Top-down approach

What is it and the way to apply it

Zero

2

Contents

Do it in the Top-down approach way

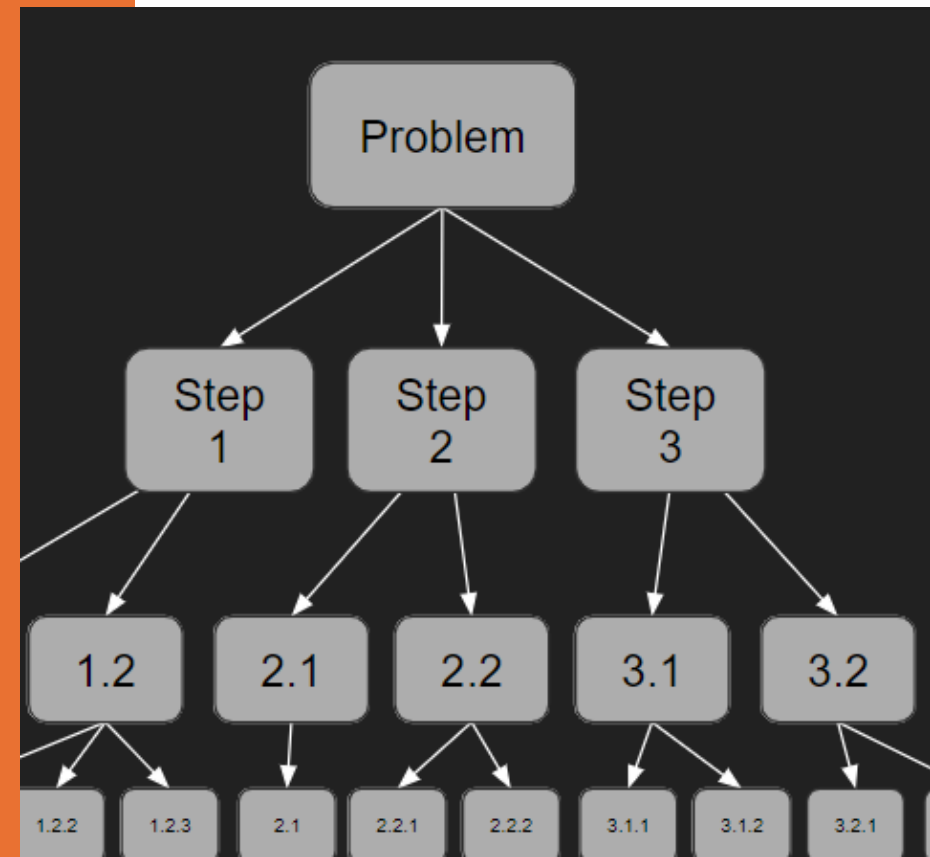# Top-down approach

What is it?

Top–down approach is a *method of problem-solving* that starts with an overview of the problem and divides it into smaller sub–problems.

In the name of Computer science

Stepwise

Refinement

It also know as top-down design and top-down approach and as you can see, it is the same

This method-solving is applying in many fields like Business, Programming and yes, this remarkable program.

The Three Keys

It time to simplify complex problems but how to apply it?

