Decision Support Systems and Business Modelling

(EBC 2088)

János Flesch

Department of Quantitative Economics
Maastricht University, The Netherlands

April 16, 2019

Coordinator and Tutor: János Flesch

- email: j.flesch@maastrichtuniversity.nl
- room: A3.16 (in this building)

Coordinator and Tutor: János Flesch

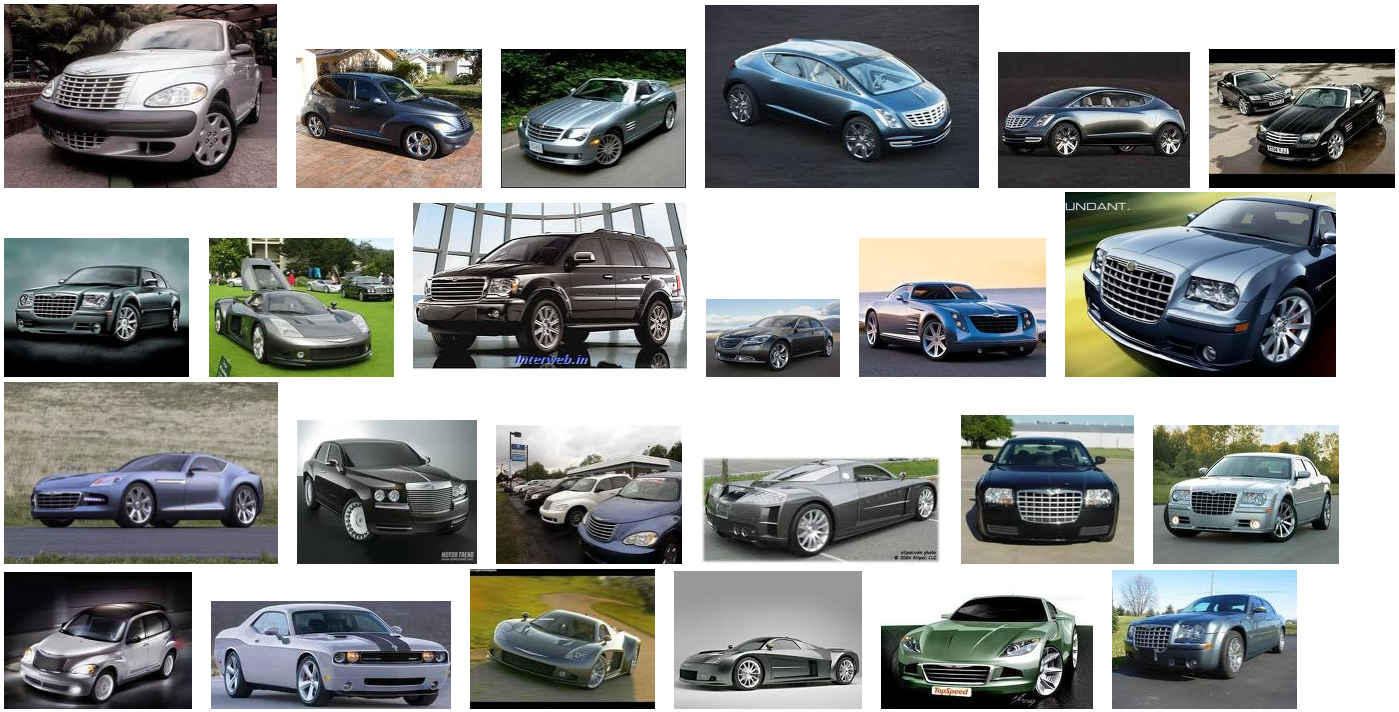
- email: j.flesch@maastrichtuniversity.nl
- room: A3.16 (in this building)

Introduction of students

What is a DSS?

