



TÉCNICO
LISBOA



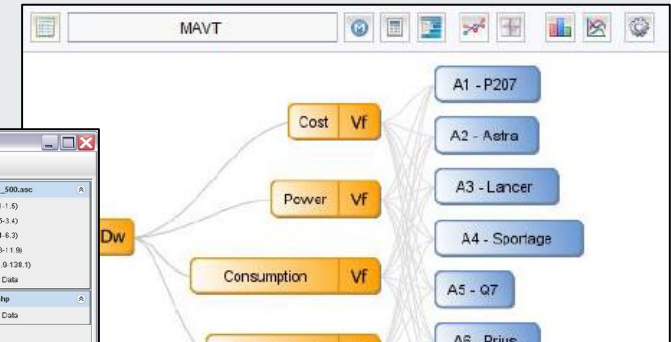
DecSpace

-

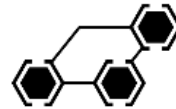
A (web/cloud) framework for MCDA

Many existing tools (see <http://pearl-kb.hydro.ntua.gr/I/Tool/>):

- ...
- D-Sight
- MCDA-ULaval
- Decerns...
- Expert Choice
- M-Macbeth
- Visual PROMETHEE
- Diviz !!!



Actor	ovv	p15	vent	lpd	dl	col	cor	oed	tech	Bos	Gr
611	66.00	14916.00	5.00	5.00	7.00	1.00	4.00	3.00	2.00	2.00	
622	72.00	16240.00	9.00	8.00	20.00	1.00	2.00	3.00	1.00	3.00	
625	54.00	18835.00	1.00	1.00	1.00	3.00	3.00	1.00	2.00	5.00	
626	63.00	18702.00	1.00	1.00	1.00	5.00	1.00	3.00	3.00	4.00	
618	66.00	18105.00	5.00	6.00	2.00	1.00	1.00	3.00	2.00	3.00	
619	62.00	14823.00	5.00	8.00	8.00	4.00	3.00	3.00	2.00	4.00	
621	64.00	17463.00	7.00	8.00	6.00	1.00	2.00	2.00	3.00	3.00	
620	72.00	12420.00	7.00	5.00	4.00	5.00	5.00	3.00	2.00	4.00	
624	64.00	14946.00	6.00	4.00	2.00	3.00	2.00	3.00	2.00	3.00	
616	63.00	18158.00	4.00	6.00	6.00	2.00	3.00	3.00	2.00	4.00	
615	64.00	17864.00	4.00	3.00	3.00	2.00	3.00	3.00	2.00	2.00	
623	62.00	17380.00	5.00	4.00	2.00	2.00	2.00	3.00	2.00	2.00	
627	57.00	12477.00	5.00	5.00	4.00	2.00	1.00	3.00	2.00	4.00	
617	66.00	21446.00	5.00	2.00	3.00	3.00	3.00	3.00	2.00	4.00	
628	66.00	15739.00	6.00	3.00	8.00	3.00	2.00	3.00	2.00	3.00	
631	66.00	22467.00	6.00	5.00	8.00	2.00	2.00	3.00	2.00	3.00	
629	66.00	18126.00	6.00	7.00	4.00	2.00	2.00	3.00	2.00	2.00	
614	64.00	17245.00	5.00	7.00	6.00	2.00	2.00	3.00	2.00	3.00	
629	62.00	19654.00	5.00	2.00	3.00	2.00	2.00	3.00	2.00	3.00	
631	66.00	12476.00	1.00	5.00	4.00	2.00	2.00	3.00	2.00	4.00	
623	62.00	19390.00	3.00	2.00	4.00	2.00	2.00	2.00	2.00	5.00	
630	64.00	21181.00	1.00	5.00	3.00	2.00	2.00	3.00	2.00	4.00	
630	64.00	19339.00	6.00	3.00	3.00	2.00	3.00	2.00	2.00	3.00	
b42	85.00	85.00	85.00	85.00	75.00	75.00	75.00	75.00	75.00	75.00	
b43	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	



Decision Deck

The Decision Deck project collaboratively develops Open Source software tools to support the Multi-Criteria Decision Aiding (MCDA) process.



diviz v17.2

diviz v17.2 has been released. [Download it!](#)



Info



Board



Manifesto



Contact



Initiatives



diviz

A software for designing, executing and sharing MCDA methods, algorithms and experiments



