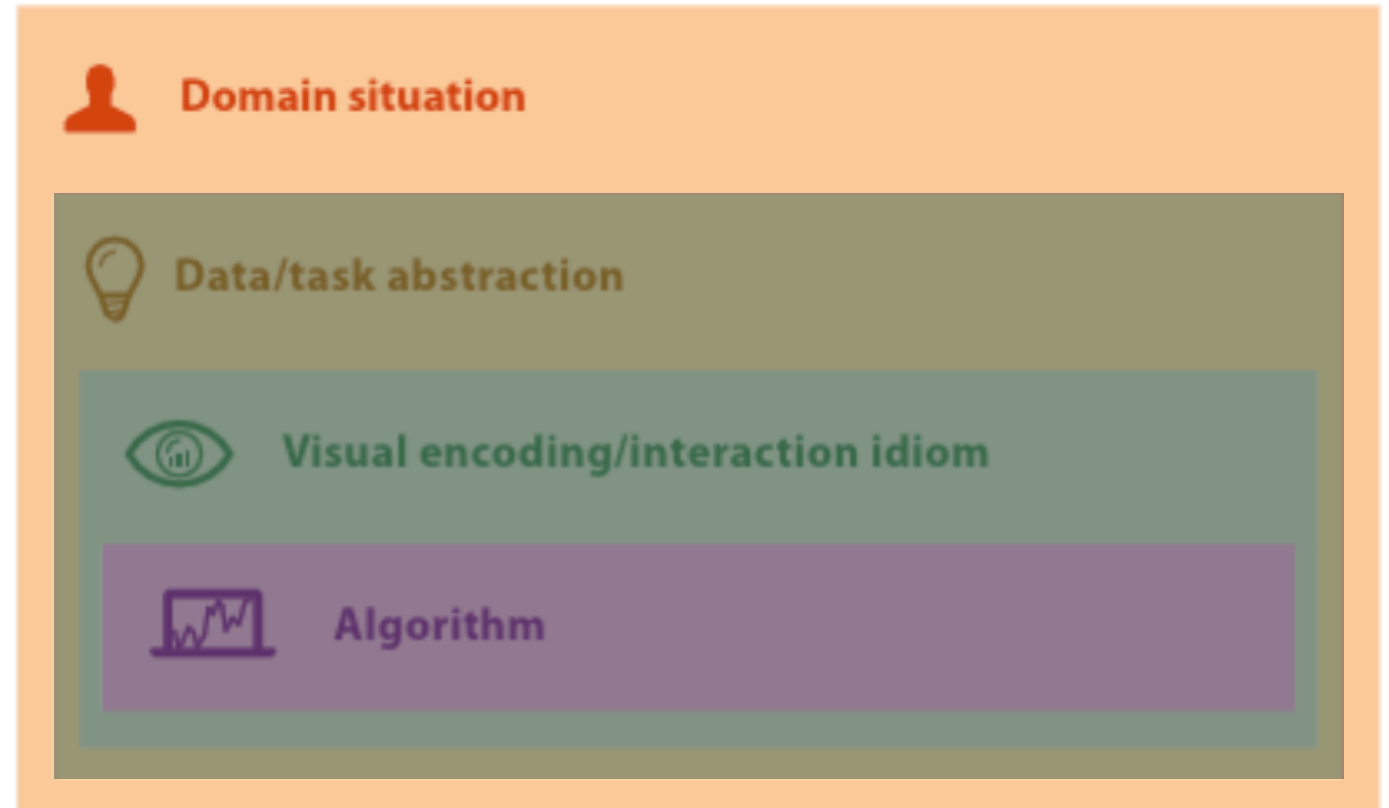
DETAILED PERSONAL SPENDING VISUALIZATION



