

MayBMS Quick Look

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Comprendre le monde,
construire l'avenir



MayBMS

- **MayBMS**: a probabilistic database management system, based on a variation of *c*-tables

Contains:

1. **data representation** (succinct representation of possible worlds)
2. **query language** (based on SQL)

Data Representation

- **U-relations** along with a **world table W**

$U_{R[SSN]}$	$V \mapsto D$	TID	SSN
	$x \mapsto 1$	t_1	185
	$x \mapsto 2$	t_1	785
	$y \mapsto 1$	t_2	185
	$y \mapsto 2$	t_2	186

$U_{R[M]}$	$V \mapsto D$	TID	M
	$v \mapsto 1$	t_1	1
	$v \mapsto 2$	t_1	2
	$w \mapsto 1$	t_2	1
	$w \mapsto 2$	t_2	2
	$w \mapsto 3$	t_2	3
	$w \mapsto 4$	t_2	4

$U_{R[N]}$	TID	N
	t_1	Smith
	t_2	Brown

W	$V \mapsto D$	P
	$x \mapsto 1$	.4
	$x \mapsto 2$	.6
	$y \mapsto 1$	.7
	$y \mapsto 2$	.3
	$v \mapsto 1$	.8
	$v \mapsto 2$	.2
	$w \mapsto 1$	.25
	$w \mapsto 2$	.25
	$w \mapsto 3$	.25
	$w \mapsto 4$	.25

J. Huang, L. Antova, C. Koch, and D. Olteanu, "MayBMS: a probabilistic database management system," SIGMOD, 2009, pp. 1071–1074.

Query Language

- **relational algebra** (SQL operation, **except** aggregates)
- **repair key** construct: **transforming deterministic tables into uncertain tables**, based on maximal key repairs
- **pick tuples** construct: **generates sets of worlds** that can be obtained from a SQL query

Probability Computation

- `conf` construct: computes exact probabilities
- `aconf(ϵ, δ)` construct: computes (ϵ, δ) -approximations of probabilities

Further Reading

- [MayBMS website](http://maybms.sourceforge.net/): <http://maybms.sourceforge.net/>
(download, installation, manual)
- J. Huang, L. Antova, C. Koch, and D. Olteanu, “[MayBMS: a probabilistic database management system](#),” SIGMOD, 2009, pp. 1071–1074.