

# BarcaWin2000

## Training Course



## SPEAR Workshop 3

J.G. Ferreira,  
A.M.Nobre  
IMAR  
New University of Lisbon

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<http://www.imar.pt/>

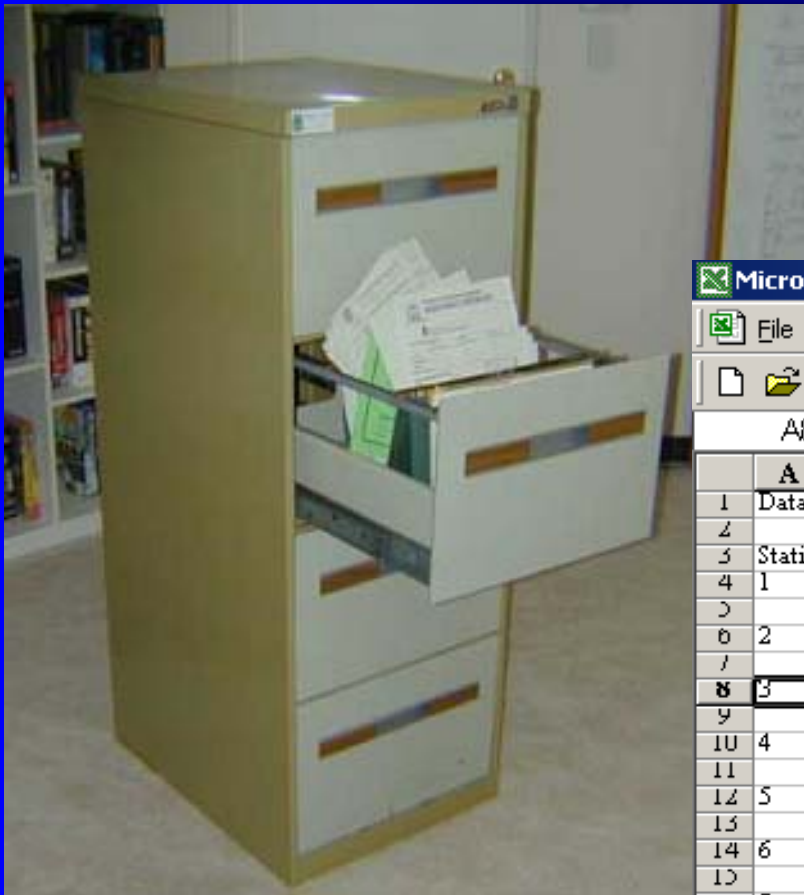


# Topics

- **Storage of data**
- **Example uses**
- **Database models**
- **B2K structure**
- **Defining and loading a database**
- **Tables and outputs (list, search, graph)**

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# Typical storage approaches



Microsoft Excel - SG9401.XLS

File Edit View Insert Format Tools Data Window Help

100% Times New Roman

A8 = 3

	A	B	C	D	E	F	G	H	I
1	Data of N, P, pH, COD, Chlorophyll-a and POM in Sungo Bay, Investigated in Jan. 199								
2									
3	Station	sample depth(m)	temp (o	time	D2-N (µg	NH4-N (µg	NO3-N (µg	NO2-N (µg	NOx-N (µg
4	1	surface	24	4.8	1.13 10	0.18	0.04	2.6	2.82
5		bottom				0.17	0.04	2.38	2.59
6	2	surface	15	4.7	1.13 11	0.16	0.01	1.92	2.09
7		bottom				0.16	0.49	1.5	2.15
8	3	surface	14	4.8	1.13 10	0.25	0	1.55	1.8
9		bottom				0.45	0.09	1.62	2.16
10	4	surface	16	4.8	1.13 09	0.35	0.35	2.93	3.63
11		bottom				0.4	0.32	1.67	2.39
12	5	surface	13	4.4	1.14 09	0.26	0	1.71	1.97
13		bottom				0.36	0.19	1.03	1.58
14	6	surface	12	4.4	1.14 10	0.38	0	0.77	1.15
15		bottom				0.47	0.22	0.9	1.59
16	7	surface	10	4.7	1.13 11	0.21	0.2	2.16	2.57
17		bottom				0.19	0.04	1.27	1.5
18	8	surface	11	4.7	1.13 12	0.44	0	1.6	2.04
19		bottom				0.46	0.12	2.03	2.61



- Time-based: Data structured in time (1 set = multiple stations)
- Space-based: Data structured in space (1 set = multiple dates)

# Problems

## Where

- Multi-team studies
- Multi-project studies
- Interdisciplinary studies
- Conclusion – all studies of non-trivial dimension: (e.g. more than 3 stations, more than 2 campaigns, several parameters)

## When

- Timely storage and retrieval
- Data quality control and validation
- Conversion of data into information