# Analysis of Validations

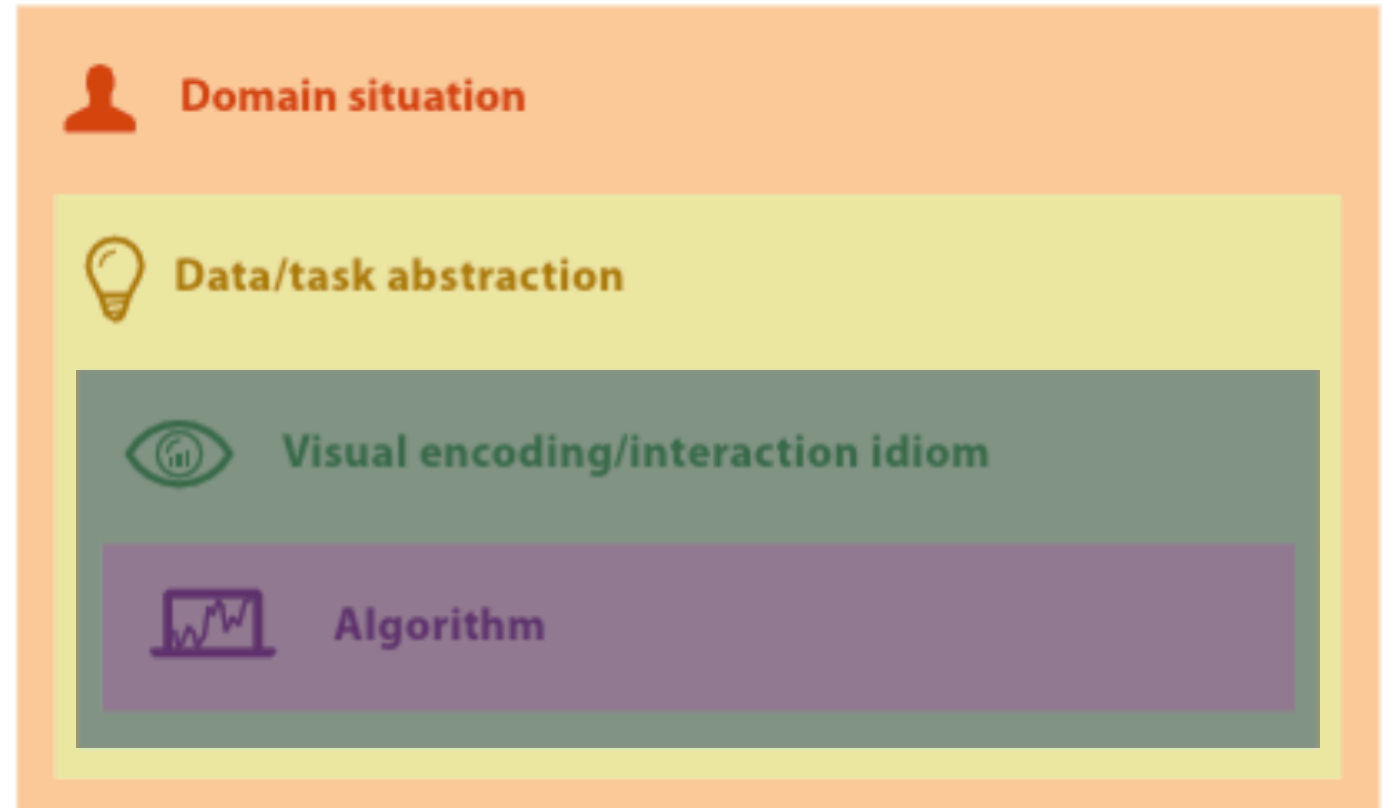
- **Target users:**

Young adults & older adults that are working/studying, not necessarily skilled in management processes, with medium to high level of technology expertise.



