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University Klagenfurt / Austria
Informatics in Secondary Schools - Evolution and Perspectives

Standard Software as Microworld?

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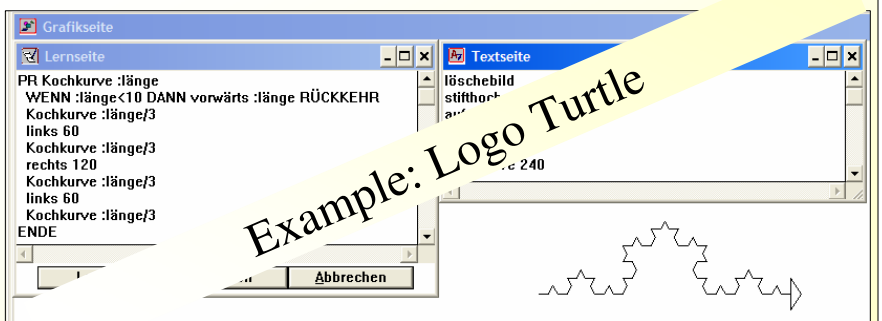
Microworld?

... a **learning** environment ...



... designed to learn how to **program** ...

Programming?

... stands for

- problem solving
  - structured decomposition and recomposition
  - formalization
  - automation

⇒ (representative for)

fundamental concepts of informatics

Microworld!

(re-) definition:

A Microworld should be understood as an

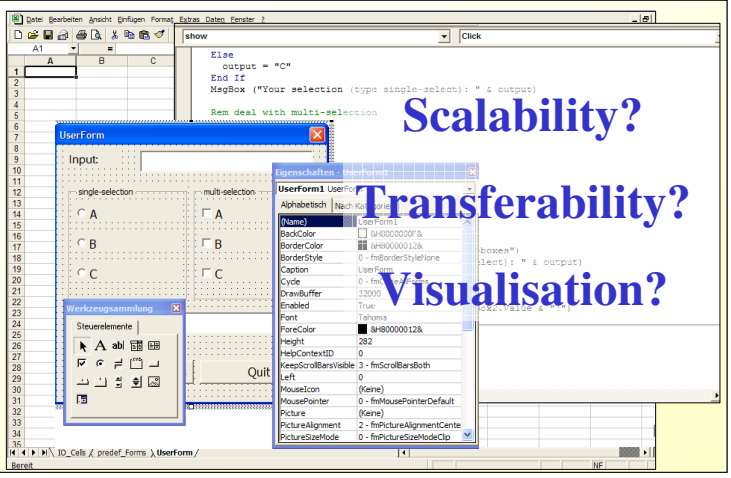
adaptable „learning-cosmos“

that is consistent to the learners and stands out for

- **Scalability**
- **Transferability**
- ability to **Visualise**

Standard Software?

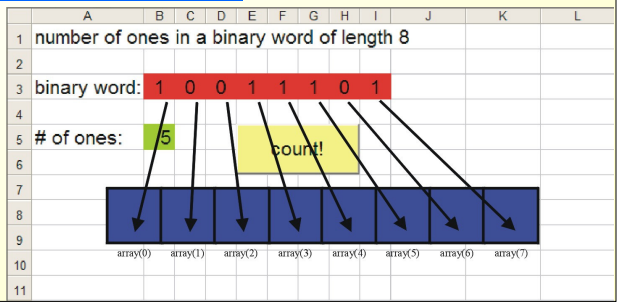
Example:



Standard Software! (1)

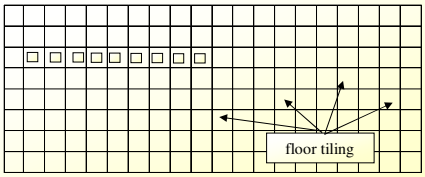
Structural Scalability:

- scaling input and output
- scaling »abstract data structures«



Standard Software! (2)

Stimulus: »How many pieces of chalk are on the floor*?



answer: 9 (»obviously«!!)

Question 1: How can you decide?

Question 2: How do you proceed on counting?

Question 3: Imagine (i.e. **change your perspective**) you are that small that you can only tell about the tile you are on. How do you count now?

Aufgabe 4: Draw a flowchart that pictures your answer to question 3.

Aufgabe 5: The chalk pieces are arranged so that they form a special »**structure**« (»pattern«, »order«) that can be used on counting. Describe this »structure«! What would it mean to counting, if the pieces were arranged in different order, i.e. forming a different structure (which other structures can you think of?), what if there were no structure at all (i.e. if the pieces were arranged randomly)?

*on each tile there shall be one piece of chalk at the most

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Standard Software! (3)

Curricular Scalability:

... i.e. **reusability** of software-tools

... introducing basic (**transferable**) programming-principles

... developing event-triggered programs

... getting in touch with objects

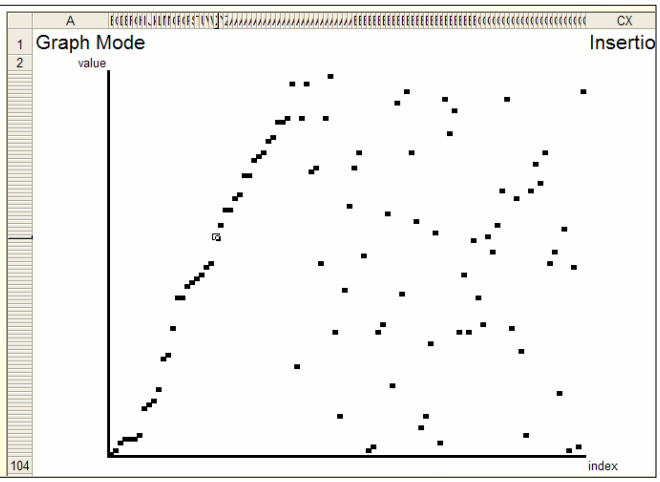
... using tables as data-sources

... solving application-oriented problems

...

Standard Software! (4)

Visualisation



Importance?

The »collection«

- **Scalability**
- **Transferability**
- **ability to Visualise**
- (**Applicability**)

... might be a step towards a list of criteria being

helpful in **deciding the relevance of software-tools**

for teaching informatics.