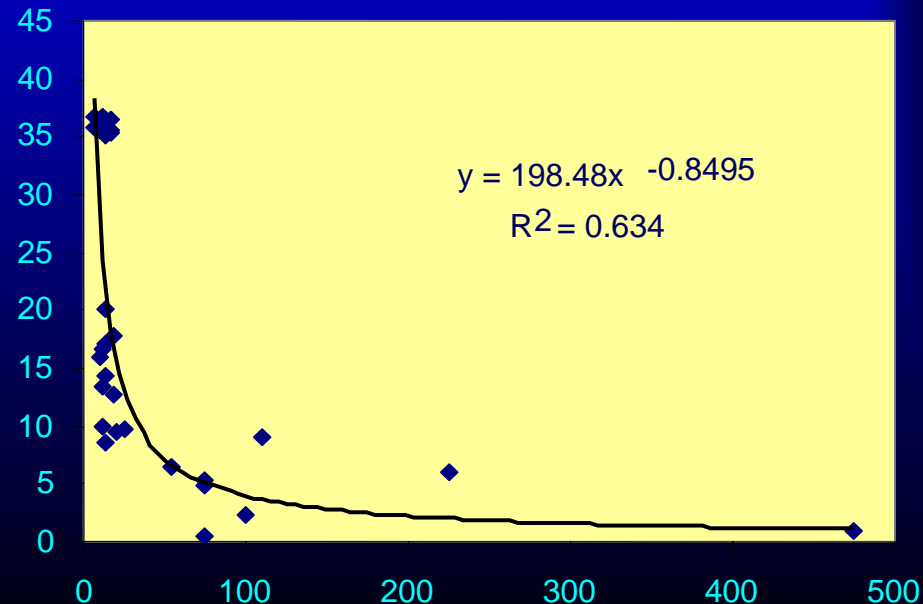
## How

- Inability to search efficiently
- Serious difficulties in overall data processing
- Loss of information
- Redundancy and/or data loss

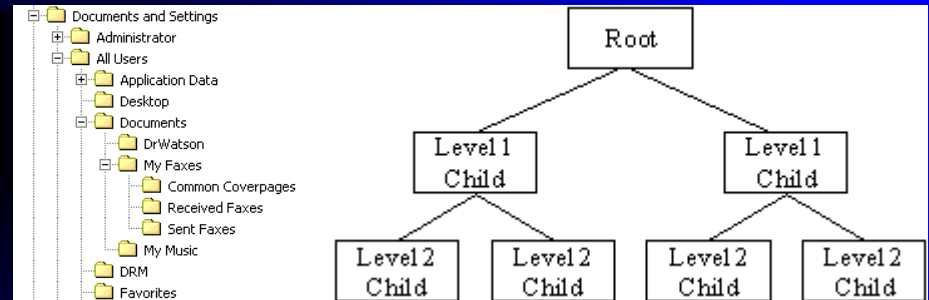
# What information do we want to retrieve?

## Example: Usage in the OAERRE project

- Archiving historical and project data
- Generation of water quality data for GIS
- Definition of homogeneous model boxes
- Determination of initial conditions
- Analysis of data relationships for models (e.g. N/P ratios)
- Deriving relationships (e.g. SPM and POC)
- Model calibration and validation



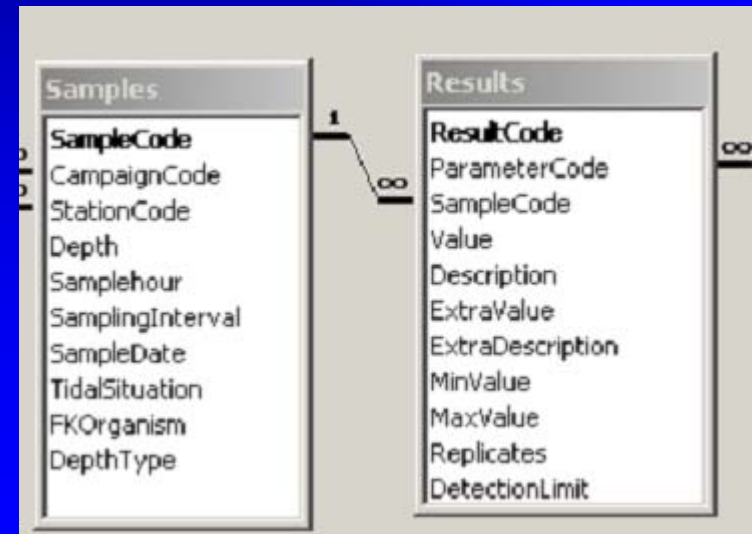
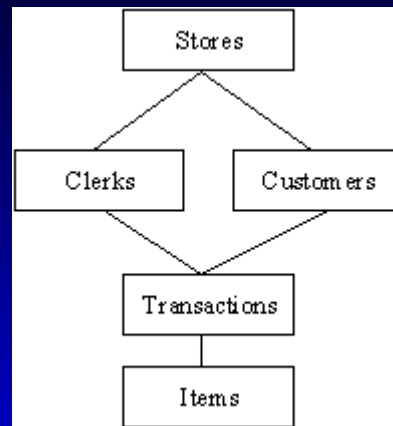
# Database models



● Hierarchical

● Distributed

● Relational



<http://www.extropia.com/tutorials/sql/>

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