## ■ Data abstraction:

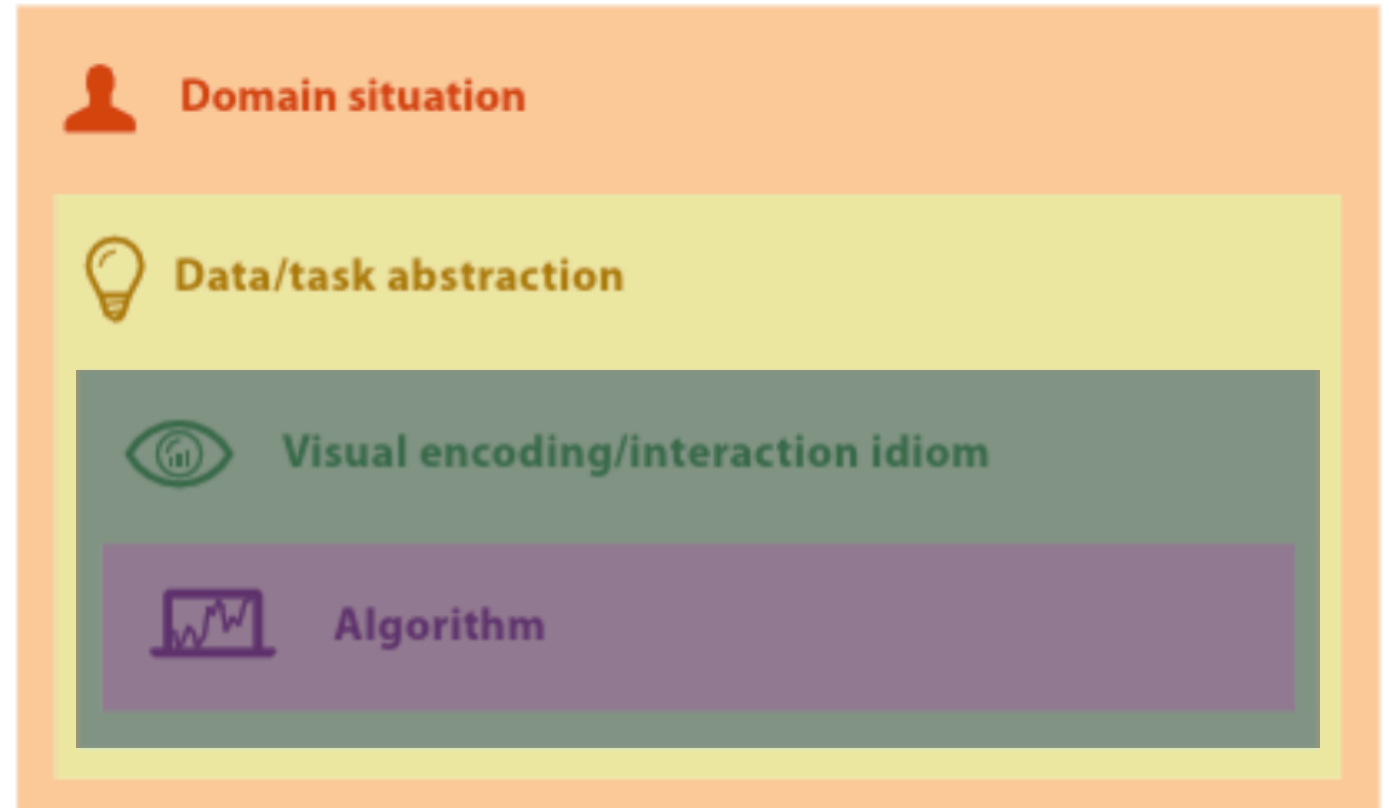
Transactions and spendings of the user containing the amount, description, detailed purpose and date. How much the user has spent during a specific range of time monthly, separating the amounts by categories & subcategories according to the type of expenses.



## ■ Task abstraction:

Hard to remember everything we have bought;  
by tracking our spending, we can realize how much money has been spent and for what purpose, and compare it in relation to the current earnings.