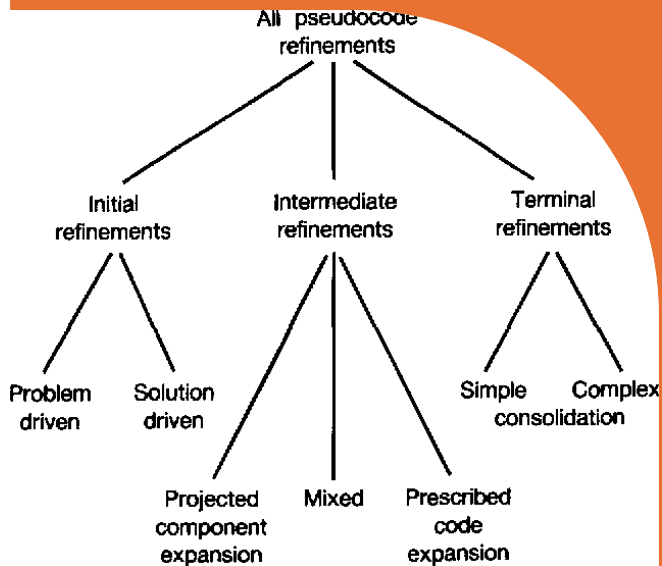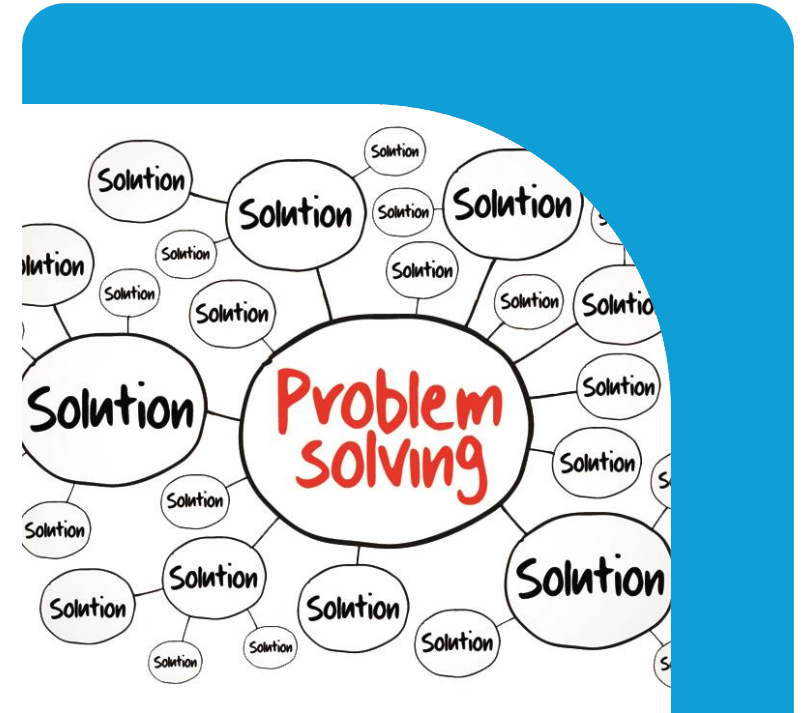**1** Problem Definition and Task Division

2 Solving Small Problems

3 Implementation and Evaluation

FIGURE 3. Hierarchy of Refinement Classes
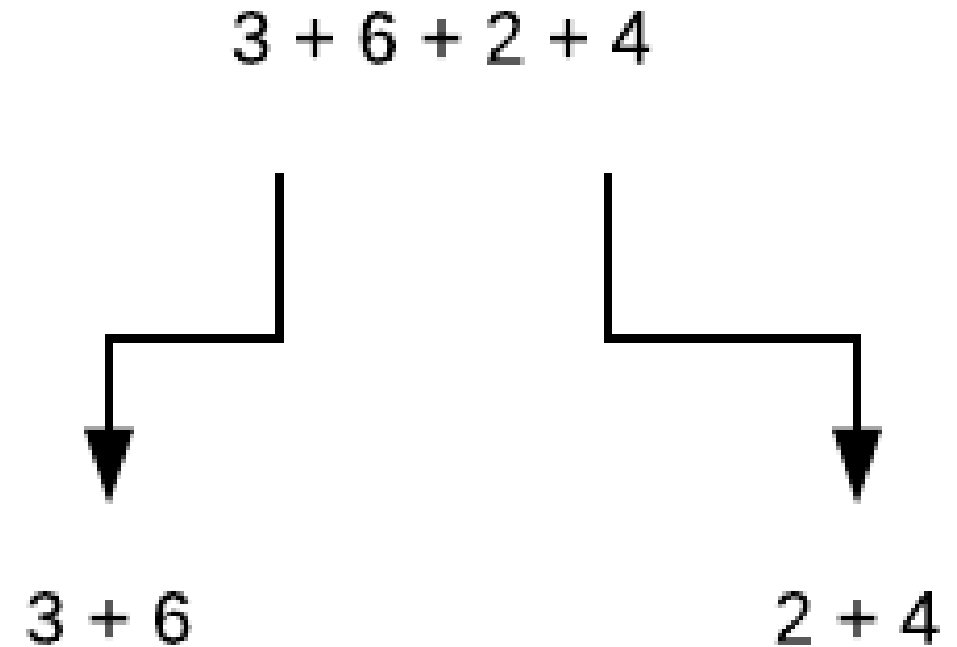
How the problem should be divided?