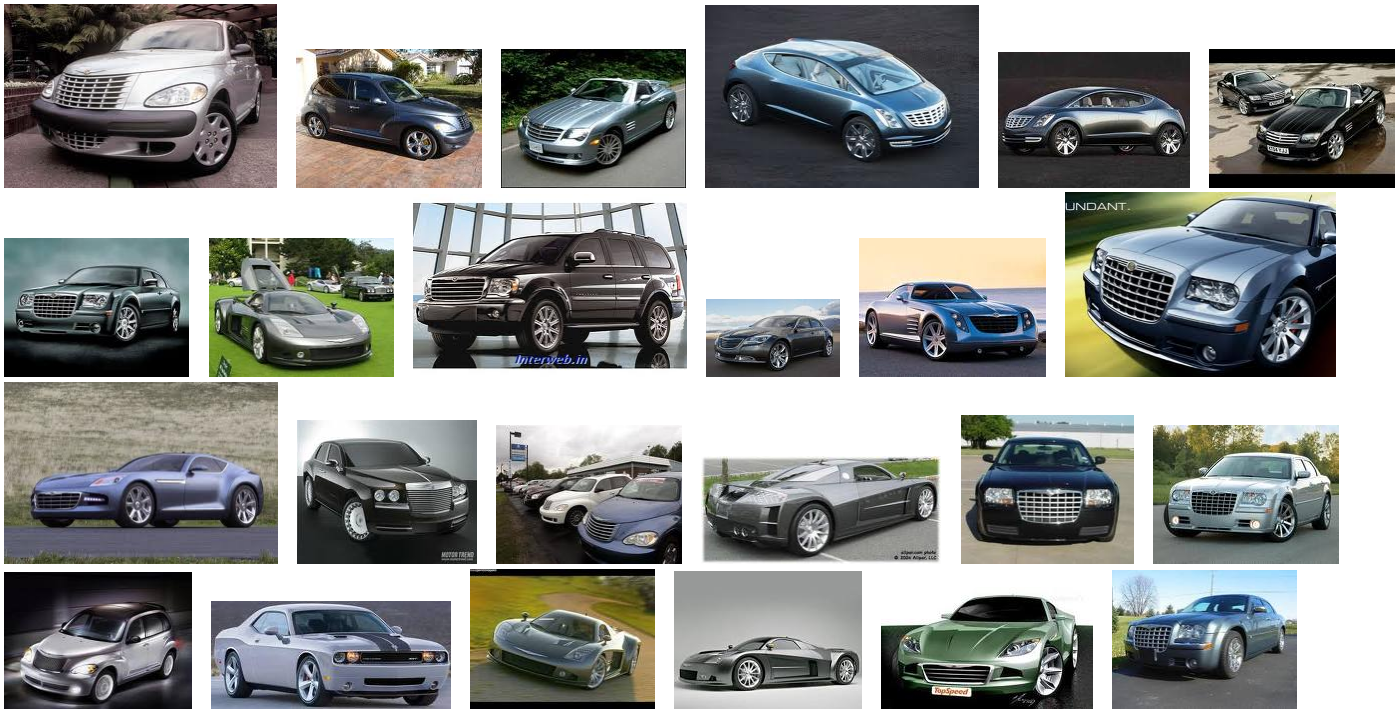
What is a DSS?

Suppose we want to buy a car:



What is a DSS?

Suppose we want to buy a car:



http://www.cars.com

A decision support system (DSS) is a model-based or knowledge-based system intended to support managerial decision making in semi-structured or unstructured situations. A DSS contains:

- Database: provides the data for the decision
- Model base: provides models and methods for analysis (e.g. optimization, statistical, simulation methods)
- Knowledge base: provides specific expertise (e.g. credit card companies use DSS to identify credit card thefts by the spending pattern, which is stored in their knowledge base)
- Graphical User Interface (GUI): arranges the communication between the user and the DSS
- User: often managers and staff specialists

Examples of DSS:

Examples of DSS:

- "Whiskey Buying Guide"

Examples of DSS:

- “Whiskey Buying Guide”
- “Cocktails”

Some more examples:

Dog selector
Dutch magazines
Beers
Recipes
Day Planner Maastricht
Movie recommendation
Laptops
Guest house recipes
Sports in Maastricht
Dating service
Travel
Cars
Business laptops

Bars in Barcelona
Swimming Pools in NRW
Hair Dryers
Cell Phones
MBA Schools
Frankfurt house search
Skin diseases
Dual SIM cell phones
European stocks
Top restaurants NL
Soccer shoes
Activity parks NL
Digital cameras

How to start?