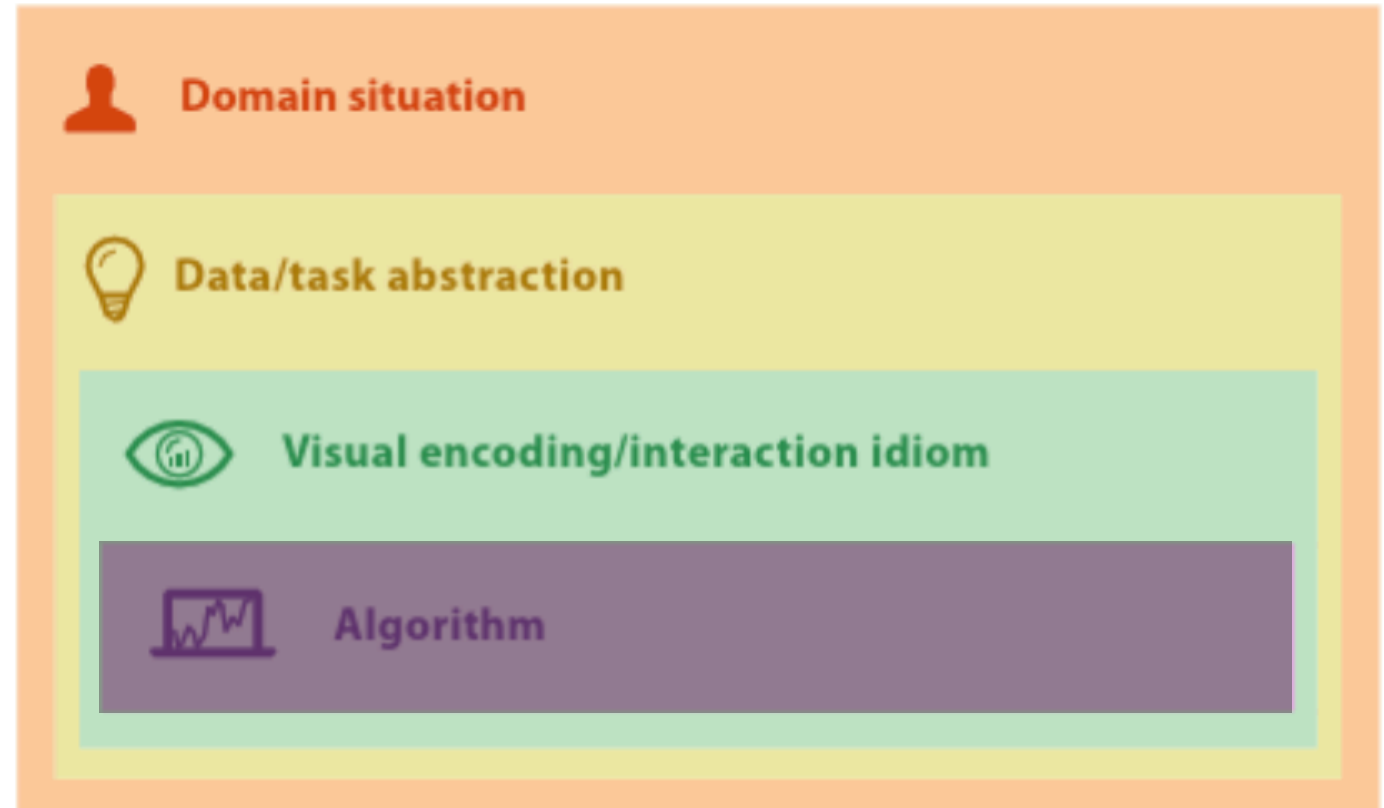
To make a change in the spending behavior of its users.



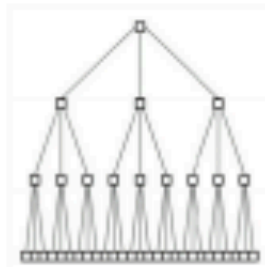
- **Interaction idiom:  
Concentric circles**

- The Sunburst technique is an alternative to the Treemap technique, that uses a radial rather than a rectangular layout.

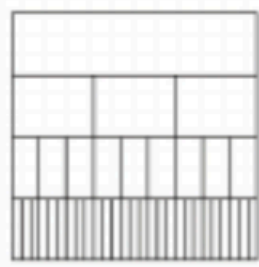
It is also called Concentric circles, with radial depth spatial position and size showing tree depth and angular spatial position showing link relationships & siblings order (Munzner, and Maguire 2014).



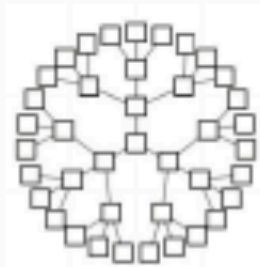
“Containment (hierarchy) marks are very effective at showing complete information about hierarchical structure, in contrast to connection marks that only show pairwise relationships between two items at once.”  
(Munzner and Maguire, 2014)



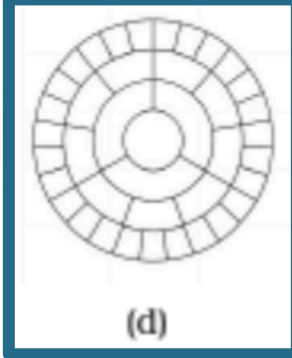
(a)



(b)



(c)



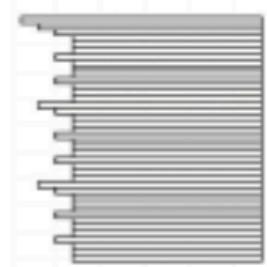
(d)



(e)



(f)



(g)

What: Data

Tree.

How: Encode

Area marks and containment, with rectilinear layout.