Functional Decomposition

You need to identify the major things(function, operation...) of the problem. In other word, understand the problem clearly.

Hierarchy and Dependencies:

Organize tasks into a structured order, breaking down the main problem, identify relationships between tasks for effective problem-solving.
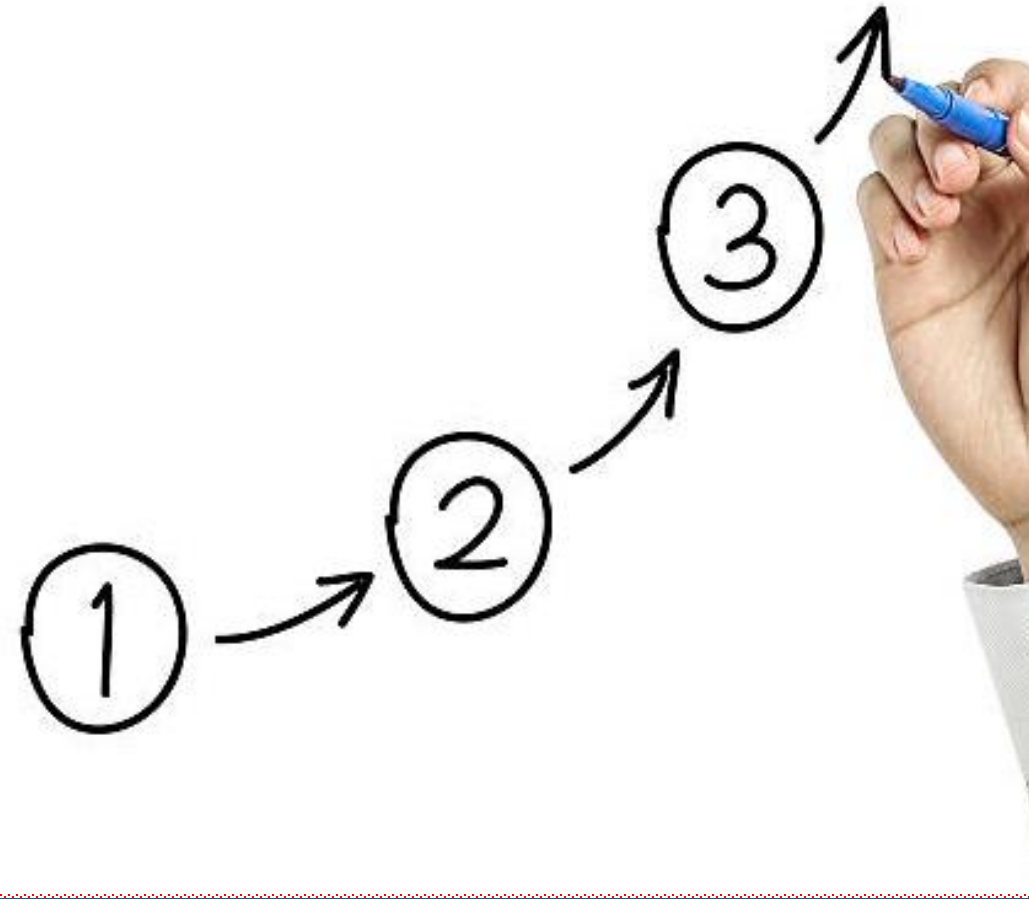
$$3 + 6 + 2 + 4$$

$$3 + 6 \qquad 2 + 4$$

Key for
Simplify, break down, and progress incrementally
SOLVING PROBLEM

Avoid making the problem too complex, keep it manageable. It also applys with your solution, *MAKE IT SIMPLE* and focused on the immediate problem.

