

Algorithmic Thinking for Migrants Teachers Education

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Handout #3: Problem-Solving Techniques

EXERCISE 1

Mark the following statements as true or false:

1. Your goal defines how the problem should be solved, not what needs to be done. (False)
2. It is inadvisable to begin writing a solution before the goal is defined. (True)
3. For any non-trivial problem, there is likely only one solution. (False)
4. Decomposition guarantees an optimal solution. (False)
5. A tree structure is hierarchical in nature. (True)

EXERCISE 2

You're planning to hold a birthday picnic for a child and her friends. Break down the preparation into a tree structure of tasks. The facts are:

- You need to send out the invitations to the parents of the other children.
- Food you'll provide: sandwiches (ham, chicken, and cheese), homemade cake.
- Fresh ingredients (meat and dairy) need to be purchased on the day.
- Other things you need to take: disposable cutlery, blankets, games.
- The park where the picnic is held requires you to reserve a spot.
- All guests will get a goody bag with sweets when they leave.

Figure B.1 Task breakdown for picnic