How to start?

First think about:

- What topic?

How to start?

First think about:

- What topic?
- Can we find enough data? (100-200 entries)

How to start?

First think about:

- What topic?
- Can we find enough data? (100-200 entries)
- Can we ask enough questions? (15-20)

How to start?

First think about:

- What topic?
- Can we find enough data? (100-200 entries)
- Can we ask enough questions? (15-20)
- What is the context?

How to start?

First think about:

- What topic?
- Can we find enough data? (100-200 entries)
- Can we ask enough questions? (15-20)
- What is the context?
- Who is the target group?

How to start?

First think about:

- What topic?
- Can we find enough data? (100-200 entries)
- Can we ask enough questions? (15-20)
- What is the context?
- Who is the target group?
- **Would you like to you use such a DSS?**

The database and your Excel sheets:

An illustrative example: Master Courses Econometrics & OR

- also discussed in the block book on ELEUM.

On ELEUM:

On ELEUM:

- Course Manual

On ELEUM:

- Course Manual
  - Structure, Schedules, Dates
  - Prerequisites
  - Grading policies and further expectations on the DSS and the report

On ELEUM:

- Course Manual
  - Structure, Schedules, Dates
  - Prerequisites
  - Grading policies and further expectations on the DSS and the report
- Reader: Developing a DSS using Excel and VBA

On ELEUM:

- Course Manual
  - Structure, Schedules, Dates
  - Prerequisites
  - Grading policies and further expectations on the DSS and the report
- Reader: Developing a DSS using Excel and VBA
  - Database
  - Calculations
  - User forms / graphical user interface (GUI)
  - Programming with VBA

Important deadlines:

Important deadlines:

- April 24 (Wednesday): deadline to send email including:
  - team members with ID
  - tutorial time slot(s) you are assigned to
  - topic.

Important deadlines:

- April 24 (Wednesday): deadline to send email including:
  - team members with ID
  - tutorial time slot(s) you are assigned to
  - topic.
- June 2 (Sunday): deadline to turn in program and report

Important deadlines:

- April 24 (Wednesday): deadline to send email including:
  - team members with ID
  - tutorial time slot(s) you are assigned to
  - topic.
- June 2 (Sunday): deadline to turn in program and report
- Week of June 3: project defense

Schedule:

Week	Topic	Date
1	Lecture 1	Tuesday, 16.04
2	Lecture 2	Tuesday, 23.04
	Team meetings	Friday, 26.04
3	Lecture 3	Tuesday, 30.04
	Team meetings	Friday, 03.05 (15 min.)
4	Team meetings	Tuesday, 07.05 (15 min)
	Team meetings	Friday, 10.05 (15 min.)
5	Lecture 4	Tuesday, 14.05
	Team meetings	Friday, 17.05 (15 min.)
6	Team meetings	Tuesday, 21.05 (15 min.)
	Team meetings	Friday, 24.05 (15 min.)
7	Team meetings	Tuesday, 28.05 (15 min.)
	Deadline to turn in program and report	Sunday, 02.06
	Project defense	Week of 03.06

Grading policies:

Your DSS grade is based on:

- the implemented DSS (70%)
- the report (30%).

The implementation is graded on these criteria: Contents, user friendliness, programming, model/calculation, overall impression.

The report is graded on these criteria: Description of topic, description of DSS and model, user's guide, manager's guide, etc.

More details in the course manual.

Prerequisites in Excel:

- rename and insert work sheets;
- fill cells in order to create the database;
- format cells;
- understand basic operators $+$; $-$; $=$; $*$ and functions such as SUM, PRODUCT, AVERAGE, MAX, MIN, COUNT, etc.;
- understand IF statements and logical operators such as OR and AND;
- sort a table; and
- drag/copy cells by clicking on the lower right corner of the cell and then dragging in order to extend the series or fill the cells.

What should you do now?

- Read the course manual.
- Find a teammate and discuss possible topics.
- Send the email mentioned before.
- Start thinking about how you build your database and which questions you are going to ask the user.
- Come to the next lecture (Tuesday, April 23) and the first tutorial (Friday, April 26).

Questions?