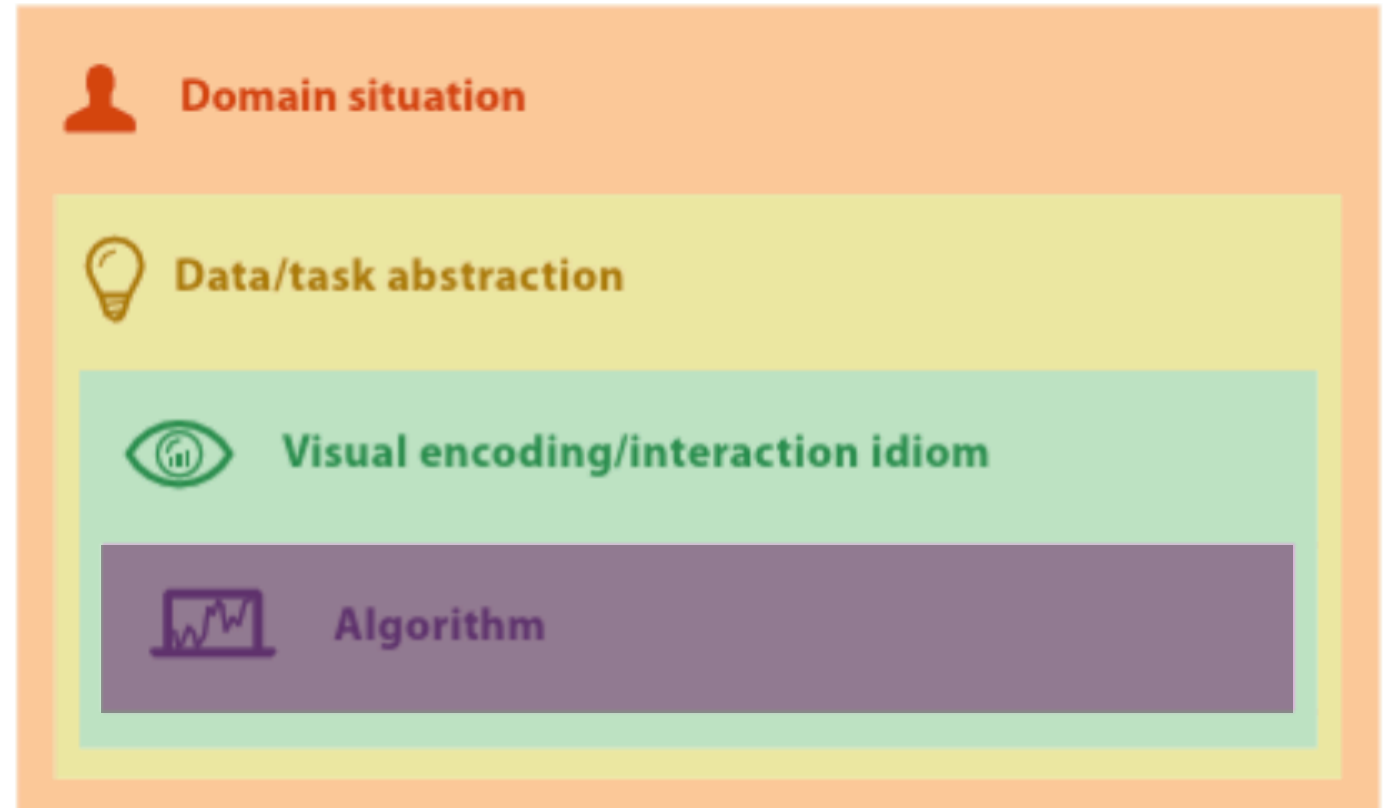
Why: Tasks

Query attributes at leaf nodes.

Scale

Leaf nodes: one million. Links: one million.

