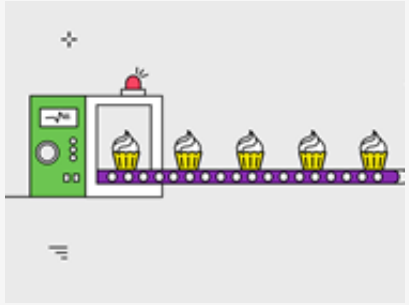
10 Steps to Solving a Programming Problem

First 4 Steps

Describe it manually

Work through with at least multiple sets of sample data



Ask for help/hint

If you are struck ask for help

Understand the Problem

Read the problem at least few times.

Do I know how to solve this?

Yes (look for multiple solutions?)

1 : Understand the Problem

You can't solve a problem you don't understand

- What is the intended goal of this problem?
- What are the inputs to this program?
- What is the expected output of the program?
- Have I worked on similar problem before?
- I did not understand the problem, then read it or ask for details.

2: Work through the problem manually

Create 3 sample data

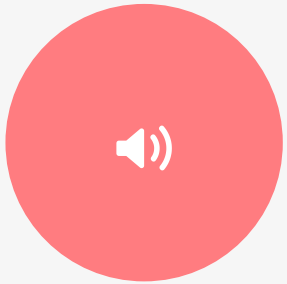
Think of at least three sets of sample data.

Corner / Edge case

It occurs only at an extreme operating parameter

Draw the steps

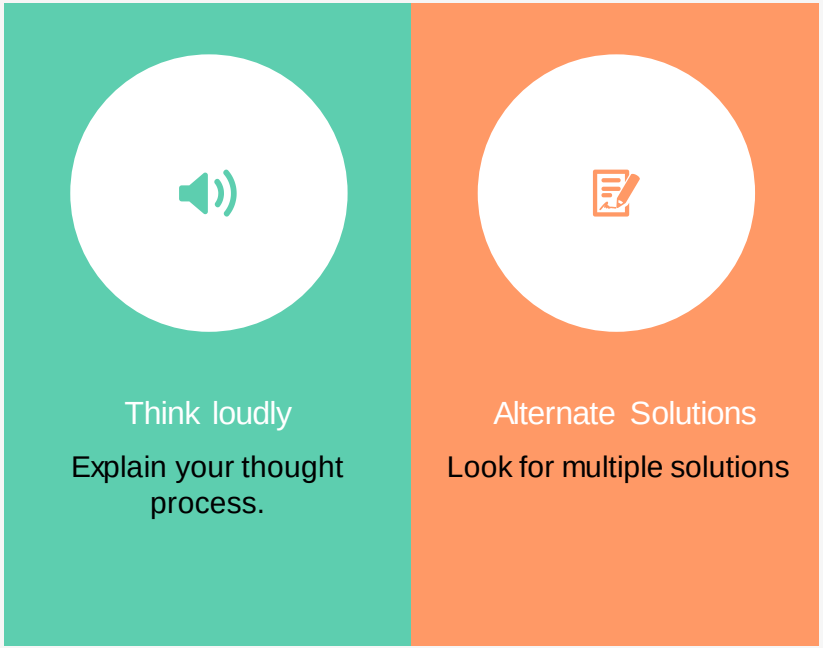
It is easy to gloss over the steps – one by one.



Validate steps with 3 data

Validate if the steps are good for all data – else redefine

3: Do I know how to solve this?



4: Ask for help/hint

- Look for hint in the problem/ from the person
- Try solving with it
- Struck again, look for more hint(s)
- Repeat until problem is solutionised

Next 4 Steps

Simplify your solution

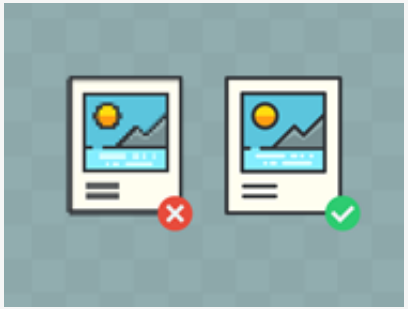
Solution better and optimize the same.

Pseudo to Java Code

Translate your pseudo to Java Program step by step.

Know the solution?