XMCCA

A standardized XML recommendation to represent objects and data from the MCDA field which allows MCDA software to be interoperable



XMCCA web services

Distributed computational MCDA resources, using the XMCCA standard



GIS

An initiative linking Geographical Information Systems and MCDA



TÉCNICO
LISBOA



Decision Deck

HOME CALL FOR ABSTRACTS IMPORTANT DATES PROGRAM REGISTRATION ORGANIZATION VENUE ACCOMMODATION, TRAVEL AND TOURISM SPONSORS

15th Decision Deck Workshop

26 September 2018, Lisbon, Portugal



IMPORTANT DATES

DDWS15 - 15th Decision Deck Workshop

Welcome to the 15th Decision Deck Workshop, which is co-organised with the **88th EWG-MCDA Meeting** in Lisbon. Note, while the Decision Deck Workshop will be held at **Instituto Superior Técnico**, the EWG-MCDA Meeting will be held at **Academia das Ciências de Lisboa**.

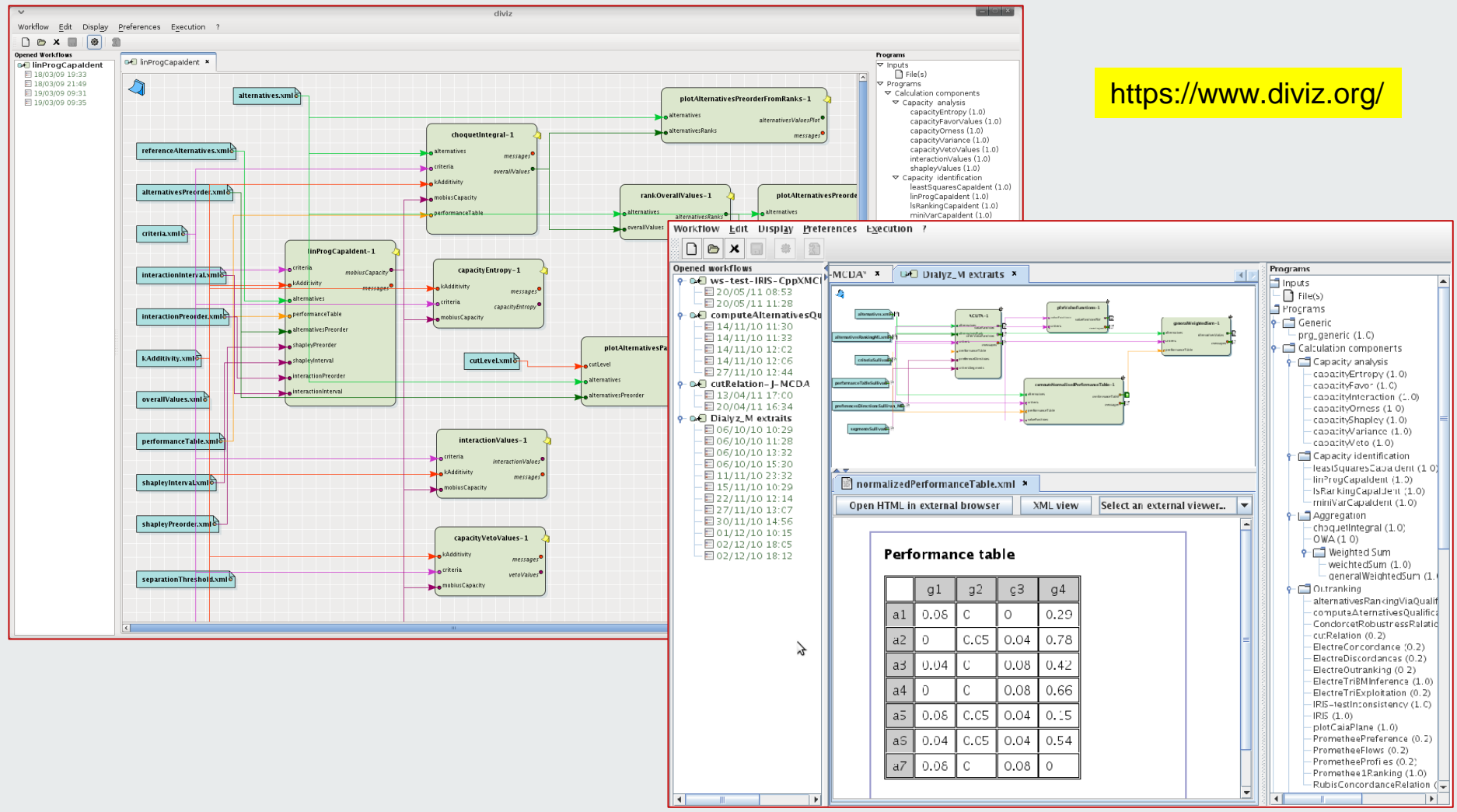
What is Decision Deck?