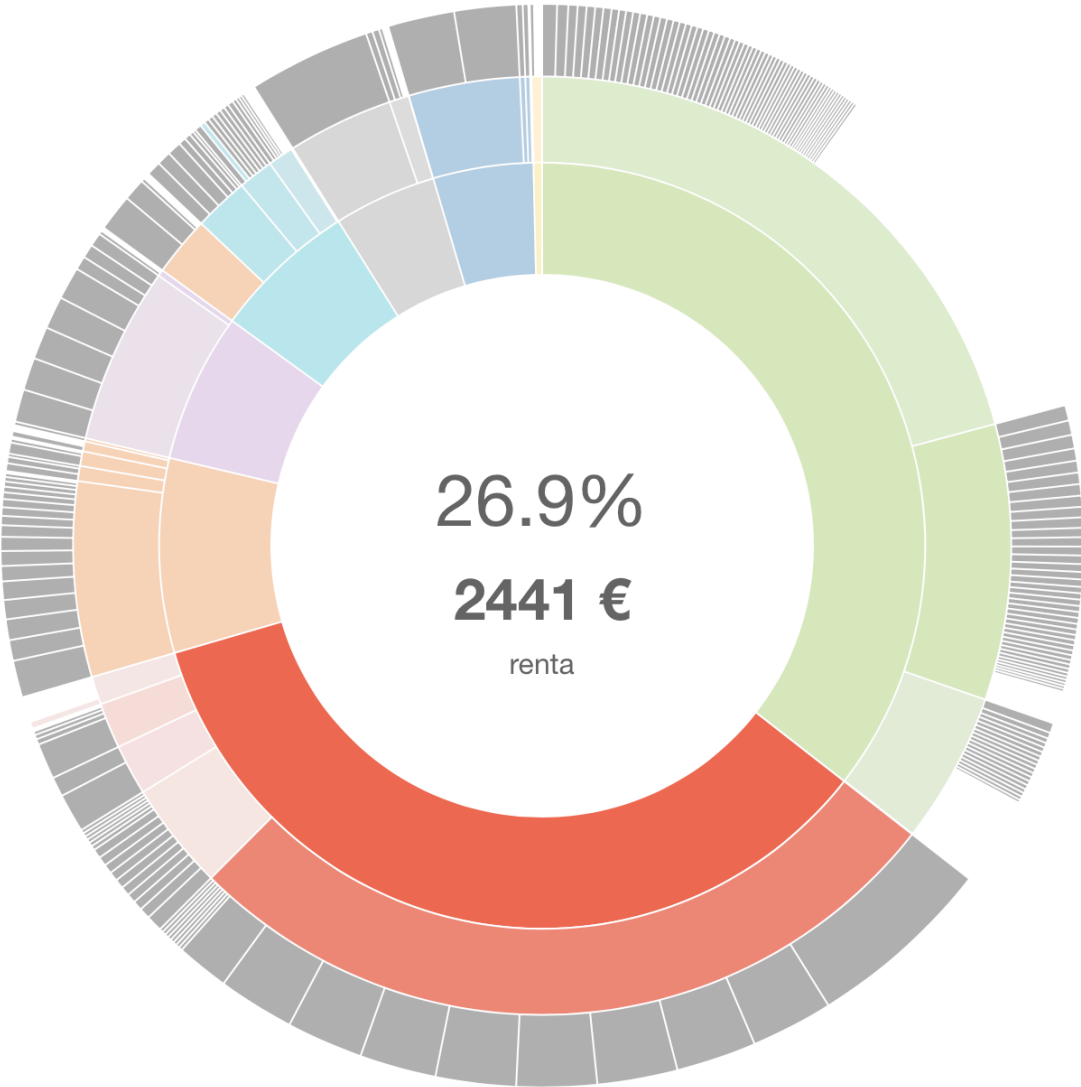
- **Visual Encoding:  
Concentric circles**
  - Categorical Color-map
  - Marks as items using areas
  - Categorical attributes using color hue on spatial regions
  - Ordered attributes using color saturation & luminance, with position on common scale



Category	Sub-category						
Home	Water	Health	Pharmacy	Personal	Clothing	Education	Tuition fees
	Power		Medical consultations		Gadgets		Books
	Repairs		Gym		Grooming		accessories
	Rent		Life insurance		Accessories		Courses
	Decoration		Health insurance		Gits	Bank management	Account adjustments
	Gas		Gas		Others		Bank fees
	Taxes	Transportation	Vehicle insurance	Entertainment	Music		
	Telephone/internet		Public transportation		Movies		
	Mortgage		Vehicle fees		Travels		
	Accessories		Car rental		Sports		
Food	Groceries		Car payments		Parties		
	Restaurants		Repairs and maintenance		Events		
	Alcohol	Accessories	Others				

Categorical attributes & Ordered attributes





- comida
- hogar
- salud
- transporte
- personales
- educacion
- entretenimiento
- gestiones