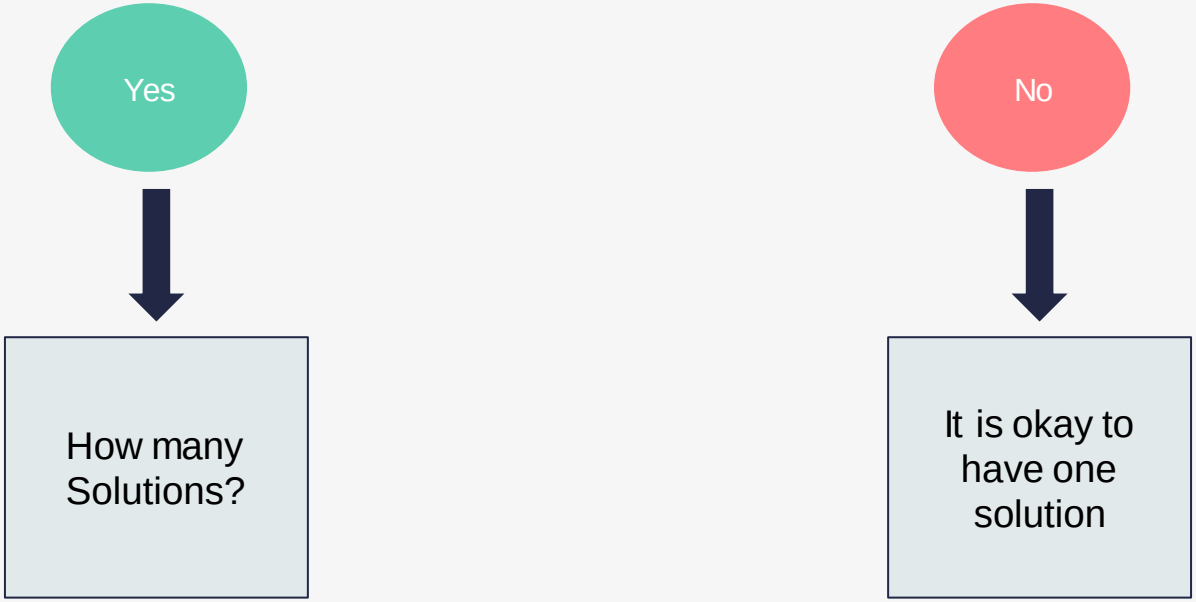
Look for alternate solution



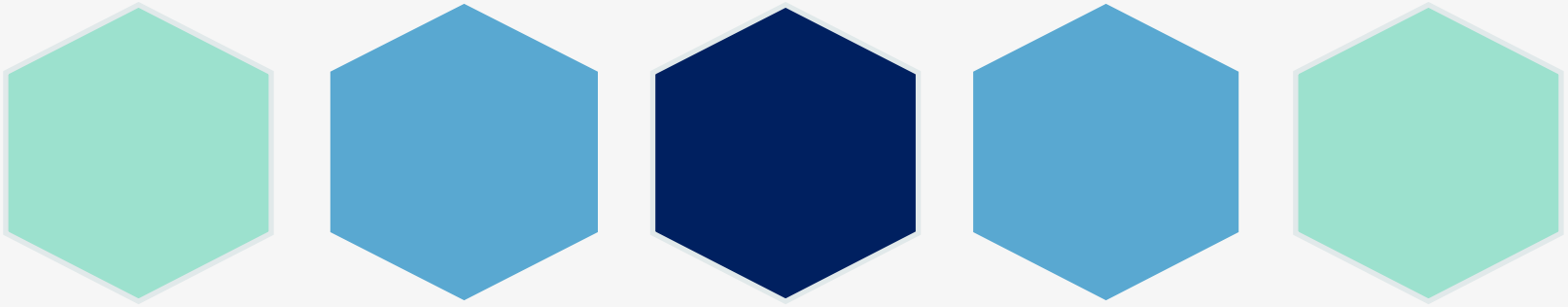
Write pseudocode

Focus on the logic and steps.

5. Derived the solution!



6: Simplify & Optimize your solution



Goals?

What are your goals for simplifying and optimizing?

Readable?

Someone couldn't read your code, then it require improvement!

Performance?

How much time and resource it takes to run your code?

Reusable?

Repeating some steps a lot? See if you can define in another method.

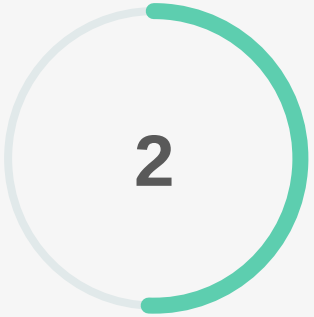
Edge Cases?

Does your code cover the edge cases?

7: Write pseudocode

Every Step to a Line

Write pseudocode line by line



Syntax – Not necessary

Don't get caught up with the syntax

Find your logic

Focus on the logic and steps.

Relook at logic

Revise the logic on each line.

8: Convert Pseudo -> Code

Translate

Translate each line into real java code with comments.

Skip

Unknown? Don't worry !

Write comments and Move On.

Repository

Refer to your Java Class – Methods Repository for your correct syntax.

Validate

Check if values and code are behaving as expected.

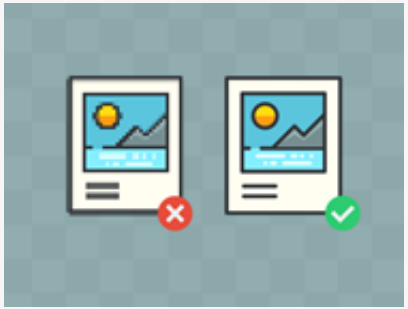
Last 2 Steps

Debug

Debug them to solve it

Test the code

Run it against different Test data



9.Test the code

Run your code against different test data and check whether everything is working fine

10: Debug

1. Check the console to see what the (error) message says
2. Comment lines of code and output what you coded so far to quickly see if the code is behaving as expected.
3. Use other sample data if there are scenarios you did not think of and see if the code will still work.
4. Save different versions of my file if you am trying out a completely different approach

First Problem

Given the input int array, find the sum of any two distinct indices of the matching given the target

20 minutes

Recap & Additional Tips