The Decision Deck project aims at collaboratively developing tools to support the Multiple Criteria Decision Aiding (MCDA) process. The purpose of the project is to provide effective tools for three types of "users":

- consultants or analysts who use MCDA tools to support actual decision makers involved in real world decision problems,

Diviz, a great resource, with a very rich server (MANY METHODS AVAILABLE) and a desktop client tool...

<https://www.diviz.org/>



The screenshot displays the Diviz desktop client interface. The main workspace shows a complex workflow diagram with various nodes and data flows. On the right, a 'Performance table' is visible, containing the following data:

	g1	g2	c3	g4
a1	0.06	C	0	0.29
a2	0	C.05	0.04	0.78
a3	0.04	C	0.08	0.42
a4	0	C	0.08	0.66
a5	0.06	C.05	0.04	0.15
a6	0.04	C.05	0.04	0.54
a7	0.06	C	0.08	0



DecSpace Objectives

A **web** framework:

- For MCDA specialists (experimenting new methods, new workflows...)
- For non-specialists (lowering the complexity of using MCDA methods).
- And ultimately also a platform for teaching/learning and collaborating (private and public projects, tutorials to demonstrate methods, etc.)...

Project - demo

Methods

Local Methods

- Demo Method
- CAT-SD
- Inquiry
- Order By
- Sort
- SRF

DecSpace

About Method Catalog FAQ Contact Us Sign Up Log In

A multi-criteria decision analysis framework

Get a possible solution to various multi-criteria problems with the use of the available methods.

Explore various MCDA methods

Create and manage many projects

Create your own methods

Share your results with other users

Many more features to come!

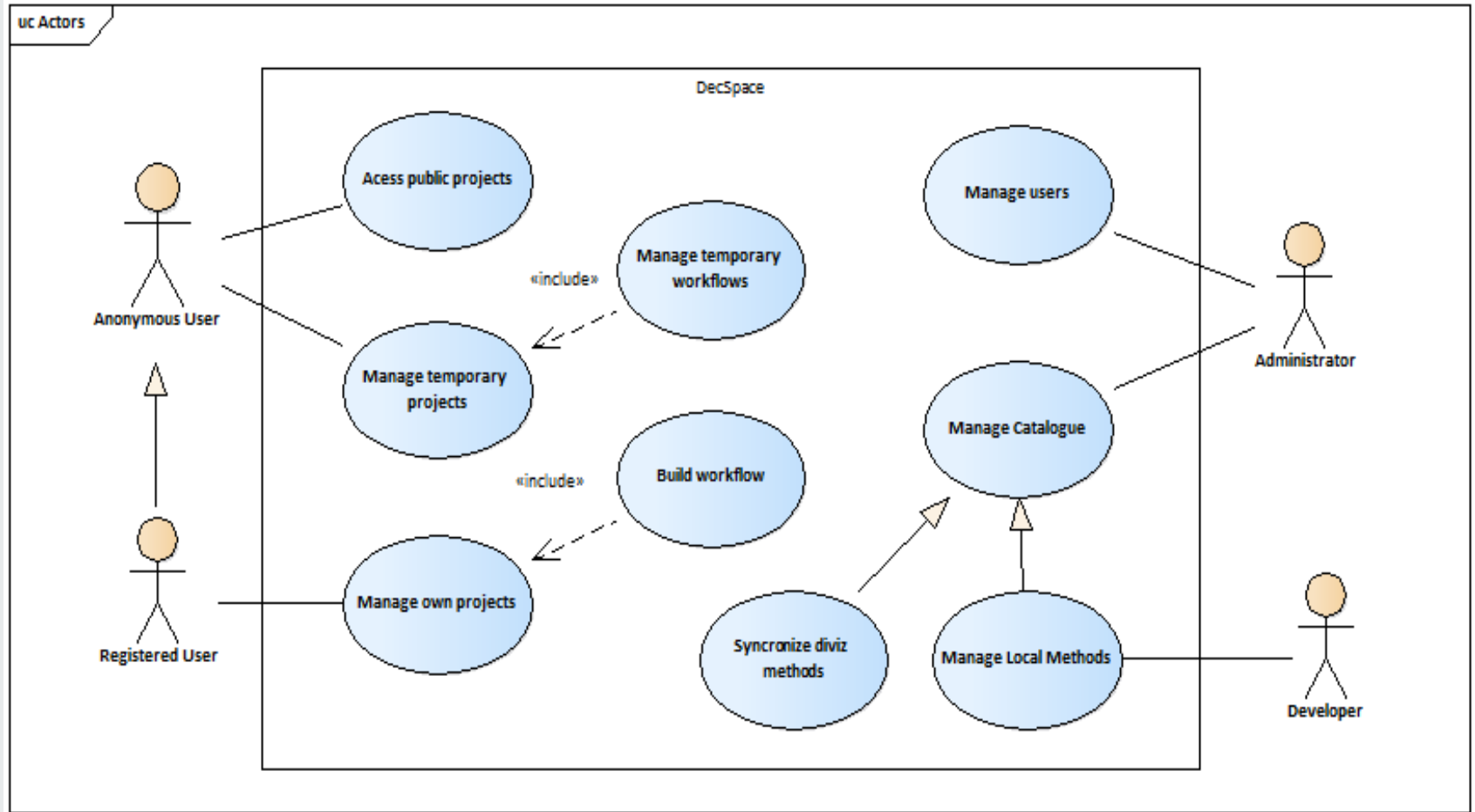
Try it now!

