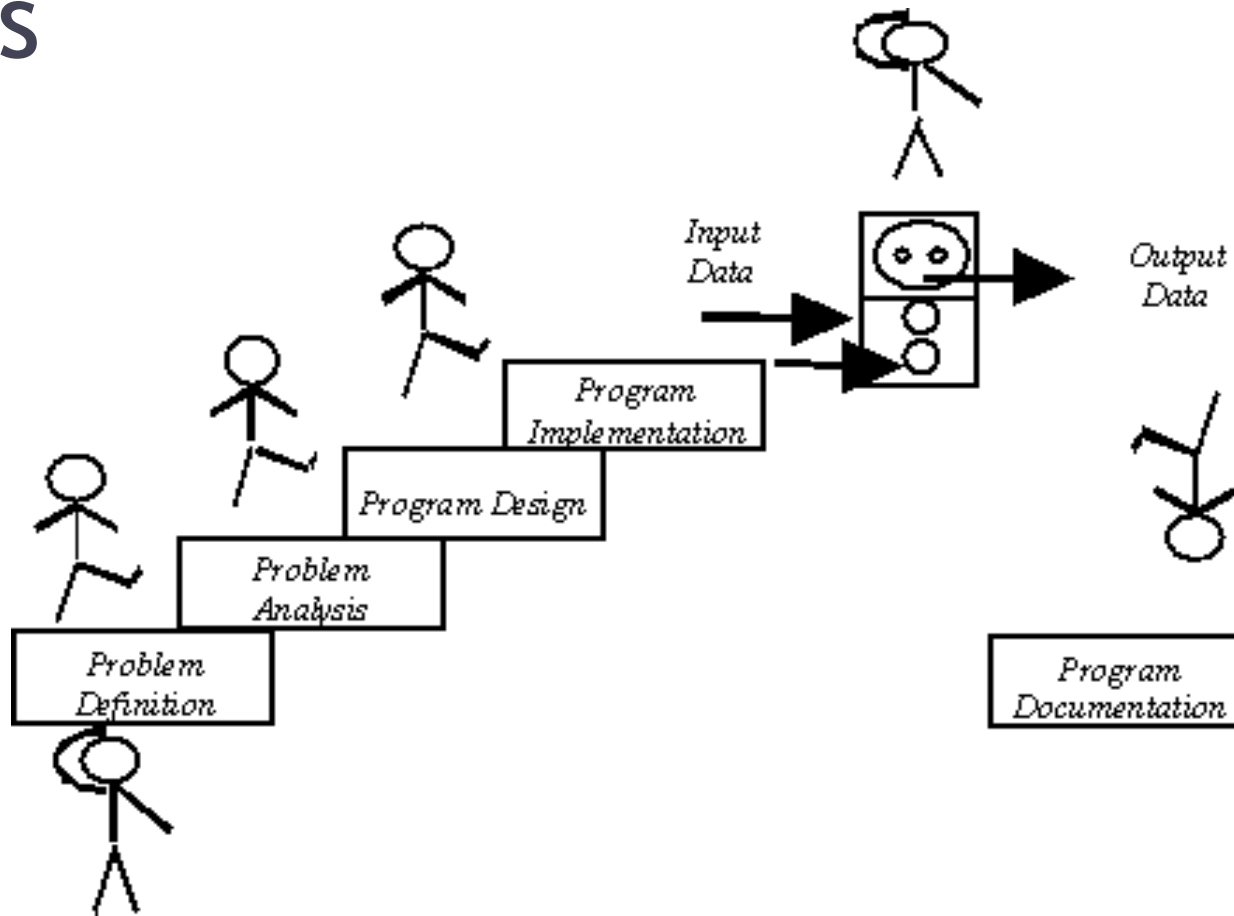


Software Development Methodology



Steps



Step 1. Problem Definition

- Definition of clear, concise problem statement
 - main objective
 - expected results
 - input data
 - scope of solution
 - former experience

Step 2. Problem Analysis

- A description of the problem in terms of computer operations
- Choice of
 - information model (formal representation)
 - method (formula) for solving the problem

Step 3. Program Design

- Decomposition of the problem into smaller and relatively independent sub-problems
- Algorithms for solving the sub-problems
 - algorithm is a precisely defined consequence of elementary operations solving not only a single, but a class of similar problems
- An algorithm can be described either in
 - words
 - graphical shapes – flowcharts
 - pseudo code

Step 4. Program Implementation

- Coding
 - a description of the algorithm into computer program
 - by means of a formal language understandable by other computer programs
- Testing
 - iterative process
 - debugging - removing of syntax errors or “bugs”
 - validation and testing for logic errors
 - test data
 - test data sets – control of the output
 - real data

Step 5. Program Documentation

- Finalize the documentation of the program
- Three main parts:
 - user manual giving information and instructions to the user of the program;
 - technical documentation including program description, flowcharts, program code and test printings;
 - operator's instructions when the program is to be run on a large computer system.