Channels: Expressiveness Types and Effectiveness Ranks

➔ **Magnitude Channels: Ordered Attributes**

- Position on common scale
- Position on unaligned scale
- Length (1D size)
- Tilt/angle
- Area (2D size)
- Depth (3D position)
- Color luminance
- Color saturation
- Curvature
- Volume (3D size)

➔ **Identity Channels: Categorical Attributes**

- Spatial region
- Color hue
- Motion
- Shape

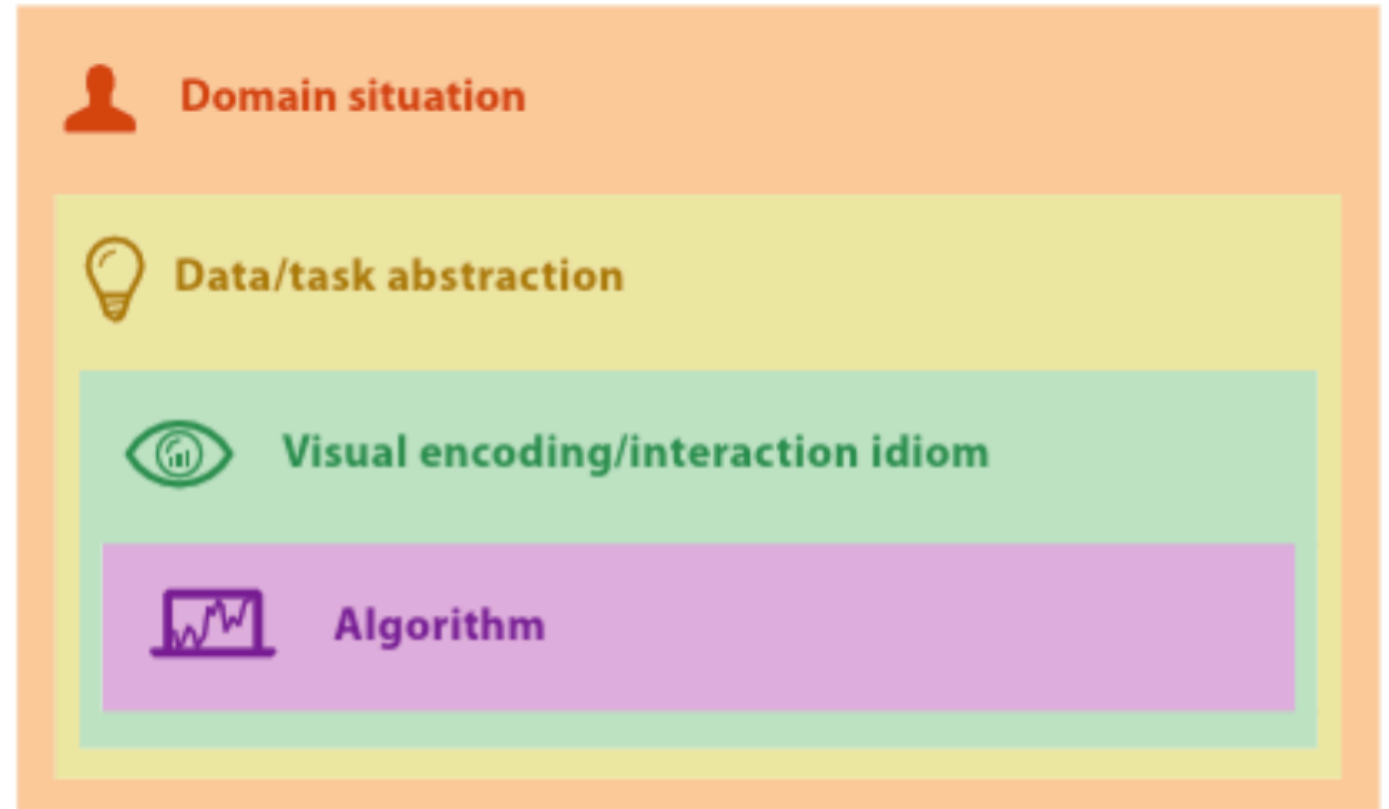
Effectiveness: Most (top) to Least (bottom)

Same (grouped attributes)