CLOSE



DecSpace Overview

Use Cases



DecSpace Overview

Architecture and Technology

Architecture

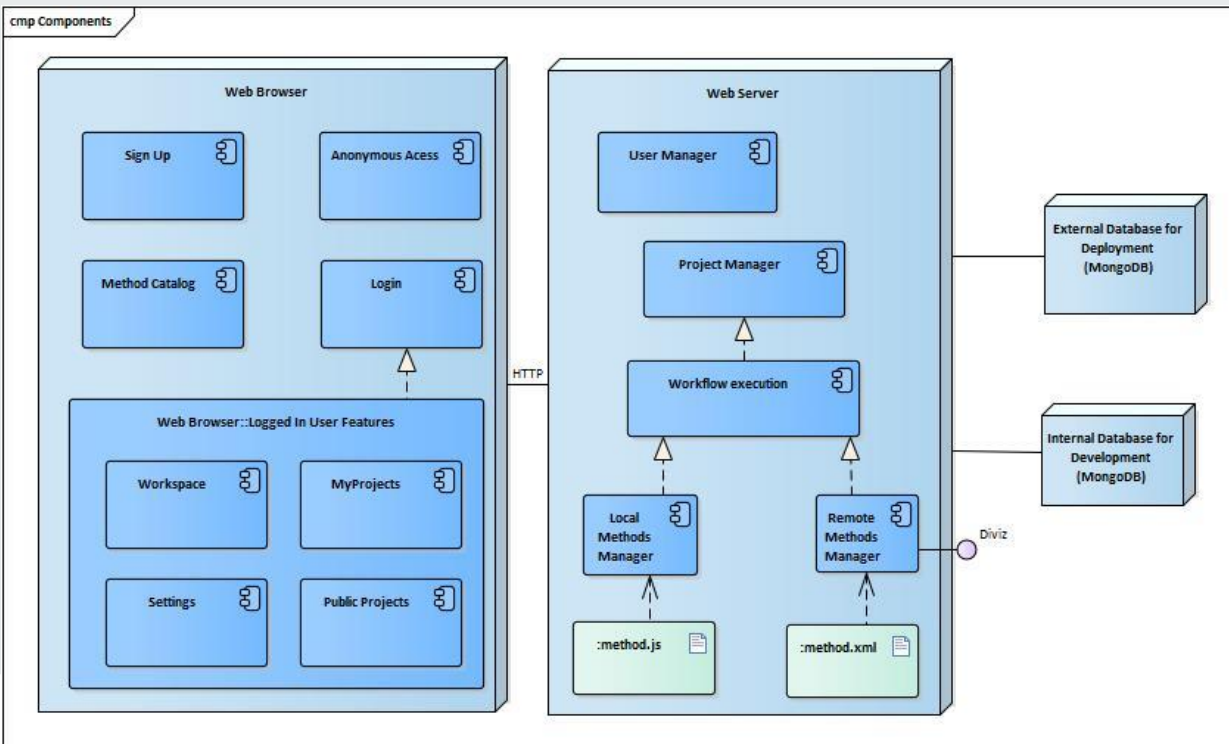
- 3 tiers

- Client tier
- Application tier
- Data tier

Technology

- Tech Stack

- Vue.js (was Angular.js...)
- Node.js (with Express web application framework)
- MongoDB (for persistency...)