Stay focused on the immediate goal BUT DO NOT overwhelming yourself.
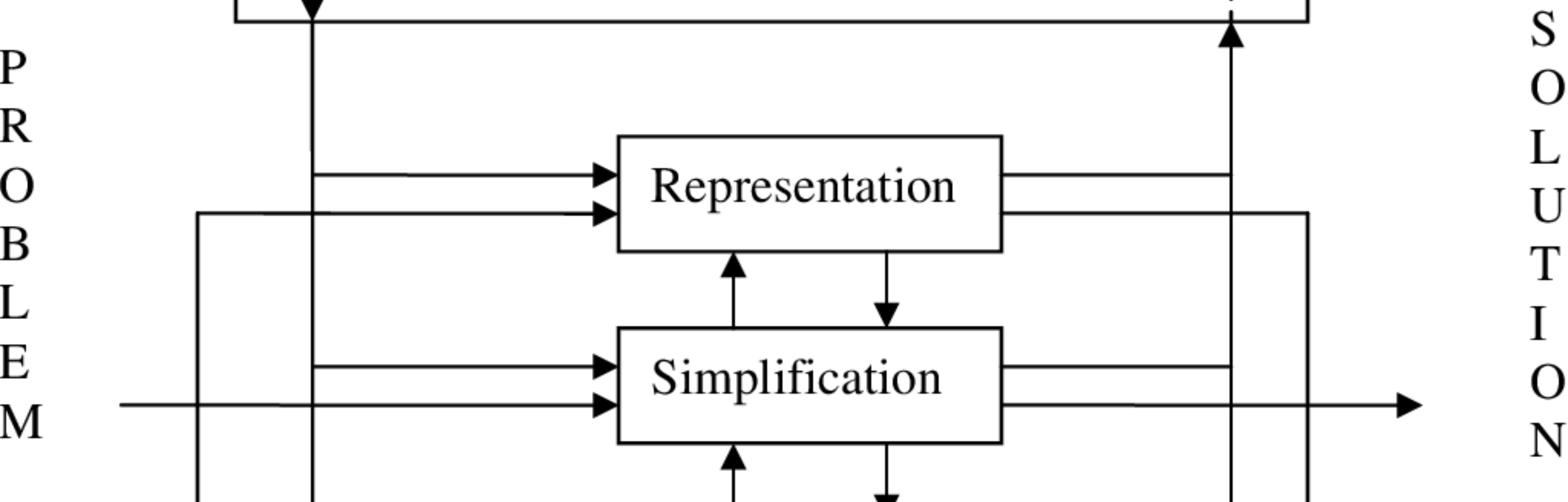
Not the key you want but the key you need

The final step

Time for The BOSS

Now after a lots of hard words you have done. You now can describe the BIG problem in such a level of detail that you can understand clearly now.

That mean this is a **solvable problem**, and you know what to do

BUT SHOULD I USE THIS METHOD?

Well that's depended on the problem and yourself actually

The Advantages

1

Understand easily

Provides a clear and structured approach to problem-solving, breaking down complex issues into manageable components, enhancing overall understanding.

2

Less time

Allows for efficient use of time by avoiding unnecessary steps and computations because you understand and identify all the key for the problem.

3

Educational Value

Witness and learn from the problem-solving process, providing insights that can be applied in future scenarios.

4

Strategic Planning

Prioritization of tasks and a systematic progression toward the overall goal, ensuring a more effective and organized problem-solving process.

The Disadvantages

Enough with all the good things, here is the bad one.

Easy to do
HARD to change

Less flexible, **as decisions are made at a high level and the process is more structured** so **it's really hard to change** anything when we go a far way

RISK!!!

IT CAN LEAD TO
GREATER RISK

Because we all take step by step from the TOP => If the first step is wrong, then the solution is burned down

How I apply this method on this program?

Break the problems into small thing

I Breaked it down. Top down method: I break it into question: what is it? How it work? Where is the "place" I can use it for? Will this have any bad things?

Solving Small Problems

Now it is so simple, what I need to do is just do a research to answer each question

Time for the final answer

Done with all the small thing, combine it into this PPT and send to Mr. Dao Vo ☺

This is the end

Thank You

Vo Nguyen Gia Huy

Internship - Journey To Your Best Program

Challenge 0 – The first step