DecSpace
-
A (web/cloud) framework for MCDA
Many existing tools (see http://pearl-kb.hydro.ntua.gr/l/Tool/):

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

Initiatives

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

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

- **XMCDA web services**
  Distributed computational MCDA resources, using the XMCDA standard

- **GIS**
  An initiative linking Geographical Information Systems and MCDA

https://www.decision-deck.org/project/
15th Decision Deck Workshop
26 September 2018, Lisbon, Portugal

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,
- decision makers who have to apply MCDA for their organization,
- researchers who use MCDA tools to improve the quality of MCDA methods.

The project's target is to increase the availability and usability of MCDA tools by bringing together the expertise and needs of these different types of users.
Diviz, a great resource, with a very rich server (MANY METHODS AVAILABLE) and a desktop client tool...

https://www.diviz.org/
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.).
DecSpace Overview

Use Cases

- Acess public projects
- Manage temporary projects
- Manage own projects
- Manage temporary workflows
- Build workflow
- Syncronize diviz methods
- Manage Catalogue
- Manage Local Methods
- Manage users

uc Actors:
- Anonymous User
- Registered User
- Administrator
- Developer
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...)

Criteria Set

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<th>Name</th>
<th>Description</th>
<th>Direction</th>
<th>Measure</th>
<th>Weight</th>
<th>Indifference</th>
<th>Preference</th>
<th>Veto</th>
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Assigned Categories

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<th>Breachers</th>
<th>Communications Operators</th>
<th>Heavy Weapons Operators</th>
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</table>

Title | Total Score | Average Score | Standard Deviation
---|-------------|---------------|---------------------
RM Loss of Archived Data due to technological malfunction | 2 | 0.18181818181818182 | 0.83319000000000009 |
RM Loss of Archived Data due to component faults | 3 | 0.27272727272727272 | 0.7496556829412012 |
IP Loss of Original Data due to component faults | -2 | -0.18181818181818182 | 0.7158188976378374 |
RM Loss of Archived Data due to technological malfunction | 1 | 0.09090909090909091 | 0.792527088037867 |
IP Loss of Original Data due to human error | 1 | 0.09090909090909091 | 0.955059146439383 |
RM Loss of Metadata about Archived Data | 1 | 0.09090909090909091 | 0.792527088037867 |
RM Loss of Metadata about Archived Data | 1 | 0.09090909090909091 | 0.688426571226848 |
RM Loss of Data Access | 4 | 0.36363636363636363 | 0.7718882158548791 |
RM Loss of Archived Data due to Organizational failure | 1 | 0.09090909090909091 | 0.8999540051402149 |

Input

A parameter: Enter your value
Another parameter: Choose an option
One more parameter: 45
Some final examples: 
- A choice
- Option A
- Option B
- Option C

OK
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
- HeatmapsGeo Web Map
- ...

![D3.js Examples](image-url)
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
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