DecSpace Overview...

Just like Diviz, but with **Web** interface, easy to input data (upload files, or edit locally...)

MCDA Framework User: admin | Back to Projects | Help | Logout

Description: Cars Example

Criteria Set

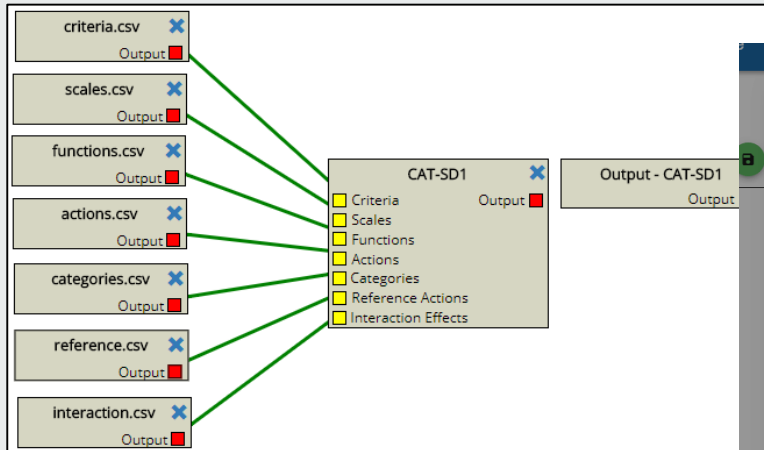
If you want to use a method to calculate the weights, click on "Weight" after adding all the criteria.

Action	Name	Description	Direction	Measure	Weight	Indifference	Preference	Veto
<input type="button" value="Add Criterion"/>	<input type="text" value="Criterion name"/>	<input type="text" value="Criterion description"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value="Weight"/>	<input type="text" value="Indifference"/>	<input type="text" value="Preference"/>	<input type="text" value="Veto"/>
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	Price		min	cardinal	0.4	500	3000	4000
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	Power		max	cardinal	0.18	0	30	0
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	0-100		min	cardinal	0.12	0	2	0
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	Consumption		min	cardinal	0.21	0	1	0
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	CO2		min	cardinal	0.09	0	100	0

Assigned Categories

Action	Snipers	Breachers	Communications Operators	Heavy Weapons Operators	Not Assigned
a1	✓				
a2			✓		
a3				✓	
a4			✓		
a5	✓			✓	
a6					
a7					

Title	Total Score	Average Score	Standard Deviation
(RM) Loss of Archived Data due to technological obsolescence	2	0.18181818181818182	0.8331955809010619
(RM) Loss of Archived Data due to component faults	3	0.2727272727272727	0.7496555682941201
(DP) Loss of Original Data due to component faults	-2	-0.18181818181818182	0.7158188976374374
(RM) Loss of Archived Data due to technological faults	1	0.09090909090909091	0.7925270806437587
(DP) Loss of Original Data due to a human error	1	0.09090909090909091	0.9958591954639383
(RM) Loss of Metadata about Archived Data	-1	-0.09090909090909091	0.7925270806437588
(RM) Outdated Metadata about Archived Data	-1	-0.09090909090909091	0.6680426571226848
(DC) Insufficient or Incomplete Metadata about Accessed Data	-1	-0.09090909090909091	0.7925270806437588
(RM) Unauthorized Data Access	4	0.36363636363636365	0.7713892158398701
(RM) Loss of Archived Data due to Organizational failure	1	0.09090909090909091	0.8999540851465149



Input

A parameter:

Another parameter:

One more parameter:

Some final examples:

