Roche

Complexity Theory: Optimiz, SW2

- Runtime depends on the size of the problem
- Best Complexity is a linear growth of the runtime
- Size of the problem is somehow the number of bits for the parameters
- To make it HW/SW independent, we focus on elementary operations in the code (e.g. addition, substraction, etc...)
- Go for the most difficult instance of a given size n → Worst Case!
- Big O - Notation ⇒ O(g(n)), Big O of g
- Man sagt, dass ein Algorithmus gut ist, wenn er polynomal ist.

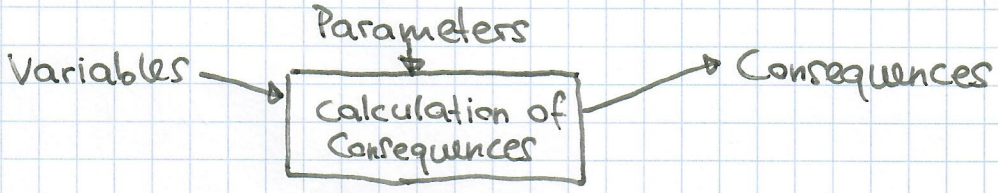
  Good => Polynomial  Bad => Exponential

- Good Problem: Somebody found a polynomial algorithm
  Bad Problem: No polynomial algorithm is known

## Mathematical Models

① Descriptive Models

Also called Evaluation Models or "What if" Models.




② Optimization Model

What's best ?