HOW TO FAIL 🧑 AT SOLVING PROBLEMS

WHENEVER JOHN ENCOUNTERS A PROBLEM:

💥 He jumps at the problem **without much thinking**

💥 He implements his solution in an **unstructured way**

💥 He **gets stressed out** when things don't work

💥 He is **too proud to research** solutions

⬇ **FIX**

👍 **Stay calm and slow down**, don't just jump at a problem without a plan

👍 Take a very **logical and rational approach** (programming is just logic, in the end...)

👍 Use my **4-step framework** to solve any problem ⟶

NEXT SLIDE

👉 **Example:** *In an array of GPS coordinates, find the two closest points*

John can code now 😄

4 STEPS TO SOLVE ANY PROBLEM

1 Make sure you 100% understand the problem. **Ask the right questions** to get a clear picture of the problem

💬 **Project Manager:** *"We need a function that reverses whatever we pass into it"*

1 👉 What does "whatever" even mean in this context? What should be reversed? **Answer:** Only strings, numbers, and arrays make sense to reverse...

👉 What to do if something else is passed in?

👉 What should be returned? Should it always be a string, or should the type be the same as passed in?

👉 How to recognize whether the argument is a number, a string, or an array?

👉 How to reverse a number, a string, and an array?

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2 **Divide and conquer:** Break a big problem into smaller sub-problems.

EXAMPLE

💬 Project Manager: *"We need a function that reverses whatever we pass into it"*

2 SUB-PROBLEMS:

👉 Check if argument is a number, a string, or an array

👉 Implement reversing a number

👉 Implement reversing a string

👉 Implement reversing an array

👉 Return reversed value

Looks like a task list that we need to implement

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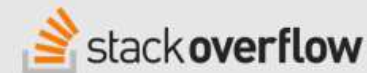
⬇

3 Don't be afraid to do as much **research** as you have to

EXAMPLE

💬 **Project Manager:** *"We need a function that reverses whatever we pass into it"*

3
👉 How to check if a value is a number in JavaScript?

👉 How to check if a value is a string in JavaScript?

👉 How to check if a value is an array in JavaScript?

👉 How to reverse a number in JavaScript?

👉 How to reverse a string in JavaScript?

👉 How to reverse an array in JavaScript?

Google   stack**overflow**   MDN web docs mozilla

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4 For bigger problems, **write pseudo-code** before writing the actual code

EXAMPLE

💬 Project Manager: *"We need a function that reverses whatever we pass into it"*

4
```
function reverse(value)
  if value type !string || !number || !array
    return value

  if value type == string
    reverse string
  if value type == number
    reverse number
  if value type == array
    reverse array

  return reversed value
```