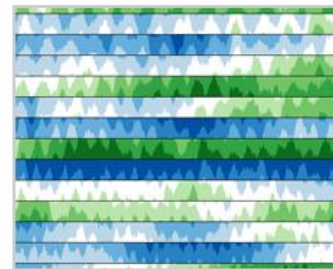
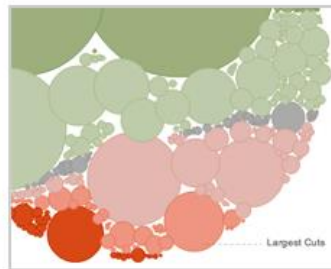
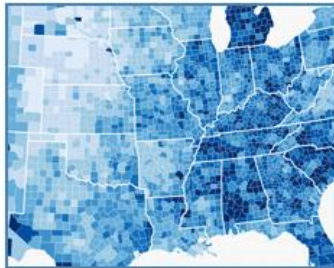
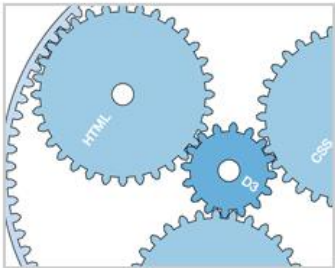
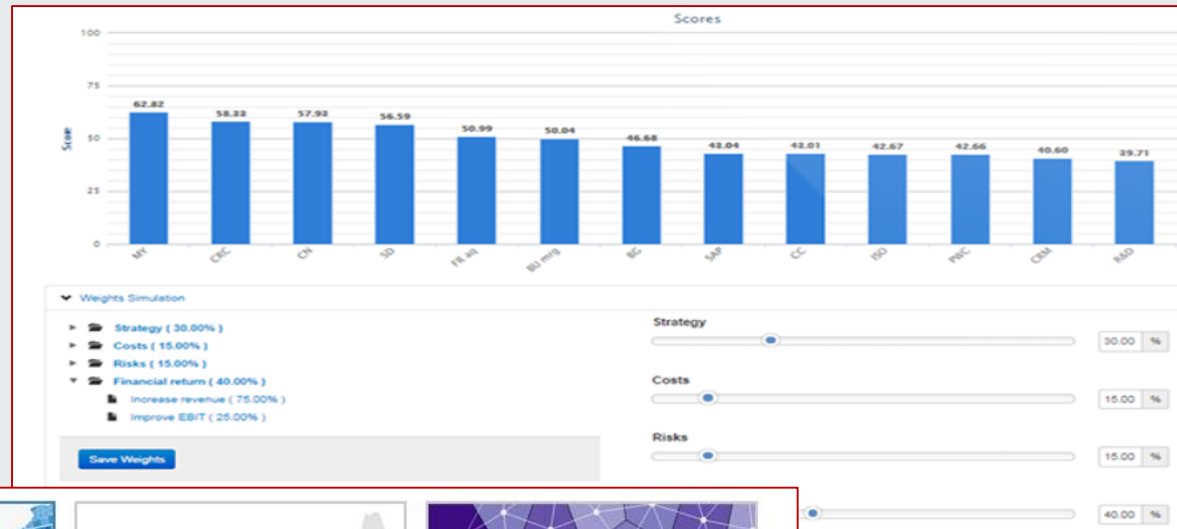
- A choice
- Option A
- Option B
- Option C

Future steps:

- Collaborate with the Decision Deck Project
- Explore state of the art web technology
- ...

e.g. D3.js is a powerful JavaScript library for data visualization for dashboards...:

- Bar Chart
- Bubble Chart
- Treemap
- Heatmaps
- Geo Web Map
- ...





Project Planning (WORKING CLOSER WITH THE DECISION DECK PROJECT)

- Present – private functional prototype (but a permanent “moving target”, as we’ve been “testing technology”...)
- December 2018 – public V1.00:
 - all core functions for project management
 - small catalogue of local functional methods
 - a couple for remote functional Diviz methods
- ...June 2019 – public V2.00 (
 - more methods (local and remote...)
 - library of visualization methods
 - support for “tutorial projects”
- <https://www.youtube.com/watch?v=Vh0Hu2pOBx4&feature=youtu.be>



TÉCNICO
LISBOA



BTW,

- would you like us to do anything for you?
- are you doing/planning anything related?...



Just email us:

- **José Borbinha**
- **jlb@tecnico.ulisboa.pt**

Images:
• <https://depositphotos.com/56153711/stock-photo-handwritten-underlined-lets-do-it.html>
• <https://www.joebarrios.com/wp-content/uploads/2016/07/what-is-a-requirement-for-business-analysts-1024x853.jpg>
• <https://gst-online.com/wp-content/uploads/2015/12/12721780-Word-on-keyboard-made-in-3D-Stock-Photo-requirement.jpg>