CS118 Problem Solving

Definition of Problem Solving

Problem solving is the act of specifying a sequence of tasks which use existing tools and information and are processed to produce a desired end result. [i.e. Problem solving is create a solution from steps we know how to do.]

The "desired end result" is the overall goal of the "Main Task" and it is achieved by breaking down the Main Task into smaller tasks.

After thorough consideration of the problem at hand, the Main Task is identified and the next step is to break it down into smaller tasks. A *task* is an effort which accomplishes something that is either part of or all of the end goal of the parent task, or that is an intermediate goal and will be used to achieve the end goal.

For each of the five problems shown, first identify the main task, then identify the smaller tasks' goals – these should be goals which when applied in the proper sequence will achieve the goal of the main task. Be sure that your sequence is correct, or you may not achieve the desired result.

NOTE: Restating the Main Task is not the same as breaking down into the parts. (While this may seem obvious, it is a problem for some students)

Use abbreviations: Let T01 represent Task 1, T02 represent Task 2, etc

e.g: 1 + (2 * 3) Main Task: Determine the mathematical result of adding 1 to the product of 2 and 3
T01: Determine the product of 2 and 3
T02: Determine the sum of 1 and the result of T01

1. **`max(a)` where `a` is any set of real numbers**

2. **`floor(n)` where `n` is any real number**

3. **`round(n)` where `n` is any real number**

4. **Lock the door**

5. **Set the clock**