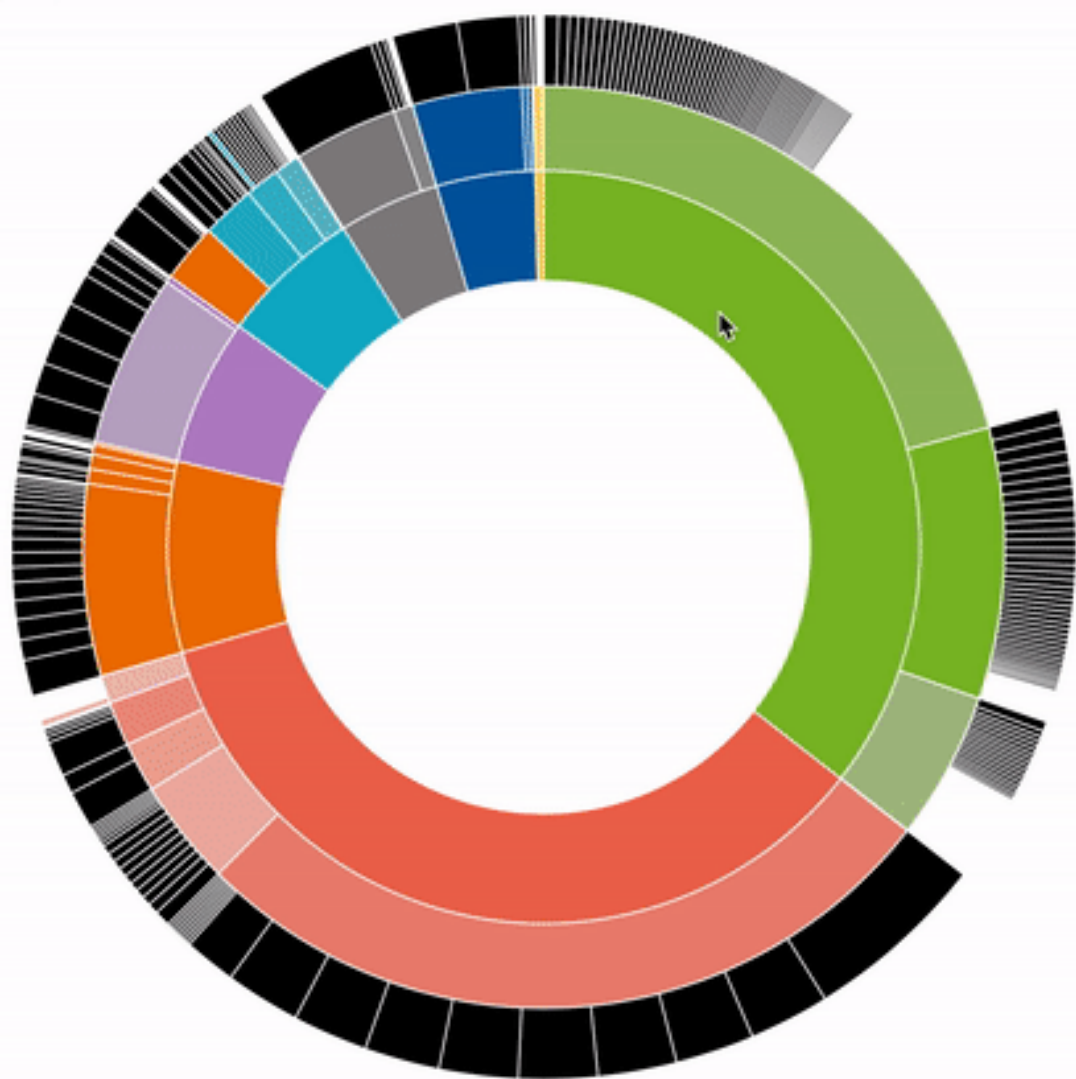
## ■ Algorithm: Sunburst

Tree depth relationship,  
with one spatial dimension and  
parent-child relationships with the other.

The root or top directory being shown is  
at the center of the display.  
Successive levels of directories are drawn  
further away from the center.  
Each level is given equal width, but the  
circular angle swept out by a directory or  
file directly corresponds to its size.  
Thus, the size of any two files in the  
hierarchy can be compared via the angles  
they subtend (Stasko et al., 2000).



Spendings in detail in 2018



## REFERENCES

- Munzner, T. and Maguire, E. (2014). *Visualization analysis & design*. 2nd ed. Boca Raton, FL: CRC Press.
- Stasko, J., Catrambone, R., Guzdial, M. and McDonald, K. (2000). An evaluation of space-filling information visualizations for depicting hierarchical structures. *International Journal of Human-Computer Studies*, 53(5), pp.663-694.